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EXPERIENCE OF INDUSTRIALISATION IN DEVELOPING COUNTRIES – PERFORMANCE INDICATORS AND THEIR INTER RELATIONS

NARAYAN CHANDRA NATH^{*}

1. INTRODUCTION

World statistical figures indicate that developing countries (DCs) with more than 50% of the world population hold only 19% of world income as against developed market economies holding 70% income with only 17.4% population^[1]. Average per capita Gross Domestic Product (GDP) of developing countries remains at not more than 5% of the level of developed countries. Other socio-economic indicators may talk of wider gap between the rich and poor nations. In narrowing such gap and increasing the level of poverty alleviation, concern has been widespread among the social scientists, planners and politicians not only at national level of developing countries but also at wider international platform in different forums.

Developing countries are trying to explore path for making breakthrough into style of development and have come up to recognise the importance of uplifting the economy through industrialisation. In consonance with this, in the Lima conference of 1975, it was expressed with stress to make determined efforts to raise the contribution of developing countries to world manufactured value added from the present level of 7% in 1975 to 25% by 2000.

The objective of the paper is to analyse and synthesise the experiences of industrialisation of developing countries and make attempts for establishing some interrelations of their industrial performance. Entire work aims at making some generalisations for the formulation of suitable industrialisation strategy in the context of developing countries, more specifically applicable to countries like Bangladesh in uplifting¹ the economy and alleviation of poverty. To synthesise the experiences of industrialisation, eighteen developing countries- ten from Asia, four from Latin America, three from Africa & one

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from Europe have been selected. Taken together, these countries have 69% population and 60% GDP of DCs. The countries are of three types with respect to population size: large (L), small with modest natural resource (SM) and small ones with ample natural resources (SR).

The countries are as follows:

Continent	L	SM	SR	Total
Latin America	Argentina, Brazil, Mexico and Columbia.	-	-	4
Asia	India, Philippines, Republic of Korea, Thailand, Pakistan, Indonesia and Bangladesh.	Hong kong Singapore.	Malaysia 10	
Africa	Nigeria	Kenya, Tunisia	-	3
Europe	Yugoslavia	-	-	1
Total	13	4	1	18

Out of eighteen countries, thirteen are large, four small with modest natural resource and one is small with ample natural resource. Four countries are of low income base (India, Bangladesh, Pakistan and Kenya) and the fourteen are medium income countries. In terms of market size measured by volume of GDP, three countries are large (India, Mexico and Brazil), nine countries are medium sized (Indonesia, Philippines, Nigeria, Yugoslavia, Korea, Argentina, Pakistan, Thailand and Colombia) and six countries are small (Malaysia, HongKong, Singapore, Bangladesh, Tunisia and Kenya.).

For analysis, country data files of World Bank and United Nations have been used. Statistical tools of tabulation and correlation have been widely used for quantitative analysis and presentation. Time frame of the data used in the paper ranged from 1960 to 1980 and in some cases from 1950 to 1980 i.e. 20 to 30 years of the later half of the present century. The paper has been structured into seven sections. First section is the introductory discussion on the paper. Second section deals with the level of industrialisation and growth rate of manufacturing and their relation with development indicators of developing countries. Third section gives focus on industrial structure and its relation to manufacturing level and economic development. Fourth section deals with trade indicators in

relation to industrial development. Fifth section deals with determination of sources of trade related industrial growth and industrialisation strategy. Sixth section dwelt on the factors influencing the determination of industrialisation strategy in the condition of developing economies. Last section contains observations and concluding remarks.

2. LEVEL AND GROWTH OF INDUSTRIALISATION AND ITS INTERLINKS WITH DEVELOPMENT INDICATORS

Level of industrialisation may be shown by proportion of contribution of manufacturing sector to GDP and per capita manufactured value added (MVA) of the country. Per capita energy consumption also may be used to measure the level of industrialisation in the country.

(A) LEVEL OF MANUFACTURING (MVA AS % OF GDP) IN THE INDIVIDUAL COUNTRIES AND ITS RELATION WITH DEVELOPMENT INDICATORS

As the table 1 shows, on average, manufacturing contribution to GDP has been 20% in 1984 for developing countries under study. Level of manufacturing has been increasing over the time from the fifties but at a very slow pace. Some countries like Argentina, Brazil, Colombia, Mexico and India remained at stagnating level over the period of thirty years in the contribution of manufacturing to GDP. On the other hand, countries like Hong Kong, Korea, Singapore, Malaysia and Thailand could make a great leap in the sixties and seventies in developing their level of manufacturing. It is to be noted that over the periods of fifties, sixties and seventies share of agriculture has declined in all the countries but share of manufacturing sector has not increased in that proportion. It is because of increasing contribution of service sector to GDP. As revealed from the table, thirteen countries in sixties and fifteen out of eighteen countries in seventies showed positive change of manufacturing contribution to GDP. On average, change in level of manufacturing in both the periods is positive and has been great in seventies compared to sixties. Contribution of MVA to GDP in the fifties was 16.7% in sixties 17%, and in seventies 19.15%

It should be noted however that there is a wide variation in contribution of MVA to GDP between the countries ranging from 5% in case of Nigeria and 36% in case of Yugoslavia (in 1984). There are countries like Argentina, Brazil, Yugoslavia, Mexico and Philippines which experience level of manufacturing higher than 20% from fifties stably maintaining their

Table-I MVA as a percentage of GDP for developing countries under study.

Name of Countries.	% MVA to GDP						1984	Change in 60's (point)	change in 70's (point)
	1950-60	1960-70	1970-80	1980	1982	1984			
Argentina	29.4	31.1	26.9	33	25	30	+1.7	-4.2	
Brazil	25.5	26.1	26.6	24	25	26	+ .6	+ .5	
Colombia	16.6	17.6	17.7	21	20	17	+1.0	+ .1	
Mexico	24.2	21.4	23.1	24	22	24	-2.8	+1.2	
India	15.5	14.4	16.3	13	17	14	-1.1	+1.9	
Hong Kong	15.5	30.9	27.4	33	33	24	+15.4	-3.5	
Korea Republic	13.0	19.00	27.00	21	28	28	+6.0	+8	
Singapore	11.6	16.3	23.3	20	30	25	+4.7	+7	
Malaysia	8.7	10.8	19.2	15	21	22	+2.1	+8.4	
Indonesia	25	9	10.6	9	13	10	-16	+1.6	
Pakistan	12.8	14.8	16.3	15	15	18	+2.7	+1.5	
Bangladesh	5.3	5.7	7.1	6	9	9	+4	+1.4	
Yugoslavia	35.9	28.2	30	-	37	36	-7.7	+1.8	
Thailand	12.6	14.7	18.9	16	19	28	+2.1	+4.2	
Philippines	20.3	20.8	24.6	23	25	25	+5	+3.8	
Tunisia	-	8.6	12.3	8	12	12	-	+3.7	
Kenya	9.4	10.8	12.4	11	11	11	+1.4	+1.6	
Nigeria	3.5	6.5	5	7	6	4	+3.0	-1.5	
Average =	16.7	17	19.15	18.4	19.1	20	+3	+2.15	

Source: World Bank: World Tables, 1984.

position in contributing to GDP. There are countries like Korea, Hong Kong, Singapore, Thailand and Malaysia which had lower level of manufacturing in the fifties but have grown rapidly in the sixties and seventies and attained manufacturing level not less than 25% in any of them. There are countries like India, Colombia, Pakistan, Bangladesh, Kenya and Nigeria which are maintaining from the very fifties upto now a very low level of manufacturing. In the table 2, distribution pattern of level of manufacturing by countries and its relation with development have been indicated. As the figures show, 44% of the countries under study experienced manufacturing level below 20%. Only 16% has exceeded the level of 30% contribution to GDP. Calculation shows that there exists high correlation of manufacturing level with per capita GDP, rank correlation being 0.75 with observed 't' =4.03 i.e. with high acceptability. There exists high correlation of level of manufacturing with per capita manufacturing value added (MVA), rank correlation being .89 with observed 't' value of 8.28, with per capita GDP $r=.71$, 't'=4.03, and with MVA, $r=.51$, 't'=2.37. This indicates that development indicators are highly correlated to level of manufacturing. But its correlation with GDP is at a low figure of + .21 with 't'=0.859 indicating that relation could not be established. It means that level of manufacturing is not correlated to market size of a country and large countries may not necessarily proportionately be developed industrially.

B) MANUFACTURING VALUE ADDED PER CAPITA:

In respect of per capita MVA, as per data show, among eighteen countries, highest rank is held by Singapore with \$ 1144 followed by Hong Kong with (\$966). If we look into the distribution of per capita MVA we shall see that more than 55% of the countries are having per capita MVA upto \$ 150 only and 61% upto \$ 200. Only one country Singapore holds \$ 1144 and only 16% of the countries have per capita value added exceeding \$ 500. On average, per capita MVA is about \$ 116. All these figures indicate that on the one hand there exists poor level of income from manufacture and on the other, there is a wide variation in between the countries in respect of per capita MVA. The ratio of lowest to highest figure is 0.0078 i.e. very insignificant, range being from \$ 9 to \$ 1144 [4] If we calculate the correlation of per capita MVA with per capita GDP, we get the results of $r=0.994$ with observed 't'=33.9 where theoretical value of 't' is 2.12 at 5% level of significance with (n-2=16) d.f. This indicates that correlation in between per capita income from manufacturing and per capita GDP is near to positive unity. All these indicate that with the high

Table-2 Level of manufacturing and development indicators.

Proportion of MVA to GDP (1982)	Countries	No. of countries.	Average GDP Smillion 1982	Average MVA \$ million 1982.	Per Capita GDP \$ average.	Per Capita MVA \$ average	
Below 10%	Nigeria & Bangladesh	2	41966	2397	478	27.3	
10% -15%	Indonesia, Kenya, Tunisia	3	34851	3618	591	61.25	
15%-20%	Pakistan, India & Thailand	3	80526	9304	283	33.00	
20%-25%	Malaysia, Mexico & Colombia.	3	78498	12809	2037	332.00	
25%-30%	Argentina, Brazil, Philippines, Korea.	4	110898	20279	1792	327.7	
30% above	Yugoslavia, Hong Kong & Singapore.	3	30447	7351	2995	723.0	
Rank correlation (r) of proportion of MVA to GDP with Observed 't' value		.859	2.515	4.03	8.28	.71	.89

Source: World Bank: World Tables, 1984.

level of industrial development, possibility of high level of living of population tends to increase.

C) PER CAPITA ENERGY CONSUMPTION:

Results of calculation show that there exists a strongly high positive correlation in between the manufacturing level and per capita energy consumption, rank correlation being .90 with 't' value of 8.26. This gives us ground to visualise the level of industrialisation from the figures of per capita energy consumption.

Correlation coefficient of per capita MVA with per capita energy consumption=.9545, observed $t = 12.67$, theoretical $t=2.12$. As the table 4 shows, highest per capita energy consumption has been found in Singapore with 8544 Kilograms (Kgs) of coal equivalent followed by Yugoslavia with 2402 kgs, Hong Kong with 1881 kgs, Mexico with 1684 kgs, Korea with 1563 kgs and Brazil with 1101 kgs. Lowest per capita energy consumption is found in case of Bangladesh with 49 kgs which is only .57% that of Singapore. Except in Singapore and Yugoslavia, in no other countries, per capita energy consumption could exceed 20% of the level of USA — most advanced country in the world. In the countries like India, Pakistan, Kenya & Nigeria this level remains below .2%. Level of Bangladesh is at only 0.42% of the US level in per capita energy consumption.

Frequency distribution of per capita energy consumption over the period of 1960-80 may be shown in the following table.

Table-4 Frequency Distribution of Per capita Energy Consumption.

Range (Kilograms)	No. of countries.	1960 (% of total)	1970 (% of total)	1980 (% of total)
Below 50		2 (11)	1 (5.5)	1 (5.5)
5 -200	(39)	7 (16.67)	3 (5.5)	1
201-300		1 (5.5)	3 (16.67)	4 (22.2)
301-500		1 (5.5)	2 (11)	3 (16.67)
501-1000		5 (27.8)	4 (22.2)	2 (11)
1001-2000		1 (5.5)	4 (22.2)	4 (22.2)
2001-5000		1 (5.5)	1 (5.5)	2 (11)
5001+		0 (0)	0 (0)	1 (5.5)
		18 (100)	18 (100)	18 (100)

Source: World Bank: World Tables, 1983.

Table-3 Per capita Energy consumption

Countries	(Kilograms)					
	1960	1970	1980	% of USA	Growth 1960-70	19704 80
USA	8408	11375	11626	100	3.1	.2
Argentina	1177	1779	2161	18.6	4.2	1.96
Bangladesh	-	28	49	.42	-	5.7
Brazil	385	577	1101	9.47	4.1	6.7
Colombia	519	730	970	8.34	3.5	2.8
India	114	165	210	1.8	3.8	2.4
Indonesia	129	143	266	2.28	1.03	6.4
Kenya	57	205	208	1.8	13.65	.14
Korea	208	723	1563	13.4	13.26	8.00
Malaysia	616	770	881	7.6	2.25	1.35
Mexico	786	1145	1684	14.5	3.8	3.9
Nigeria	29	51	169	1.45	5.8	12.7
Pakistan	142	209	224	1.92	3.9	.69
Philippines	159	333	380	3.3	7.6	1.33
Singapore	2110	4303	8544	73.5	7.3	7.00
Thailand	63	216	370	3.2	13.0	5.5
Tunisia	173	361	652	5.6	7.6	6.1
Yugoslavia	858	1558	2402	20.7	6.14	4.4
Hong Kong	649	1382	1881	16.2	7.85	3.1

Source: World Bank: World Tables, Vol. II, 1983.

As frequency distribution shows, only 50% of the countries could attain the level of 500 kgs per capita energy consumption per year, which indicates very low level of industrial development. Over the years from 1960, per capita energy consumption tends to increase. But here also, there is marked variation in between the countries and the ratio of lowest to highest is about 0.0057.

As far growth rate of per capita energy consumption is concerned, the table 3 indicates that in both the sixties and seventies, positive growth rate is well marked in all the countries. In growth performance of per capita energy consumption there exists wide variation in between the countries. There are countries like Colombia, India, Kenya, Malaysia, Pakistan, Philippines, Thailand, Hong Kong, Korea and Argentina where growth rate of per capita energy consumption has got slowed down in seventies relative to sixties. Comparatively higher growth rate in the seventies has been experienced by Bangladesh, Nigeria, Indonesia and Brazil. Among the newly industrialised countries, growth rate of per capita energy consumption has got slowed down in case of Yugoslavia and Hong Kong. High growth rate in both the periods is found in Singapore, Korea, Tunisia, Brazil and Nigeria. Korea showing highest growth rate in sixties is still showing second highest growth rate in seventies. Low growth rate in seventies of per capita energy consumption has been shown by Pakistan, Kenya, Malaysia, Philippines and Argentina. Results of calculation show that there is highly strong positive correlation of MVA per capita with per capita energy consumption, rank correlation being 0.9545 with observed 't' value of 12.67 with theoretical 't' of 2.12 at 5% level of significance with 16 d.f. Growth rate of per capita energy consumption has got positive correlation with manufacturing growth rate and GDP growth rate. In the former case $r=0.522$ and $t=2.45$ and in later case $r=0.362$ and $t=1.54$. Thus per capita energy consumption is a good indicator not only for assessing level of industrial development but for overall economic development of the countries.

D) GROWTH RATE OF MANUFACTURING

In so far as manufacturing growth rate is concerned, in both the periods of sixties and seventies, as indicated in table 5, positive trend is well marked in all the developing countries under study with wide variation in between them. High growth rates in both the periods have been found in countries like Brazil, Mexico, Singapore, Hong Kong, Korea, Thailand, Nigeria, Tunisia and Yugoslavia. The countries slowing down growth rates of MVA in seventies are Pakistan and Argentina. Comparatively higher growth rate in seventies has been found in Indonesia, Bangladesh, Tunisia, Malaysia and Kenya. India shows a modest growth rate of 4% in both the periods. Highest growth rate of manufacturing and per capita MVA is found in both the periods in Korea, Singapore and Hong Kong though show remarkable growth rate of MVA they could not maintain growth rate in both the periods of seventies and sixties. It should be noted that average growth rate of MVA in real terms for all countries together has been 8.6% in sixties and 8.92% in seventies i.e. satisfactorily high. Growth rate of GDP has been 6.1% in sixties and 6.4% in seventies i.e. industrial growth has exceeded overall economic growth of these countries. Growth rate of per capita MVA is 6.9% in sixties and 5.5% in seventies. Following Korea, second highest growth rate of per capita MVA is found in Hong Kong followed by Singapore. Thus, Asian NICs have highest growth rates of MVA and per capita MVA in both the periods. If we relate growth rate of MVA to growth rate of GDP, we shall see that there exists high correlation in between the two, R being, 0.52 and $t=2.56$. Elasticity of GDP to MVA has been found .71 in sixties and .78 in seventies for all countries under study. It means that one per cent growth rate of MVA will lead to 71% growth of GDP as per results of sixties and .78% growth of GDP as per results of seventies. Except Nigeria and Bangladesh all countries are having high elasticity of GDP with respect to growth of manufacturing. 50% of the countries are having near to unit elasticity of GDP growth rate with respect to MVA. In case of growth rate of per capita MVA all countries except Argentina are showing positive trends in both the periods. Of course, very low per capita MVA growth is visible in both the periods for India, Colombia and Kenya. This talks of stagnating situation in the manufacturing sector of the countries concerned. In 50% of the countries growth rate per capita MVA has exceeded 5% in both the periods. This talks of increasing role and activities of manufacturing in the national economy.

Table-5 Growth rate of MVA and GDP and elasticities of GDP with respect to MVA

Countries	Growth rate of MVA at constant		Growth rate of GDP at constant		Growth rate of per capita MVA		Elasticities of GDP to MVA	
	1960-70	1970-80	1960-70	1970-80	1963-73	1973-81	1960-70	1970-80
Argentina	5.6	0.1	4.3	1.9	2.5	2.1	0.76	.19
Brazil	9.7	8.7	8.2	8.4	6.7	3.6	0.84	0.96
Colombia	5.7	5.7	5.1	5.6	0.4	2.5	0.89	.98
Mexico	10.1	7.1	7.6	6.5	5.4	3.8	0.75	.91
India	4	4.7	3.4	3.7	1.4	2.9	0.85	.79
Hong Kong	13.6	10.2	10	10	10.3	9.2	0.73	.98
Korea	17.6	15.6	8.6	9	17.8	11.4	0.49	.58
Singapore	13	9.7	8.8	8.6	15.7	8.6	0.68	.88
Malaysia	9.7	11.1	-	7.8	6.2	6.5	-	-
Indonesia	3.3	13.9	3.9	7.8	-	-	1.2	.56

Table-5 (Continued)

Pakistan	9.4	4.5	6.7	4.8	3.9	3.6	0.71	1.06
Bangladesh	6.6	11.2	3.7	4.1	2.5	5	0.56	.37
Yugoslavia	5.7	7.1	6	5.8	5.7	5.2	1.05	0.82
Thailand	11.4	10.4	8.4	7.2	8.4	8.3	0.74	.69
Philippines	6.7	6.9	5.1	6.2	-	-	0.76	.90
Tunisia	7.8	11.7	4.7	7.4	7.9	8.3	0.60	.63
Kenya	6.5	9.5	5.8	5.8	4.9	2.7	0.89	0.99
Nigeria	9.1	12.4	3.1	4.5	4.4	8.4	0.34	.38
Average	8.64	8.92	6.08	6.39	6.89	5.49	.71	.78

Correlation of
growth rate of
MVA with growth
rate of GDP

= 0.52

t = value

=2.36

Source: 1. World Bank: World Tables, 1983,

2. UN Hand book of International Trade and Development Statistics, 1985.

3) INDUSTRIAL STRUCTURE IN DEVELOPING COUNTRIES

In understanding the relative industrial base of a country, looking into its industrial structure becomes very important. Analysis of industrial structure may be effectively made by demarcating between consumer goods, intermediate goods and capital goods including consumer durables. Analysis of industrial structure has been made by using both value added and employment indicators in the sector. At the outset, it is notable on the basis of experiences of developed countries that with increasing level of development, share of capital goods and intermediate products tends to increase, while share of consumer goods industries tends to decline. Share of consumer goods in USA and Japan, for example, is only 28.2% and 24.8% respectively and the rest 72% and 75% are held by intermediate and capital goods sector jointly. Here data on industrial structure with its change over 1973-80 in 16 developing countries has been shown in tabular form (Table-6). As the data indicate, out of 16 countries, in nine countries share of consumer goods in the industrial structure is less than 50% of total manufacturing value added of the country while in 7 countries this share exceeded 50%. Countries where consumer goods industries predominate are the countries with narrow industrial base such as Bangladesh, Philippines, Thailand, Colombia, Kenya, and Pakistan. On the other hand, the countries with the broader industrial base like Singapore, Mexico, Argentina, Republic of Korea, India, Yugoslavia and Brazil experience overwhelming predominance of capital goods and intermediate goods.

Highest share of capital goods sector is visible in case of Singapore with 64% MVA in 1980 increasing sharply from 51.7% in 1973. Countries with over 30% share of capital goods sector are Brazil, Hong Kong, Singapore, Yugoslavia, Mexico and Argentina. Countries contributing in the range of 25% to 30% are Republic of Korea, India and Malaysia. All these countries are relatively broad based and industrially more advanced. On the other hand, in countries like Bangladesh and Pakistan, which have low level of manufacturing and narrow industrial base, share of capital goods does not exceed even 10%. Analysis of the data of sixteen countries indicate that countries with low manufacturing level have predominance of consumer goods industries, while countries with high manufacturing level are countries with bigger share of capital goods and intermediate products. This means that capacity to produce intermediate and capital goods is related to manufacturing level of the country. High share of intermediate goods in many countries is more related to their

Table 6: Structure of industry in terms of consumer, intermediate and capital goods (in %)

Countries	Consumer goods				Intermediate products				Capital goods Consumer durables			
	Value added		Employment		Value added		Employment		Value added		Employment	
	1973	1980	1973	1980	1973	1980	1973	1980	1973	1980	1973	1980
Brazil	34.4	32.4	60	56.6	29.7	36.4	25.7	25.1	32	35.1	30.7	33.3
Hong Kong	60.4	52.7	57.1	55.1	14.8	12.6	15.2	12.7	24.8	34.7	26.8	32.7
Republic of Korea	43.4	41.8	56.5	51.2	36	33.6	22.8	23.1	20.6	25.8	20.7	27.3
India	39.4	37.5	47.8	52.7	34.8	35.0	27.9	25.4	25.2	27.5	24.3	21.9
Singapore	23.3	19.2	32.4	24.4	25	16.5	17	14	51.7	64.3	50.8	61.1
Pakistan	64.8	61.4	-	-	24.6	29.1	-	-	10.6	9.5	-	-
Kenya	46.8	57.6	48.8	50.4	29.6	22.4	18.1	21.4	23.4	20	33.1	28.2
Yugoslavia	35.4	33.8	38.3	37.4	31	28.2	25	24.1	33.6	38	36.7	38.5
Tunisia	48.1	38.9	56.6	52.4	42.8	43.7	31.9	30.4	9.1	17.4	11.5	17.2
Mexico	35.5	29.1	45	46.6	35.4	36.1	25.8	27.8	29.1	34.8	29.2	31.6
Argentina	30.1	27.9	42.3	41.3	22.6	28.1	25.4	28.6	38.7	34.6	32.3	30.1
Malaysia	31	35	40.8	34.3	46.1	38.3	39	33.2	22.9	26.7	20.2	32.5
Colombia	52.5	50.9	55.6	54.3	31.5	10.9	24.8	24.2	16	18.2	19.6	21.5
Thailand	61.5	61.1	-	-	24	18.1	-	-	13.9	20.8	-	-
Philippines	56.9	53.6	57.4	58.5	30.2	28.6	27.1	21.9	13.9	17.8	15.5	19.6
Bangladesh	75.72	70.8	88.65	83.75	22.39	21.49	8.89	9.27	2.29	7.71	2.46	6.08
United States	28.9	28.2	34.3	31.6	25.1	23.7	21.2	21	46	48.1	44.1	47.4

resource base (as in case of Malaysia and Colombia) and in some cases it is related to both resource base and technological capacity of extraction of natural resource and processing (as in case of India, Brazil, Korea & Mexico). Historical analysis will show that state policy has been much favourable to develop capital and intermediate goods sector for long term self sustained growth in these countries.

In the two countries of highest per capita GDP (among the nations under study) Singapore and Hong Kong over the period of 1973-80, there is a high capital goods biased structural change. Tendency or decline of share of consumer goods industry prevails more or less in almost all countries. Simultaneous increase of share of both capital and intermediate goods is observable in case of Brazil, India, Tunisia and Mexico. Increased share of intermediate goods but decreasing share of capital goods is observable in case of Pakistan and Argentina. Increased share of capital goods but decreased share of intermediate goods is observable in case of Hong Kong, Republic of Korea, Singapore, Yugoslavia, Malaysia, Colombia, Thailand, Philippines and Bangladesh.

If we relate level of manufacturing and per capita MVA to industrial structure we shall find the following correlation results.

Here the results indicate the relation of industrial structure with level of per capita manufacturing value added and per capita energy consumption in a definite direction for generalisation. As the results show, there exists high positive correlation of share of capital goods with per capita MVA, level of manufacturing and per capita energy consumption. This signifies that countries with higher share of capital goods in the industrial structure are the countries with higher level of industrial development and at a higher level of development (since GDP per capita and MVA are near to perfect correlation). High manufacturing level is though the result of high level of development of capital goods sector is at the same time strong background for the development of capital goods sector. Thus structural progressiveness in terms of higher share of capital goods is directly related to developmental indicators in both ways as cause as well as effect of development. Share of consumer goods is negatively correlated with per capita manufacturing value added, per capita energy consumption and level of manufacturing. While its negative correlation with the first two is high enough, with the last one it is feeble. This is because with the increase of per capita manufactured income of the people share of consumer goods will tend to decline, but with increasing level of manufacturing its share may not decline at least in a

Table-7 Results of correlation of industrial structure with development indicators

Relationship between	Pearson Bank correlation coefficient 'Y'	Observed 't' value	Theoret- ical 't' value	Comments
1. Share of capital goods and per capita MVA	.816	5.28	2.12	Acceptable
2. Share of consumer goods and per capita MVA	.66	3.29	2.12	"
3. Share of capital and intermediate goods per capita MVA	.704	3.74	2.12	"
4. Share of intermediate goods and per capita MVA	.18	5.52	2.12	Not
5. % MVA to GDP and share of capital goods	.74	4.12	2.12	Acceptable
6. % MVA to GDP and share of intermediate & capital goods	.57	2.58	2.12	"

Table-7 (Continued)

7. % MVA to GDP and share of consumer goods	.378	-1.527	2.12	Not
8. % MVA to GDP and share per capita of intermediate goods	.11	.416	2.12	"
9. Per capita energy consumption and share of capital goods	.745	4.15	2.12	Acceptable
10. Per capita energy consumption and share of capital & intermediate goods	.75	6.5	2.12	"
11. Per capita energy consumption and share of consumer goods	.87	5.86	2.12	"
12. Share of capital goods and contribution of export expansion to industrial growth	R = 39	1.84	2.12	Not

short period of time. The countries with abundant raw material and human resources can accelerate industrial development by producing consumer items with the import base of capital goods. Export industries for new starter may be developed in the line of consumer goods and can accelerate industrial development. Thus while development of capital goods sector is highly correlated with level of manufacturing, latter's relation with development of consumer goods may not show strongly negative correlation always in the context of developing economies. Though correlation of per capita MVA and level of manufacturing with share of capital and intermediate goods is positive, it is much weaker than of relation with capital goods development. This is due to feeble correlation of level of manufacturing and per capita MVA with share of intermediate goods. This is because in many countries, development of intermediate goods is not concomitant with the development of capital goods sector or higher manufacturing level specially where natural resources based intermediate goods sector with the help of imported technology has developed having less mark on per capita MVA.

Another observable fact from the Table 6 is that intermediate products and capital goods industries are more capital intensive and consumer goods industries are more labour intensive having corresponding effect on comparative figures of share of value added and employment in each sector. It should be noted that while in almost all countries, share of employment exceeds share of value added as a result of labour intensiveness in consumer goods industries, case of capital intensiveness in capital goods sector as per general notion may not be established in all cases. For example, in Republic of Korea, while there exists capital intensiveness in intermediate goods sector, production is relatively labour intensive in capital goods sector. In case of intermediate goods sector, capital intensiveness has been found to be the general rule.

Theoretically for all sectors, more labour intensive technologies are desirable at least for certain time to cope with rampant unemployment situation and for effective utilisation and development of human resources from a lower level of economic development. But in practice, in major cases, instead of developing or procuring labour intensive technology, production system has been based on imported capital intensive technology in appropriate to their situation. Huge foreign exchange spent for import of technology increases the cost of capital along with displacement of labour leading to the concurrence of cost push price spiral and unemployment. Thus with increase of productivity, decreases

the labour absorption resulting in excess of share of value added over share of employment. Doubt may be raised on the point of trade off between productivity and employment as the consequence of inappropriateness of technique to factor proportion. In practice, improved technique is usually more capital intensive, more labour displacing and more labour productive and one has to afford it and apply it without adverse effect on the economy.

Problem of trade off between productivity and employment is more acute due to dualistic character of technology in different sectors of industry. Dualistic technological application leads to the conceptual demarcation between traditional and modern industries in the same or in different sectors. Simultaneous existence of too crude traditional technology and overwhelmingly sophisticated technology creates a situation where in the former case, share of employment will be more than share of value added while in the latter, share of value added will be more than share of employment. This is how trade off between productivity and employment emerges in developing countries in the international capitalist framework.

In almost all developing countries under study in consumer goods industries, traditionally low productive but labour intensive techniques are used resulting in high labour absorption but low productivity. In capital goods and intermediate sector, capital intensive and more productive techniques are used resulting in excess of share of value added over share of employment i.e. increase in labour productivity.

There is a general notion that trade off between share of value added and that of employment of different sectors is more pronounced in developed economies than the poor economies. Fact shows otherwise. For example, in Japan, capital goods sector's share of value added is 44.9%, while its share of employment is only 44.6%. In case of USA, the figures in the sector are 48.4% and 47.4% respectively.

In consumer goods sector, share of value added is 28.2% and share of employment is 31.6. Corresponding figures in intermediate goods sector are 23.7% and 21% i.e. there exists low trade off in between value added and employment. To the contrary, in case of low developing country like Bangladesh, share of value added is 21.5% giving only 9.3% employment

in intermediate goods sector while in consumer goods sector, corresponding figures are 71% and 84% i.e. there exists high trade off between productivity and employment. In capital goods sector of Kenya and India, intermediate goods sector of Brazil, Republic of Korea, Mexico, India, Malaysia, Colombia and Philippines there prevails high trade off between value added and employment. On the other hand, in Yugoslavia with highest manufacturing level, trade off between share of value added and employment is minimal in all the sectors signifying that technical levels of different sectors are equally developed and employment is consciously integrated to the techniques used in all sectors. Here growth has been combined with employment expansion through conscious combining of allocation of technical resource with labour resource in different sectors. Thus the problem of trade off does not always arise from technological development. In most cases this problem arises due to inappropriate and dependent technology adoption, unsuitable organisation and unplanned social system.

In so far as structural balance in respect of detailed sectoral proportion is concerned share of machinery and equipment in developing countries is about half the level of developed market economies and centrally planned economies. In developing countries, predominating role in terms of employment goes to food, beverage and tobacco sector followed by textiles, wearing apparel, leather & footwear. This is because these are labour intensive and traditional sectors with low level of technique and labour productivity.

Fact shows that countries with higher per capita MVA have larger share of machinery and equipment and countries with lower per capita MVA have lower share of it in the industrial structure.

In the time frame of 1973-80 share of food, beverage and tobacco has increased in countries like Korea, Pakistan, Kenya, Malaysia and Colombia while substantially decreased in Philippines, Singapore and Brazil. Share of textile sector has substantially declined in Hong Kong, Korea, Pakistan, Tunisia and Colombia as a result of which its traditionally predominating role in the industrial structure has been relegated to the background. In countries like India, Bangladesh, Korea, Hong Kong, Colombia and Thailand, textile sector has still significant importance in spite of its declining tendency. Textile is a labour intensive and assumes vital importance for labour abundant countries. Even developed countries make protective import barriers for their textile sector to cope with unemployment problem. In country like Bangladesh, about 70% of organised labour force is employed in the textile sector. In the sector of

Table 8: Sectoral rankings and structural balance

Countries	Ranks & percentages of 3 major sectors			% of total	3rd	% of total	Total of major 3 sectors (product con- centration)	MVA per capita US dollar
	1st	2nd	% of total					
Brazil	Machine & equipment	Food	33%	11.3%	Chemi- cals	11.6%	56%	403
Hong Kong	Machine	Wearing & foot- wear	34%	26.3%	Textile	14.8%	75%	966
Republic of Korea	Machine	Chemicals	25.3%	20.8%	Textile	15.7%	62%	276
Singapore	Machine & equipment	Chemicals	63.3%	9.2	Paper- printing & publishing	5.9%	78%	1144
India	Machinery & equipment	Textile	27.4%	23.5%	Chemicals	18.5	48%	27

Table-8 (Continued)

Pakistan	Food	39.3%	Chemicals	20.7	Textile	16	75%	40
Kenya	Food	37.9	Machine & equipment	18.8	Chemicals	13.1	70.3%	34
Yugoslavia	Machine & equipment	34	Chemicals		Food	9.2	53%	621
Tunisia	Machine & equipment	15.8	Chemicals	13.7%	Wearing	11.0	40.5%	126
Mexico	Machine	33.5	Chemicals	19.6%	Apparel	10.4	63%	430
Argentina	Machine	33.6%	Chemicals	17.5%	Food	11.3	62%	324
Malaysia	Machine	26%	Food	21.3%	Chemicals	19.5	67%	189
Colombia	Chemicals	19.8	Food	18.4%	Textile	15.6	67%	143
Thailand	Food	20	Machine	20%	Textile	18.3	58	102
Philippines	Food	23.7	Machine	16.4	Textile	11.5	51%	146
Bangladesh	Textile	30.67	Food	25.95	Chemicals	18.02	75	9

Source : UN Handbook of Industrial Statistics, 1984.

leather and footwear sector, Hong Kong experiences, significant contribution followed by Thailand and Tunisia. Share of wood products and furniture sector is great in Malaysia, Philippines and Yugoslavia. In most of the countries, its share declining. Share of paper, printing and publishing sector also experience decline in most of the countries. Share of this sector is significant in Philippines, Mexico, Brazil, Kenya and Colombia. Chemical sector is though important in almost all countries under study, its share to the country's manufacturing value added tends to substantially increase in Korea, India, Pakistan and Bangladesh. Basic metal industries sector plays important role in creating industrial base in Brazil, Argentina, India, Yugoslavia and Mexico. Increasing role to the industrial growth is played by the sector of machinery and equipment whose role is remarkable in all newly industrialising countries. The Pearson rank correlation between per capita MVA and share of machinery & equipment has been found to be $r = 0.847$ with observed 't' value of 6.167 (theoretical value of 't' is 2.12) signifying highly positive correlation between the country's industrial vis-a-vis overall development with this sectoral share in the industry.

If we calculate the level of concentration in manufacturing by aggregating share of manufacturing added of three sectors out of nine sectors we find the results as presented in table 8. As revealed in the table, in most of the countries there exists concentration rather than diversification of sectors in the industrial structure. In major cases, more than half of manufacturing value added is contributed by three major sectors. General notion that structural balance is correlated with per capita MVA did not get substantiated in the case of countries under study.

Countries with less diversification are Hong Kong, Singapore, Pakistan, Kenya, Malaysia and Bangladesh where three sectors together constitute more than seventy per cent of total manufacturing sector. Countries with relatively more diversification are India, Republic of Korea, Tunisia, Yugoslavia and Philippines. Though empirical results of developing countries do not substantiate the correlation between structural balance with industrial development, more diversified industrial structure is definitely stronger, more broad based and self reliant.

Analysis will indicate that countries with predominance of food and textiles are ones with low per capita MVA while ones with predominance of machinery sector are with higher per capita MVA. In most of the countries, four sectors: Machinery and equipment, food, chemicals and textiles play major role in industrial structure.

One thing evident from the table is that small countries experience more structural imbalance relative to that of countries with bigger market size and inward looking strategies. Though factor proportion in the country influences on the structure theoretically, in practice, countries with long term objectives and broad based industrial development gives emphasis on capital goods sector for the development of consumer goods on own technology. And in consequence, in these countries share of predominates with healthy developmental indicators having long term effects of self reliant growth.

(4) TRADE INDICATORS STRUCTURE OF MANUFACTURED EXPORTS AND INDUSTRIAL DEVELOPMENT OF DEVELOPING COUNTRIES.

In this section we shall analyse the trade indicators and structure of manufactured exports and will see their relation with level of manufacturing and industrial development.

A) TRADE INDICATORS AND INDUSTRIAL DEVELOPMENT:

Most important trade indicators are proportion of manufactured exports to total manufacturing output manufactured imports as proportion of available domestic manufacture supply, domestic manufacture as proportion of domestic demand, GDP export ratio and GDP import ratio. Export GDP ratio as revealed in Table 9, has remained very high in Hong Kong, Singapore and Malaysia for 30 years ending 1980. High export GDP ratio is also marked in export emphasising countries like Tunisia, Korea, Indonesia, Thailand, Nigeria and Yugoslavia.

The countries having large domestic market and slow response to export market have low export GDP ratio, as observed in Argentina, Brazil, India, Mexico and Bangladesh. High import to GDP ratio in Hong Kong, Singapore, Korea and Malaysia talks about simultaneity of import liberalisation with export orientation. Same pattern of observation can be made in relation to manufacturing sector i.e., as regards proportion of manufactured exports to output. Manufactured export to output ratio is high in Hong Kong, Singapore, Pakistan, Malaysia, and Thailand, Republic of Korea, Tunisia, Colombia, Kenya and Philippines. On the other hand, countries like Brazil, Mexico and India show very low manufactured export to output ratio signifying emphasis on domestic demand orientation for industrial growth.

Data suggest that manufactured exports constitute a substantial proportion of total exports exceeding 50% in three fourths countries under review. Substantial increase of manufacture as a component of total exports has been experienced during the period by India, Brazil,

Table-9: Indicators of market behaviour of manufacture of developing countries

Names of Countries	Export to 1970 1980		GDP ratio (%) 1950 1960 1970 60 70 80		Import to GDP 1970 1980		ratio (%) 1950 1960 1970 60 70 80		%Mfg exports to MFG output 1970 1980		%Mfg import to total imports 1970 1980		%Mfg export to total exports		%Mfg import to available supply of manufacture 1970 1980	
	1970	1980	1950	1960	1970	1970	1980	1950	1960	1970	1970	1980	1970	1980	1970	1980
Argentina	9.9	6.5	9.3	8.8	8.4	9	—	10.2	8	8.9	—	—	52.3	50.5	—	—
Brazil	6.0	8.2	5.4	6.2	7.6	6.9	9.2	6.2	6.2	9.6	11.4	68.7	54.3	63.3	75.4	8.2
Mexico	7.7	11.9	12.9	9.1	10.1	19.7	25.5	13.8	10.3	11.9	14.8	65.6	42.6	28.1	19.4	12.2
Colombia	14.1	12.4	13.9	12.8	15.1	16.2	16.5	14.3	13.9	15.1	21.5	69.8	75	59.4	70.1	19.6
Hongkong	64.2	60.2	110.7	92.8	10.3	95.7	115.3	104.6	95.4	102.2	398	52	—	95.2	95	31.3
Korea	15.2	37.7	2.8	11.3	33.6	24.4	44	11.8	21.8	38.6	16.4	27.5	70.8	53.7	75.0	25.7
Singapore	146	201.0	163.0	127	167	134	223	117	137	176	69	103	74.4	64	53.7	55.4
India	4.4	6.8	6.6	4.6	6.6	4.5	10.2	8	6.2	7.9	9.1	9.9	54.0	52.0	64	87
Pakistan	7.8	13.5	8.4	8.5	11.1	14.6	26.5	15	14.7	20.8	20.9	61.4	36.0	39	59	27.9
Bangladesh	8.3	8.9	10	9.4	6.6	12.5	22.2	9.3	12.1	17.1	29.4	33.3	26	49.0	57	32.8
Indonesia	12.8	30.5	25	10.9	26.2	15.8	22.0	25	16	22.4	18	29.7	7	78.4	16.6	NA
Malaysia	43.6	58.5	53.3	44.6	51	39.9	54.8	38.3	38.8	47.7	56.7	54.3	68.2	69.0	42.1	45.4
Thailand	16.7	19.3	19.6	18	22	21.5	29.8	19.6	20.6	26.5	18.7	56	83.4	65.6	27.4	42.6
Tunisia	22.4	34.3	—	20.2	24.2	26.4	51.1	—	28.1	40.5	27.9	59.4	59.4	80.7	29.4	33.8
Kenya	28.6	27.7	27.8	30.9	28.9	30.7	33.5	42.7	30	35	29.4	22.7	67.3	60.0	30.6	52
Nigeria	12.4	33.4	4	9.5	8	12.0	31.2	8.2	4.2	16	15	2.8	76.4	47	13.3	0.8
Yugoslavia	17.5	19.4	11.1	18	19.6	23.7	25	14.6	20.3	24.3	14.9	11.5	78.8	54.0	61.6	20.3
Philippines	18.2	20.1	4	5.8	7.2	19.4	24.2	3.7	6.8	7.1	17.2	35	74	53	35	27.2

Source: World Bank - World Tables, 1983

Table-10: Sources of industrial growth in selected developing countries during 1970-80

Countries	Consumer goods			Intermediate goods			Capital goods			All sectors		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Pakistan	87.0	43.0	-30.0	24.0	-141.0	217.0	11.0	-110.0	199	52.0	-110.0	158.0
Brazil	20.4	.5	79.1	5.6	.4	94.0	7.4	13.1	89.5	11.3	88.4	
Hongkong	54.0	-29.6	75.6	22.0	-68.0	146.0	39.4	-22.5	83.1	44.3	92.7	
Korea	27.9	9.1	63.0	13.4	7.0	79.6	22.0	22.0	56.0	210.0	68.2	
Singapore	40.8	16.4	42.8	55.8	4.0	40.2	37.4	17.4	45.2	47.6	42.8	
India	16.1	-2.2	86.1	1.8	-4.3	102.5	7.32	.23	92.45	9.3	94.3	
Philippines	44.3	-88.7	144.4	13.7	30.7	116.95	27.0	-28.0	99.0	30.0	-53.0	
Bangladesh	-	-	-	-	-	-	-	-	-	24.0	-33.0	
Colombia	30.0	4.0	66	19.88	.02	80.10	3.77	6.23	90.0	18.0	81.73	
Malaysia	27.0	26.0	46	26.0	24.0	98.0	27.0	14.0	59.0	30.0	4.0	
Indonesia	14.0	35.0	51	8.0	81.0	11.0	.4	95.8	3.8	7.06	22.6	
Kenya	14.0	17.0	69	20.5	25.7	53.8	.1	83.2	16.7	12.74	22.09	
Tunisia	29.8	3.2	67	31.3	-77.3	146.0	20.0	-281.0	361.0	31.0	-65	
Yugoslavi	7.7	7.9	84.4	3.9	61.5	34.6	12.2	9.8	78.0	8.8	10.4	
Nigeria	.8	-34.8	134	-18	-1.72	101.54	1	20.0	79.9	3.3	-25.13	
Mexico	25.0	-19.0	94	11.0	19.0	108.0	30.0	-63.0	133.0	22.8	39.0	
Thailand	-	-	-	-	-	-	-	-	-	39.0	-14.4	
All countries	26.5	-4.3	77.82	18.5	13.5	73.0	49.0	-63.0	114.0	23.44	-3.62	
(except Bangladesh & Thailand)	-	-	-	-	-	-	-	-	-	-	-	

Source: World bank: World Tables, 1984, UN Industrial Statistics, 1984.

Colombia, Korea, Singapore, Pakistan, Thailand and Kenya. Non manufactured dominates exports in countries like Mexico (80%), Indonesia (83%) and Nigeria (99.2%) which is related to abundance of their natural resources and primary commodities for exports.

In most of the developing countries, manufacture dominates not only in export structure, but also in import structure.

Declining tendency of proportion of manufactured component of imports has been experienced by Brazil, Mexico, Korea, Singapore, Pakistan, Thailand, Nigeria, Yugoslavia and Philippines. During this period, there tends to increase component of manufacture in support in total imports in countries like Pakistan, Bangladesh, Tunisia and Colombia. This is related to the need for rapid development of the country to cope with mass poverty situation and also for creation of employment opportunities of vast human resources.

It is important to note that high import dependence in overall supply of manufacture is concomitant with high proportion of manufactured export output ratio in countries like Hong kong, Singapore, Pakistan, Malaysia, Thailand and Tunisia.

This might be due to the fact that in order to sustain export expansion on policy and domestic demand satisfaction these countries have to encourage import liberalisation. Of course, luxury imports and high cost technology import also contribute substantially to the high ratio of manufacture. Rank correlation coefficient between proportion of manufacture to total exports and level of manufacturing has been .55 and observed 't' value is 2.48 indicating satisfactory acceptability, though not so strong. This might be due to influence of lack of non-manufactured items for export rather than development of manufactures.

SHARE IN MANUFACTURING VALUE ADDED AND MANUFACTURED EXPORTS OF DEVELOPING COUNTRIES.

The countries under study have to their share 81.2% of MVA and of manufactured exports of developing countries and 88.2% of export of manufacture to 20 developed market economies. Interesting fact is that five countries - Brazil, Argentina, Mexico, India and Yugoslavia have 56% MVA of developing countries but their share in manufactured exports of developing countries is only 32% and their share of export of manufacture to 20 developed market economies is mere 28.5%. On the other hand, three major exporters of manufacture Korea, Hong Kong, Singapore have 40.6% in manufactured exports of developing countries, while their share in MVA of developing countries is only 7.5%. Four largest exporters of manufacture- Republic of Korea Hong Kong, Brazil and Singapore together constitute 55% of their manufactured exports of developing countries.

Along with Mexico, India and Yugoslavia their share becomes 71.24% in developing countries. These seven countries have got also major share (as high as 63%) in manufacturing value added of developing countries.

The point to be emphasised here is that share of the bigger countries (in terms of population) has less share in manufacture exports than that in MVA of developing countries. This is because of their domestic market for manufacture is much bigger and has to be satisfied for industrial development. On the other hand, smaller countries with high population density with poor resources have to go for exports for accelerating industrial development vis-a-vis economic development. Thus countries with bigger population like Indonesia, India and Mexico together have 25.6% MVA while their share in manufactured exports of DCs is only 11.9%. On the other hand, two smallest countries (in terms of population)- Hong Kong and Singapore producing only 3.1% share of MVA of developing countries have more than 24% share in total manufactured exports of developing countries.

Most of these countries have good marketing arrangement and trade relation with developed market economies. Most important exporters of manufacture to developed market economies are Republic of Korea (19.9%), Hong Kong (18.6%), Brazil (9.2%), Mexico (9%) and Singapore (6.2%). These five countries taken together account for more than 62.9% of export of manufacture to developed market economies in 1980.

C) STRUCTURE OF MANUFACTURED EXPORTS AND LEVEL OF MANUFACTURING

As revealed in the structure of manufactured exports, predominating exporting sector is food and tobacco followed by textile and clothing, chemical products and machinery and equipment. Rapidly expanding sectors have been by now machinery and chemicals.

Data suggest that traditional consumer goods enjoying comparative advantage are losing importance in manufactured exports and are facing harsher protectionist measures in developed countries while new items of capital goods sectors are gaining ground gradually due to increase of demand within developing economies. This is a progressive trend for development.

This structure of manufactured exports varies from country to country. Out of 17 countries, food and tobacco predominates in 7 countries (Thailand, Nigeria, Malaysia, Colombia, Philippines, Brazil and Argentina), textile and clothing predominates in 5 countries (Pakistan, Hong Kong, Korea, India, Tunisia), chemical sector predominates in three countries (Singapore, Kenya, and Indonesia) and machinery and equipment predominates in two countries (Yugoslavia and Mexico). Export of machinery and equipment constitutes significant portion of manufactured exports in Brazil, Hong Kong, Korea, Singapore, Malaysia, Yugoslavia, Mexico, India and Argentina. Pearson Rank correlation

coefficient between share of export of machinery and equipment in export structure and level of manufacturing is 81.6 with observed 't' value of 5.29 where theoretical 't' value is 2.13. This indicates correlation between level of industrial development and share of machinery export in the export structure of manufacture. Commodity concentration in manufactured export for major three products exceeds .80 in eight countries and more than .75 in fourteen countries out of eighteen countries under study.

This indicates high commodity concentration as the salient feature of manufactured exports. Relatively low commodity concentration ratio is found in Yugoslavia indicating more diversification of exports there. Relatively high concentration ratio is found in less industrialized countries like Kenya and Tunisia. High commodity concentration is also found in newly industrialised countries like Hong Kong and Singapore, signifying their narrow industrial base for diversified exports and fewer items enjoying comparative advantage or manageable for exports. But other newly industrialising countries like Korea, Brazil, Mexico and Yugoslavia are in better position with more diversified exports. Another noticeable fact is that major countries experience declining tendency of commodity concentration ratio indicating gradual broadening of industrial as well as export management base. Pearson Rank correlation of concentration ratio and level of manufacturing is -344 with observed 4.02. This indicates negative correlation of concentration of export items with industrial development. This is normal because we export increasing diversification of manufactured exports with increasing level of industrial development.

5) ROLE OF DIFFERENT TRADE STRATEGIES IN THE INDUSTRIAL GROWTH OF DEVELOPING COUNTRIES

For determining role of different strategies related to trade aspect of industrialisation we have used modified version of Chenery's methodology in the hands of Stephen R. Lewis [2] Data covered the period of 1970-80 for eighteen countries. For the purpose, industrial growth has been ascribed to domestic demand expansion, export expansion and import substitution. Change in domestic output import substitution is the change in domestic output implied by change in the proportion of total supply imported, when total demand is held constant. Change in domestic output ascribed to export expansion has been the change in domestic output by the increase or decrease of proportion of exports to total output when total demand and import are held constant. Change in domestic output ascribed to domestic demand expansion has been the change in domestic output of change in consumption volume keeping import and export constant. Calculation results of such exercise shows that contribution to industrial growth made by export expansion has been 23.4%. Contribution of import substitution is -3.62% and contribution of domestic demand expansion has been 80.18%. These figures signify that the main source of trade related industrial growth is domestic demand expansion supplemented by export expansion. Import substitution though important for newly independent countries in the past is not found to be pursued vigorously in the recent years to accelerate

the developing countries. It might be due to the reason that in many cases import substitution policy pursued once led to the situation, where these countries can pursue production policy for satisfaction of enhanced domestic demand and export expansion without looking for import substitution where comparative cost is relatively higher. Concrete sectorwise, while domestic demand expansion has been the main source in all the sectors, export expansion plays very important role in food, textiles and clothing, paper and printing and machinery sector. Import substitution plays significant role in the sector of chemicals and plastic products. In the machinery sector, export expansion and domestic demand expansion are associated with import liberalisations for rapid growth. If all industrial sectors are categorised into consumer goods, intermediate goods and capital goods, results of calculation will show that export expansion has been more important sources of industrial growth in capital goods sector. In case of intermediate goods sector both export orientation, import substitution and domestic demand expansion have contributed positively to industrial growth. In consumer goods sector, export expansion and domestic demand expansion are the sources of growth. In the capital goods sector import substitution has been found highly negative talking about import liberalisation for capital goods meant for the production of capital goods.

This is natural for developing countries at still lower level of technological development. Again for export oriented capital goods, maintenance of export quality requires better machine and equipment, preferably imported one for considerable period of time. For domestic demand satisfaction also, capital goods sector requires imported technologies at least in the initial stage of development of the sector since developing countries are suffering from technological backwardness more importantly in capital goods sector. Export orientation has a catalytic effect for the development of capital goods sector for enjoying the economies of scale of operation where domestic market size is relatively smaller.

Results of calculation for individual countries show that except Singapore and Indonesia, in all countries, major source of growth has been domestic demand expansion in all sectors. All the three sources of growth have positive contribution in Brazil, Korea, Singapore, Indonesia, Malaysia, Kenya and Yugoslavia. On the other hand, negative figure of contribution of import substitution to industrial growth has been well marked in case of Pakistan, Tunisia, Mexico, Hong Kong, Bangladesh and Nigeria. Though theoretically negative import substitution is consistent with high development levels here negative import substitution is due to import liberalisation for supporting export oriented sector by regular quality input supply to the satisfaction of importers, or for input procurement for import substituting or domestic need oriented industries. Export orientation as a major source of growth has been found only in Singapore. Import substitution has been found as a major source of growth in Indonesia only. Substantial role of export orientation for industrial growth is marked in Hong Kong, Pakistan, Thailand, Tunisia,

Philippines, Malaysia, Republic of Korea and Mexico. On the other hand, in the semi-industrialised countries like Brazil, Yugoslavia and India, there is very minor role of export expansion for industrial development.

In terms of sectoral demarcation into capital goods, intermediate goods and consumers goods, while domestic demand expansion has been the main source of industrial growth in all sectors, in individual countries, sectoral variation is marked in adopting strategy of development. In consumer goods sector, export expansion has been the major source of growth in Pakistan only and plays significant role in its development in Hong Kong, Singapore, Philippines, Colombia, Malaysia, Tunisia and Mexico. Here import substitution as a strategy for development has been well marked in Indonesia and Malaysia. High domestic demand expansion as a source of growth in the sector has been observed in case of Philippines, India, Nigeria and Brazil.

In intermediate goods sector, export expansion has been the major source of growth in Singapore only. Significant role of export expansion in the sector has been found in Tunisia, Malaysia, Hong Kong, Pakistan and Kenya. Import substitution as major source of growth of this sector has been found in Yugoslavia and Indonesia. Significant role of import substitution in growth of this sector is also well marked in Kenya and Korea. Though domestic demand plays major role in industrial growth of almost all countries, export orientation has been the major source in Singapore and import substitution has been the major source in Yugoslavia and Indonesia in intermediate goods sector.

In capital goods sector, import expansion has been major source of growth only in Singapore. Export expansion plays significant role for the growth of this sector in Hong Kong, Singapore and Mexico. Import substitution has been the major source of growth of capital goods in Indonesia and Kenya. Import substitution has been significant source of growth in Republic of Korea, Nigeria, Singapore and Malaysia.

Thus, domestic demand expansion has been the main orientation in most of the countries to accelerate growth rate. This is natural where market is more known and under more control of the manufacturing units in the countries' framework. More important point is that industrial sector grows first of all to serve internal demand of all sectors and population of the countries. It is noticeable that import substitution which has been important industrialisation strategy of newly liberated countries in all sectors, is still pursued in capital goods sector even after many years of independence. At the same time, import liberalisation policy has been found to be pursued on selective basis to encourage export oriented industries and development of import substituting and domestic market industries.

Study results indicate that export expansion has never been the major source of growth except in Singapore and Hong Kong. Export expansion plays just catalytic role where world market is found favourable and internal supporting policy package creates incentive for exportation.

Export expansion as a strategy of industrial development may be alternative to import substitution but not the alternative to domestic demand expansion for all the time or for all the sectors in all the countries.

In fact, all market oriented strategies will sooner or later be essentially supplementary to domestic-demand expansion as a factor of industrial growth. Experiences of developing countries indicate shift of emphasis from import substitution to export orientation in course of development of their industrial base and demand in developed countries for the goods of developing countries. Domestic demand expansion as a contributory to growth is not exclusive of other, rather it can play more significant role with the development of all sectors in the economy applying import substituting as well as export expansive strategies in optimum combination and consideration of effective utilisation of human and material resource of the countries.

6) FACTORS RELATED TO DETERMINING STRATEGIES OF INDUSTRIAL GROWTH

In determining the strategy for industrial growth we shall examine here the market size (in terms of size of GDP & population), level of industrial development, situation of international economic relations of the country, situation of international trade and internal socio-economic structure, nature and macro-policies of the state power and historical traditions of the country.

A) MARKET SIZE

As our study results show, there exists highly negative correlation ($r = -.58$, observed $T = 2.77$, theoretical $t = 2.13$) in between the market size and share of contribution of export expansion to industrial growth. Countries with big market size like India, China, Mexico, Brazil and Indonesia, are less responsive to export orientation in accelerating industrial growth and in main emphatic on import substitution and domestic demand expansion. Countries with small market size like Singapore, Tunisia, Hong Kong and Pakistan show more response to export expansion for better capacity utilisation and accelerating industrial growth. Small countries can start with import substitution but a point will come when there is a limit of market for expansion in the activities where they enjoy comparative advantages. In that situation, successful entrance to export market will mean more effective utilisation of resources and accelerated industrial growth.

B) LEVEL OF INDUSTRIAL DEVELOPMENT

Strategy of accelerating industrial growth is not highly correlated with level of industrial development. This is indicated by the fact that its rank correlation coefficient with per capita MVA and level of manufacturing though positive is not very high and did not attain the level of acceptability at 5% level of significance. Thus it is not possible to tell that the countries with higher industrial development are the countries which have pursued export

Table 11 : Correlation of Contribution of export expansion with different indicators.

Correlation of contribution of export expansion to growth 'r'	observed 't'	Theoretical 't'	Comments
With level of MFG (% MVA to GDP)	.39	1.66	2.16 Not acceptable.
With share of capital goods in industrial structure.	-.265	1.028	2.16 Do
With GDP (Market Size)	-.58	2.77	2.13 Acceptable.
With population	-.29	1.37	2.18 Not acceptable
With per capita MVA	.33	1.36	2.13 Do
With per capita GDP (development)	.15	.59	2.13 Do
With growth of manufacturing.	.37	1.49	2.13 Do

Source: Data of different countries under study.

oriented strategies only. The correlation of contribution of export expansion to growth with share of capital goods in industrial structure has been found negative without attaining level of acceptability of the results. This indicates that the countries having higher share of capital goods in industrial structure instead of being more export oriented for accelerating industrial growth tend to become more import substituting and more domestic demand oriented i.e. inward looking. Thus progressive industrial structure does not encourage export expansion for accelerating growth though ability to export is more there. Results of calculation also show that relation of development of the country with export oriented industrialisation strategy is not significant as very often proclaimed in the World Bank's reports. Very often it is claimed that export expansion and high growth of manufacturing is highly correlated. Our study results of eighteen countries do not substantiate this thesis. There is some relation, but not so strong one and the results could not attain acceptable level and remained inconclusive.

(C) INTERNATIONAL TRADE SITUATION AND ECONOMIC RELATION AND STRATEGY FOR INDUSTRIAL GROWTH

Strategy for industrial growth in most cases is determined by world economic and trade situation and relations. Prevailing world's favourable trade situation has helped the countries pursuing export based strategy in accelerating industrial growth at the rate of 10% and in 8.1% per annum respectively in the sixties and seventies but depression of eighties has lowered it to 6.6% for export manufacturing countries [3;173].

It is not only world trade situation but also the country's linkages with importing countries, ability of marketing arrangements through institution of General Trading Corporation (GTC) and linkages with multinationals that have a marked influence on success of export expansive strategy. Success of Hong Kong, Korea and Singapore remained with successful penetration into international marketing links and good political relations with the advanced market economies at the time of favourable world trade situation and rapid development of economies of major importing countries. It should be noted that though the period of sixties and seventies was the favourable time for pursuance of export orientation, except some countries, others could not succeed to accelerate growth by export expansion.

Thus not only favourable international trade situation, but also favourable economic relations with advanced economics with the background of effective marketing institutional arrangement can create condition for accelerating industrial growth based on export expansion. It is to be noted that many countries have gained by export expansion because of traditional relations with buying countries e.g. Korea with Japan and USA, Hong Kong and Singapore with USA, UK and so on.

(D) INTERNAL SOCIO-ECONOMIC STRUCTURE AND NATURE AS WELL AS MACRO POLICIES OF THE STATE

The countries with the goal of self sustained growth will be more emphatic on import substitution rather than on export orientation on long term basis. Only the countries with neutrality to self reliance can gain out of export orientation since structure can be made flexible without having social reactions at least for short term gains. Again the countries pursuing socialist or non-capitalist development will be more emphatic on import substitution since they will face uncertainty of trade relations with importing market economies.

For planned economic development, uncertainty or fluctuation in international trade situation will have markedly adverse effect and import substitution and domestic demand expansion will tend to induce more growth.

But it does not discard the possibility of selective export expansion in case of certainty of trade relations with a certain countries for durable period of time.

(E) GEO POLITICAL SITUATION

In determining strategies of industrialisation, particular geopolitical situation has got special importance. For example, land blocked country has to make trade with the land blocking nations and will be in a disadvantageous position to expand external trade relations. Development of transport and communication which is very important for international trade is dependent on the nature of geopolitical situation of the country. For example, countries with coastal belt and port facilities are more accessible and in more favourable position for outward trade strategy in accelerating industrial growth. Successful cases of export orientation as often presented for consideration like Hong Kong, Taiwan, Singapore and Korea are undoubtedly the countries enjoying geopolitical advantages in having alliance with western power and in conquering effective trade relations.

Thus trade related industrialisation strategy is related to multifarious internal and international socio-economic forces and relations. Depending on the favourable mix of all the factors, pursuance of a particular strategy brings desirable results. But any how primacy of domestic demand expansion as a source of industrial growth will remain well in the long term development stream.

7) OBSERVATIONS AND CONCLUDING REMARKS.

I. Level of manufacturing is increasing in developing countries over the last thirty years in real terms with marked variations in the rapidity of growth of different countries. There is a strongly positive correlation of industrial development with level of overall economic development of the country and standard of living of its people. With the indicators of industrial level measured by proportion of MVA to GDP, per capita energy consumption and per capita MVA and share of capital goods in the industrial structure we have seen that level of overall economic development follows industrial development. Growth rate of GDP has got relation with growth rate of MVA. Elasticity of growth rate of GDP to that of MVA was on average .71 in 1960-70 and .78 in 1970-80. Level of manufacturing on average was 16.7% in 1950-60, 17% in 1960-70, 19.15% in 1970-80 and 20% in 1984. These average figures over the periods of thirty years indicate the increasing tendency of manufacturing level. But this figure hides the wide variation in levels of manufacturing of different countries ranging from 3.5% to 35.9% in 1950-60, from 6.5% to 31.1% in 1960-70, from 5% to 30% in 1970-80 and from 4% to 36% in 1984.

II. With increasing level of industrial development, there has been higher share of capital goods in the industrial structure of developing countries. In most of the countries under study, share of intermediate and capital goods is more. There exists high positive correlation of share of capital goods with per capita manufactured value added, level of industrial development in terms of MVA to GDP ratio and per capita energy consumption. Structural progressiveness measured in terms of higher share of capital goods is directly related to developmental

indicators in both ways – as cause as well as effect of development. It should however be noted that while development of capital goods sector is highly correlated with manufacturing level, latter's relation with development of consumer goods may not show strongly negative correlation always in the context of developing economies. This is because in the context of market integration of world economy, capital goods may be imported for manufacturing activities.

It is noticeable that intermediate and capital goods industries are more capital intensive relative to consumer goods industries. However, it should be noted that while in almost all countries, labour intensiveness of consumer goods is predominant, case of capital intensiveness in capital goods sector as per general notion may not be established always. Contrary to desirability of labour intensive technologies in labour abundant economies with unemployment problem, in practice, production system is based on capital intensive technology (imported) inappropriate to their situation of labour biased factor proportion.

Again, acuteness of problem of trade off between productivity and employment in developing countries has been due to dualistic character of technology in modern and traditional sectors of industry. It has been found that trade off between employment and productivity is more marked in developing countries than in developed economies, in capitalist developing economies than in planned, non-capitalist (nationalist) and socialist developing economies. Thus the problem of trade off does not arise from technological development, but due to inappropriate and dependent technology adoption and unplanned organisation of production system. There is a high correlation between share of machinery sector with industrial vis-a-vis overall development. Another dimension in industrial structure is concentration and diversification. In the countries under study, high concentration and narrow industrial base is the salient feature. Small countries experience more structural imbalance while countries with long term objectives and goals have more diversified and broader industrial base.

III. Study results show that proportion of manufacture in exports exceeds 50% in three fourths cases and this is on the increase. The correlation of manufacture's share in export with proportion of MVA to GDP is positively high but not so strong due to lack of abundance of natural resource in major countries and protectionist measures against developing countries on raw material and labour intensive goods export from the side of the developed market economies.

In case of bigger countries, share of MVA is greater than its share in manufactured exports because of their bigger internal demand for consideration. Small size of the countries with good marketing arrangement and high trade linkages with developed market economies gives a situation to stress favourably on exports of manufacture.

Traditional manufactured items in the export structure are losing importance in developing countries (under harsher protectionist measures in developed countries) and new items of capital goods sectors are gaining ground gradually due to increase of demand within developing economies as well as outside it when labour cost becomes a big consideration. There is high positive correlation between share of machinery & equipment in export structures and level of industrial development.

There is a high commodity concentration in export structure indicating its narrow base in developing countries. There exists high negative correlation of number of export items with industrial development which is normal since diversification of export structure is concomitant with the level of industrial development.

IV. If we ascribe industrial growth to export expansion, import substitution and domestic demand expansion together and decompose each one's contribution we find that contribution to industrial growth by export expansion is 23.4%, import substitution to the extent of -3.62% and contribution of domestic demand expansion is 80.18%. These results signify that main source of trade related industrial growth is domestic demand expansion supplemented by export expansion. Sector wise, export expansion has been the more important source of industrial growth in the capital goods sector. In this sector, import substitution has been found highly negative. This might be because of import liberalisation for capital goods for industrialisation. Domestic demand expansion has been the main orientation in most of the countries to accelerate growth rate.

Study results indicate that export expansion has never been the major source of growth except in Singapore and Hong Kong. Export expansion plays just a catalytic role when world market is found favourable. But it should not be denied that in between import substitution and export expansion, later has been found more contributory to industrial growth in developing countries in recent times. It should be noted further that domestic demand expansion is not exclusive of other strategies rather can play more effective role by applying import substitution and export expansion in suitable combination. Particular strategy is adopted not so much because of its inherent advantages but because of needs of the situation. Industrialisation strategy is determined greatly by market size. Larger market size will create situation favourable for inward looking strategy while smaller size for export expansive strategy for industrial growth.

Our study results do not confirm the hypothesis of strongly high correlation of contribution of export expansion with level of industrial development. Study results indicate also that the countries having higher share of capital goods in industrial structure tend to become more import substituting and domestic demand oriented rather than being export oriented. The hypothesis that there is a relation between export expansion and high growth of manufacturing as often claimed could not be established on the basis of data of 10 year periods of seventies for 18

countries. Of course it is true that countries with export oriented manufacturing have shown better results. Emphasis on export expansion is dependent on international trade situation in accelerating industrial growth. Related to this, rate of industrial growth in countries following export expansion strategy has been decreasing from 10% in 1960-70 to 8% in 1970-80 to 6.6% in eighties. Again, favourable world trade situation does not guarantee success in exportation for all countries. For successful exports, effective marketing arrangement, close political and economic ties with the governments of importing countries with suitable package of internal macro-economic policies are important. Industrialisation strategy is also dependent on the internal socio-economic structure and nature of goals and objectives of the society. Countries with planned objective of self reliant equitable growth are forced to be inward looking. For planned economic development uncertainty of trade relations is intolerable for growth. Selective export expansion in case of certainty of enduring trade relations is always welcome in that situation for accelerating industrial growth.

Thus industrialisation strategy of developing countries is related to multifarious internal and international socio-economic factors and forces. Depending upon their favourable mix, pursuance of a particular strategy may bring desirable results. But in any case, primacy of domestic demand expansion can't be relegated to the secondary importance in the long term development plan. At the same time opportunities of export expansion should be effectively availed of by trying to make maximum possible retained value added for the country through greater utilisation of labour resources (directly as well as indirectly) and without making any net adverse effect on the domestic industries. It should be noted that whole question around export expansive strategy emanates not from whether one should support it or not as a strategy but from the possibility of desirable exportation under the prevailing world trade environment. In fact, nobody can deny the advantages of international division of labour. But when gains of international division of labour are discriminatingly and inequitably distributed, active participation in it becomes a subject of careful thinking at least for the weaker participants in developing their position. Besides, how is it possible to close eyes before increasingly discriminatory protectionist barriers imposed by importing countries in international trade? Again, pursuance of particular strategy is not enough. A suitable package of policies with their proper implementation regarding price, exchange rate, interest rate, wages, taxes, credit allocation, investment and marketing must support it with suitable institutional arrangement and effective management to ensure success in accelerating industrial growth.

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IMPLICATIONS OF THE ALLOCATION OF INVESTIBLE FUND BETWEEN THE CAPITAL AND THE CONSUMPTION GOOD SECTORS IN BANGLADESH.

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I. INTRODUCTION

The objective of this paper is to deal with the question of allocation of investible funds between the capital and the consumption good sectors of an economy. Too frequently, after the emergence of a country as an independent nation, the consumption good sector gets a preferential treatment though laying greater emphasis on the capital good sector could well prove to be a wiser course of action. We examine this issue using hypothetical but plausible data of the Bangladesh economy.

Our analysis is based on the two-sector model advanced by the Soviet economist G.A. Feldman. Feldman's paper "On the Theory of National Income" was published in 1928 in *Planovoe Khoziaistvo* (The Planned Economy), a journal of the Soviet State Planning Commission [4; 174-99]. It was brought to the notice of the outside world by E.D. Domar in his well-known book *Essays in the Theory of Economic Growth* [3] where he gave an elaborate description of the model. The model has also found its place in modern books on growth models and been the subject of rigorous scrutiny and extension in professional journals [6,2; 465-80]. It is to be noted here that a similar model was independently developed by P.C. Mahalanobis of India [7; 307-12].

II. THE MODEL

The economy is divided into two sectors- the capital good and the consumption good. Following assumptions are made:

- a. production function in both sectors are of the fixed coefficient type;
- b. capital once installed in a sector cannot be shifted;

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c. production of the capital good sector is independent of production of the consumption good sector;

d. there is unlimited supply of labour; and notations used:

m = fraction of total investment allocated to the capital good sector;
 I = annual investment (output of capital good industry). I_1 and I_2 indicate annual rates of net investment allocated to the respective categories, so that $I_1+I_2=I$;

t = time measured in years;

V = capital-output ratio for the whole economy.

V_1 and V_2 indicate the marginal capital-output ratio of the respective categories;

C = annual output of consumer goods;

Y = annual output of the whole economy (national income);

I_0, C_0 , and Y_0 indicate the magnitude of these variables when $t=0$. BY definition of m ,

$$I_1 = mI$$

and since only I_1 increases the capacity of category 1,

$$dI/dt = I_1/V_1 \quad \dots (2)$$

substituting 1 into 2 we obtain

$$dI/dt = mI/V_1 \quad \dots (3)$$

the solution of which is

$$I = I_0 \cdot \exp(m/V_1)t \quad \dots (4)$$

To simplify all derivations, we set $I_0=1$; then

$$I = \exp(m/V_1)t \quad \dots (5)$$

which shows that, total investment will grow at a constant exponential rate of m/V_1 .

Again using the definition of m ,

$$I_2 = (-m)I = (-m) \cdot \exp(m/V_1)t \quad \dots (6)$$

Since I_2 is the only source of increased capacity in category 2,

$$dC/dt = I_2/V_2 = (-m) \exp(m/V_1)t \cdot \exp(m/V_1)t \quad \dots (7)$$

and

$$C = C_0 + ((-m)/(V_1/V_2)) \cdot (\exp(m/V_1)t - 1) \quad \dots (8)$$

$$dy/dt = dC/dt + dI/dt = \exp(m/V_1)t / (V_1 \cdot V_2)$$

$$V_1 - m(V_1 - V_2) \quad \dots (9)$$

$$Y = I + C = Y_0 + ((1-m)/m) \cdot (V_1/V_2) + 1 \cdot (\exp(m/V_1)t - 1) \dots (10)$$

Using equations (3)-(5) and (7)-(10), and assuming that $V_1=V_2=V$, the following expressions are obtained setting $I_0=1$:

$$\frac{dI/dt}{I} = m/V \quad \dots (11)$$

$$\frac{dY/dt}{Y} = \frac{m/V}{(mY_0-1)\exp-(m/V)t+1} = \dots (12)$$

$$\frac{dC/dt}{C} = \frac{m/V}{mC_0/(1-m)-1(\exp-(m/V)t+1)} \dots (13)$$

Given the values of V and m , the growth rate of investment given by equation (11) is immediately determined, so it requires no projection. Equations (12) and (13) are used to project growth rates of Y and C for different allocation of investible funds (m) and a given capital-output ratio (V).

III.RELEVANCE OF THE STUDY

The division of the economy into two sectors may be called into question on both conceptual and empirical grounds, especially when some industries may produce goods which are used by both sectors. To this possible difficulty, Feldman said that the two sectors need not be mutually exclusive physically, but in an accounting sense. From this standpoint, it is not difficult to think of these two sectors separately and deal with them empirically. Besides, presence of the difficulty such as mentioned here are not new in economics. Domar pointed out that Pigou's wage-good industries, Hayek's stages of production, Mark's standard scheme, and Hicks' induced versus autonomous investment models all had such elusive empirical content [3].

The second question may be raised regarding the relevance of the model, which was devised for the Soviet Union in its early stage of economic development, for a country like Bangladesh in its present stage, when Feldman proposed his model, the Soviet Union was trying to transform a peasant economy into an industrial power, had "unlimited supply of labour" and a poorly developed capital good sector. This scenario resembles the one we have in Bangladesh now and hence the Feldman model, we would argue, has undeniable relevance for Bangladesh.

One could also point out that the choice of m , the allocation coefficient, is essentially a matter of economic planning and government decision. Since only a small part of our economy is under public control, the results obtained in this study is only applicable to an insignificant part of our economy. Such an interpretation is not correct since government decision can have, and in our country definitely has, pervasive influence on

economic activity not within direct government control. We can name but a few areas of production under private ownership which the government cannot indirectly control or influence.

iii) THE DATA

For empirical implementation of the model information on Y, C, I , capital-output ratio (V) and proportion of allocation to the capital good industry (m) are needed. For Bangladesh, we take $C=0.88$ and $I=0.12$. These values are reflective of the composition of these two components of national income in Bangladesh at present.

Before deciding on the plausible value of capital-output ratio, two comments are in order. First, capital-output ratio may be higher in developing countries due to the imposed and alien nature of technology. Second, the capital-output ratio may rise over time in a developing country as excess capacity is gradually exhausted. It may then fall as indigenous technology is developed. This, however, is only a possible scenario and the movement of capital-output ratio need not always follow this particular pattern. Besides development of indigenous technology which can lower capital-output ratio is far from having any perceptible impact in Bangladesh. So, it is likely that capital-output ratio has risen since the inception of Bangladesh in 1971. A value of 2.5 was reported by Azhar-ud-Din for 1970 for the then East Pakistan [1]. The value has probably gone up in recent years and should be around 3.5 now. So we shall use the value of 3.5 for our analysis.

The coefficient of allocation, m , is the policy variable in this model. We shall deal with three possible policy options:

- (a) Indifferent austerity and heavy external dependence:
Allocations of 10, 20, and 30 per cent to the capital goods sector ($m=.10, .20, \text{ and } .30$, respectively);
- (b) Mild austerity and semblance of self-reliance:
Allocations of 40, 50, and 60 per cent to the capital goods sector ($m=.40, .50, \text{ and } .60$ respectively);
- (c) Severe austerity and strong commitment for self-reliance:
Allocations of 70, 80, and 90 per cent to the capital goods sector ($m=.70, .80, \text{ and } .90$, respectively).

V. RESULTS OF SIMULATIONS

Table 1 shows the sequence of growth rates of Y and C. For $m=0.1$, there is a very high initial growth rate of 23.19 per cent of C, but this growth rate quickly dissipates to 8.87 per cent within ten years—a slump which continues. The growth rates for $m=0.2$ and $m=0.3$ are similar—the initial high growth rates cannot be sustained and the slump is quick.

Table 2 displays the scenario for mild austerity and some semblance of self reliance. For $m=0.4$, the consumption good sector starts with a growth rate of 18.10 per cent but it falls, now at a slower rate than when m had lower values. For $m=0.5$, the initial growth rate of 15.94 per cent falls, but at a very slow rate. Here the initial growth rate of the consumption good sector can be nearly sustained. This is to be expected since 50 per cent of the investible funds goes to the capital good sector and consumption good sector is backed up by a strong capital good sector. A change of situation for the better appears when m is set equal to 0.6. Now the economy starts with a growth of consumption good sector of 13.50 per cent, a much lower rate than those reported in Table 1, but this growth rate is not only maintained, it increases to 16.21 per cent within 10 years and approaches the upper limit of 17.14 per cent.

In Table 3, we see the result of a policy of severe austerity and strong commitment for self-reliance. For $m=0.7$, the economy starts with a growth rate of the consumption good sector of 10.74 per cent but this quickly rises to 17.5 per cent in ten years, and approaches the ceiling of 20 per cent. When the value of m is raised to 0.8 the initial growth rate is lowered to 7.61, but it quickly rises to 18.19 within ten years and heads towards the upper limit of 22.81 per cent. If m is raised to 0.9—a situation calling for great austerity—the economy starts with a low growth rate of the consumption good sector of 4.05 per cent, but it quadruples to 16.82 per cent in just ten years and moves towards 25.71 per cent—the upper limit.

VI. IMPLICATIONS

There are several implications of the above analysis. These are:

- a. If the capital good industry is overlooked, as is particularly evident in Table 1, the high initial growth rate of the consumption good sector quickly dissipates and this dissipation is irreversible.

- b. A strong commitment for self reliance does call for severe austerity but the period requiring such austerity is quite short. The growth rate of the consumption good sector reaches 80 to 90 per cent of the highest possible rate in ten to fifteen years as is evident from Table-3.
- c. Although we have made projections for seventy years, 90 to 95 per cent change occurs within fifteen to twenty years a meaningful economic time span. The projection is carried to seventy years to obtain the asymmetric value of the highest/lowest rates.

Bangladesh apparently has taken what we have termed above as the policy of indifferent austerity and heavy external dependence. The result is a very slow growth of the capital good sector. The impact of this policy is not difficult to see. The slow growth of the capital good sector has hit hard both the agricultural and the industrial sectors.

The attempt to raise agricultural production through the use of modern varieties of seeds requires extensive irrigation. Various mechanized tubewells are needed. But in Bangladesh the capital good industry needed to produce these irrigation machines hardly exists. The result has been devastating. Many tubewells have gone out of service and cannot be replaced, those which can be repaired cannot always be so done due to the lack of spare parts [5]. So, a poorly developed capital good industry has foiled what could otherwise be a successful green revolution.

The industrial sector is also bedeviled by a poorly developed relevant capital good industry. The little progress

which the industrial sector has made cannot be consolidated and advanced and even sustained in some cases in the absence of a strong capital good industry to back it.

VII. LIMITATIONS OF THIS STUDY

In this paper we have not dealt with the question of the optimum value of the allocation coefficient, m . The question of optimum allocation within this framework has been looked into among others by Bose S and Weitzman [2; 465-80,9].

An empirical investigation of the main thesis of the Feldman model can be undertaken by studying the economic policy of those countries whose

investment strategy resembles Feldman's prescription. This we have not done in this paper, but the countries which could come under such a review are the Soviet Union, India, Taiwan, South Korea and Brazil.

VIII. CONCLUSIONS

This paper is demonstrative and simulative in nature. So its observations should be regarded as essentially qualitative. An array of possibilities has been given and Bangladesh's position evaluated based on its supposed policy which we took to be one of indifferent austerity and heavy external dependence. A continuation of this policy will accentuate such dependence. The exercise contained in our present paper suggests that there is a need for substitution of the present policy by one that lays greater emphasis on the capital good sector.

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TABLE-1: Growth Rates of National Product and Consumption Goods Output in the Feldman Model of Growth at.....

$Y_0 = 1.00$

$C_0 = .88$

$V = 3.50$

(m)	10			20			30		
	Y %	C	Y %	C	Y %	C	Y %	C	
1	22.79	23.19	23.38	21.70	23.98	20.01			
2	19.05	19.32	19.95	18.78	20.89	18.03			
3	16.43	16.62	17.53	16.67	18.69	16.59			
4	14.49	14.64	15.72	15.06	17.03	15.36			
5	13.00	13.11	14.33	13.81	15.76	14.42			
6	11.82	11.91	13.22	12.80	14.74	13.66			
7	10.86	10.93	12.32	11.98	13.92	13.02			
8	10.06	10.13	11.85	11.29	13.24	12.49			
9	9.40	9.45	10.95	10.71	12.67	12.04			
10	8.83	8.87	10.42	10.21	12.19	11.65			
11	8.34	8.38	9.97	9.78	11.78	11.32			
12	7.91	7.94	9.57	9.41	11.43	11.03			
13	7.53	7.56	9.23	9.09	11.13	10.77			
14	7.20	7.23	8.92	8.80	10.86	10.55			
15	6.91	6.93	8.65	8.54	10.63	10.35			
16	6.64	6.66	8.41	8.31	10.42	10.18			
17	6.40	6.42	8.20	8.11	10.24	10.03			
18	6.19	6.20	8.00	7.92	10.08	9.89			
19	5.99	6.01	7.83	7.76	9.94	9.76			
20	5.81	5.82	7.67	7.61	9.81	9.65			

25	5.11	5.12	7.07	7.03	9.34	9.25			
30	4.62	4.63	6.68	6.65	9.06	9.00			
35	4.27	4.28	6.41	6.39	8.88	8.85			
40	4.01	4.01	6.22	6.21	8.77	8.75			
45	3.80	3.81	6.09	6.08	8.70	8.69			
50	3.64	3.65	5.99	5.98	8.65	8.65			
55	3.51	3.52	5.92	5.91	8.63	8.62			
60	3.41	3.41	5.87	5.86	8.61	8.60			
65	3.32	3.33	5.83	5.83	8.59	8.59			
70	3.25	3.25	5.80	5.80	8.59	8.58			

TABLE-2: Growth Rates of National Product and Consumption Goods Output in the Feldman Model of Growth at ..

$Y_0=1.00$

$C_0=.88$

$V=3.50$

(m)	40			50			60		
Year	Y	%	C	Y	%	C	Y	%	C
1	24.59	18.10		25.21	15.94		25.86		13.50
2	21.87	17.03		22.88	15.70		23.94		13.97
3	19.90	16.17		21.19	15.50		22.53		14.39
4	18.43	15.48		19.91	15.32		21.47		14.76
5	17.29	14.91		18.92	15.18		20.65		15.09
6	16.38	14.43		18.13	15.05		20.00		15.38
7	15.65	14.04		17.51	14.95		19.49		15.64
8	15.05	13.70		17.00	14.85		19.08		15.86
9	14.55	13.41		16.58	14.78		18.75		16.05
10	14.13	13.16		16.23	14.71		18.47		16.21
11	13.78	12.95		15.94	14.65		18.25		16.35
12	13.48	12.77		15.70	14.60		18.07		16.47
13	13.22	12.61		15.50	14.56		17.91		16.57
14	13.00	12.47		15.32	14.52		17.79		16.66
15	12.81	12.35		15.18	14.49		17.68		16.78
16	12.65	12.24		15.05	14.46		17.60		16.80
17	12.50	12.15		14.94	14.44		17.52		16.85
18	12.38	12.05		14.85	14.42		17.46		16.90
19	12.27	11.99		14.78	14.40		17.41		16.93
20	12.17	11.93		14.71	14.38		17.37		16.97

25	11.84	11.71		14.49	14.33		17.24		17.07
30	11.66	11.68		14.38	14.31		17.18		17.11
35	11.56	11.52		14.33	14.30		17.60		17.13
40	11.50	11.48		14.31	14.29		17.15		17.14
45	11.47	11.46		14.30	14.29		17.15		17.14
50	11.45	11.44		14.29	14.29		17.14		17.14
55	11.44	11.44		14.29	14.29		17.14		17.14
60	11.44	11.43		14.29	14.29		17.14		17.14
65	11.43	11.43		14.29	14.29		17.14		17.14
70	11.43	11.43		14.29	14.29		17.14		17.14

TABLE-3 : Growth Rates of National Product and Consumption Goods Output in the Feldman Model of Growth at ..

Yo=1.00

Co=.88

V=3.50

(m)	70			80			90		
	Year	Y	% C	Y	% C	Y	% C		
1	26.51	10.74	27.18	7.61	27.87	4.05			
2	25.03	11.72	26.17	8.81	27.35	5.01			
3	23.94	12.67	25.42	10.07	26.96	6.12			
4	23.12	13.58	24.85	11.37	26.67	7.40			
5	22.48	14.41	24.41	12.67	26.45	8.43			
6	21.99	15.18	24.08	13.94	26.28	10.37			
7	21.60	15.88	23.82	15.50	26.15	11.99			
8	21.29	16.49	23.62	16.27	26.05	13.65			
9	21.04	17.03	23.46	17.29	25.97	15.27			
10	20.85	17.50	23.33	18.19	25.91	16.82			
11	20.69	17.91	23.23	18.99	25.87	18.25			
12	20.56	18.26	23.16	19.67	25.83	19.54			
13	20.46	18.55	23.09	20.24	25.81	20.66			
14	20.37	18.80	23.05	20.73	25.78	21.63			
15	20.30	19.00	23.01	21.13	25.77	22.43			
16	20.25	19.18	22.98	21.46	25.76	23.10			
17	20.20	19.32	22.95	21.73	25.75	23.65			
18	20.17	19.44	22.93	21.95	25.74	24.09			
19	20.14	19.54	22.92	22.13	25.73	24.44			
20	20.11	19.62	22.90	22.28	25.73	24.72			
25	20.04	19.86	22.87	22.67	25.72	25.43			
30	20.01	19.95	22.86	22.80	25.72	25.64			
35	20.01	19.98	22.86	22.84	25.71	25.69			
40	20.00	19.99	22.86	22.85	25.71	25.71			
45	20.00	20.00	22.86	22.86	25.71	25.71			
50	20.00	20.00	22.86	22.86	25.71	25.71			
55	20.00	20.00	22.86	22.86	25.71	25.71			
60	20.00	20.00	22.86	22.86	25.71	25.71			
65	20.00	20.00	22.86	22.86	25.71	25.71			
70	20.00	20.00	22.86	22.86	25.71	25.71			

THE ROLE OF PUBLIC POLICY IN THE GROWTH OF THE BANGLADESH HANDLOOM INDUSTRY : 1947 -87

MUHAMMAD ABDUL LATIF*

1.1 INTRODUCTION

The handloom industry of Bangladesh has grown over time during the period 1947-87. This growth process owes to a variety of influences. Such influence as the role of public policy and interventions have been an important factor in effecting the evolution and performance of the handloom industry.

Given the socio-economic importance of the handloom industry to the overall economy, successive governments have traditionally emphasised the need to protect and promote the industry. The perception of the government pertaining to the handloom industry in Bangladesh has been reflected in successive Five Year Plans, followed up by various policy measures. The purpose of the present paper is to attempt an overview of the broad policies designed to help protect the handloom industry and their effectiveness during the period 1947-87. The policies and programmes pursued under institutional framework which, however, have been evaluated to be a complete failure[12] are outside the scope of this paper.

This paper is organised as follows. After a brief introduction in Section 1.1, the trends in growth of the industry in historical perspective are presented in Section 1.2. Section 1.3 measures the growth of the industry in terms of loom capacity and output during the period 1947-87. Section 1.4 assesses the government policies towards protecting the handloom industry against competition from the mill sector and imports during 1947-87. Section 1.5 concludes this paper.

1.2 HISTORICAL PERSPECTIVE

The traditional handloom industry of the area now comprising Bangladesh had attained a high level of prosperity during the Mughal rule in India, owing to royal patronage and a flourishing export trade. But with the fall of Muslim power in India, this industry started to decline. The

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negative attitude of the Imperial Government, the loss of foreign markets, and the introduction of power driven machinery in textile production, all contributed to the momentum of the decline[12].

The British Textile Industry, which spearheaded the Industrial Revolution in England, started producing cloth at much lower cost through the use of steam power. The Lancashire textile products found a ready market in India due to the cost advantage and favourable commercial and industrial policy pursued by the government. This produced a revolutionary change in the direction of the foreign trade of India. Exports from India to England died out and those from England to India made rapid headway [17].

The mill based textile industry began to grow in India since the mid nineteenth century. It remained to a large extent complementary to the handloom industry supplying it yarn rather than competing with it in the production of cloth. This co-existence between technologies persisted until the turn of the present century from which period onwards many Indian mills began to weaving cloth thereby bringing them into direct competition with the handloom industry [12].

The handloom industry was given a temporary stimulus for output growth from the Swadeshi movement started in 1905 which advocated the boycott of Lancashire cotton cloth and the use of indigenous cloth. But a larger share of the gains from this form of politicised import substitution was picked up by the domestic mills, though a part of the import diversion was also captured by the handlooms. Subsequent historical events, particularly the two World Wars which not only cut-off imports of cloth but by stimulating demand for Indian made cloth to meet the needs of the armed forces, also stimulated the growth of mill production [12].

Available statistics on looms and employment suggests that the handloom industry in the then undivided Bengal experienced a continuous decline during the period 1901-41[12]. This was due both to the extinction of hand spinning on the charka, an important feature of the household based handloom industry, and to the increased competition faced by the weavers from the rapidly expanding production within India of mill made cloth. The handloom industry in the area now comprising Bangladesh was upto World War II further exposed to competition from the handloom industry of Madras [12]

1.3 GROWTH OF THE HANDLOOM INDUSTRY DURING 1947-87

After partition of the sub-continent in 1947, the handloom industry of Bangladesh after a temporary set back due to severe yarn crisis and cross-migration of weavers between India and Pakistan as immediate consequences of the partition, quickly returned a phase of renewed growth. This growth was stimulated from the elimination of competition from Indian mill made cloth and the Madras handlooms [12].

The data on the number of installed looms in weaving establishments in Bangladesh is derived from various sources, for certain years between 1946-87. This data is presented in Table 1. The table shows that there was a high annual rate of growth of loomage during 1946-56 (6.4%). The rate declined to a low level during 1956-62 (1.4%), and showed a small increase during 1962-78 (1.6%), and a further increase during 1978-87 (2.3%). There was thus a long term trend towards growth in loom capacity in Bangladesh during the period 1946-87.

Estimated figures on handloom output are available for the period 1955/1956-1986/1987. These estimates are presented in Table 2, and are reproduced graphically in Figure 1. The data shows that despite the wide year to year fluctuations in output, the industry has achieved an overall long term growth during 1955/56-1986/87.

The relative growth of loomage and of output during the period 1955/56-1986/87 has been estimated [13] as follows.

<u>Particulars</u>		<u>Annual compound growth rates (%)</u>
1. Growth in loomage	:all loomage	1.73
2. Growth in output	: cotton cloth	1.91
	: <u>all cloth</u>	<u>2.07</u>

Table -1 Number of Handlooms and their Growth in Bangladesh: 1946-87.

Year	Estimate/Enumeration looms	Number of compound (000's) rates (%)	Annual growth
(1)	(2)	(3)	(4)
1946	Textile Commissioner of India.	134.35	-
1951	Population Census of Pakistan.	183.25	6.41
1956	Textile Commissioner of Pakistan.	250.00	6.41
1962	East Pakistan Small Industries Corporation	271.41	1.38
1978	Chowdhury and Latif	355.66	1.60
1987	Handloom Enterprise Survey, BIDS.	425.31	2.26

Source: Latif, M.A.: Towards An Estimation of Cloth Supply in Bangladesh:1955/56-1986/87,
(Draft Report), BIDS, 1988.

Latif : Handloom Industry

Table-2 Estimated Handloom Output in Bangladesh: 1955/56-1986/87
(output in million yards.)

Year	Cotton	Non-Cotton	Total
(1)	(2)	(3)	(4)
1955/56	305.02	7.58	312.60
1956/57	353.85	8.09	361.94
1957/58	374.23	8.85	383.08
1958/59	357.72	8.35	366.07
1959/60	339.13	7.84	346.97
1960/61	362.48	8.54	371.02
1961/62	418.88	9.25	428.13
1962/63	394.53	7.73	403.26
1963/64	373.13	8.82	381.95
1964/65	393.12	8.91	402.03
1965/66	391.64	9.00	400.64
1966/67	388.38	9.11	397.49
1967/68	375.49	8.54	384.03
1968/69	433.94	9.31	443.25
1969/70	440.52	9.41	449.93
1970/71	370.11	8.07	378.18
1971/72	287.79	9.16	296.95
1972/73	388.83	11.16	400.00
1973/74	403.97	11.33	415.30
1974/75	324.48	9.61	334.09
1975/76	537.05	15.96	553.01
1976/77	472.41	14.07	486.48
1977/78	513.88	15.28	529.16
1978/79	528.80	16.54	545.34
1979/80	521.88	17.22	539.10
1980/81	535.65	19.76	555.41
1981/82	550.57	22.12	572.69
1982/83	563.20	24.97	588.17
1983/84	579.63	31.02	610.65
1984/85	593.49	38.02	631.51
1985/86	607.46	46.06	653.52
1986/87	648.18	57.43	705.61

Source: Latif, M.A.: Towards An Estimation of Cloth Supply in Bangladesh: 1955/56-1986/87, (Draft Report), BIDS, Dhaka, 1988.

The growth of output has thus far exceeded the growth in loom capacity. This is mainly because of technical progress in terms of looms and warp-winding equipment which has to some extent raised loom productivity. Gradual displacement of the traditional throw-shuttle/fly-shuttle pit looms by the more productive Chittaranjan/ semi-automatic loom has taken place during this period (see Appendix Table A.1.). Improved warp-winding devices such as the drum warping system have been introduced in many cases by replacing the traditional peg-warping and stick-warping methods [12].

The relative position of handloom output vis-a-vis other sources of textile production and availability during the period 1955/56-1986/87 will provide further information about the growth of the handloom industry. The relevant data, presented separately for the pre-and post-liberation periods, can be seen in Table 3.

Total domestic production of cloth includes handloom output, mill/factory production, and small powerloom production. The domestic availability of cloth includes domestic production plus net imports (import minus export adjusted for estimated illegal trade in cloth).

Table 3 shows that, overall, the share of handlooms in domestic production/availability of cloth has grown appreciably both in the pre-and post-liberation periods. The table also demonstrates that the share of handlooms in non-cotton cloth production has fallen drastically from the pre-liberation period to the post-liberation period. This has been due to the recent growth of a domestic powerloom industry committed largely to the production of non-cotton (polyester) products. However, the overall share of the handloom sector in domestic textile production has been more or less stable during the period 1955/56-1986/87 (Appendix Table A.2.1.).

Table-3 Share of Handlooms in the Total Domestic Production/ Availability of Cloth in Bangladesh: 1955/56-1986/87

Particulars	% share of handlooms in :	
	Total domestic production	Total domestic availability
(1)	(2)	(3)
I. Pre-liberation period: <u>(1955/56-1970/71)</u>		
1. Cotton Cloth	87	73
2. Non-cotton cloth ⁷⁷	59	
3. All cloth	86	72
II. Post-Liberation period <u>(1972/73-1986/87)</u>		
1. Cotton cloth	87	79
2. Non-cotton cloth ³⁹	37	
3. All cloth	83	75 (67)

Note: Figure in parentheses indicates % share of handlooms in total available cloth, where the total includes second-hand clothing.

Source: Latif, M.A.: Towards an Estimation of Cloth Supply in Bangladesh: 1955/56-1986/87, (Draft Report), BIDIS, 1988.

I.4. PROTECTIVE POLICIES

After the partition of India in 1947, the handloom industry of Bangladesh experienced sharp growth at least during 1949-52.¹ The spurt of growth, as already noted, originated in the elimination of competition from Indian mill-made cloth and Madras handlooms. In subsequent years, however, the growth process tended to slow down, if not be reversed. In the 6-7 years after partition, the large scale cotton mills in Pakistan (particularly in West Pakistan) made rapid strides (see Appendix Table A.3) in a protected market. As was the experience at the turn of the present century in undivided India when the modern textile industry began to develop, the handloom industry in Bangladesh was

1. It may be mentioned that the handloom industry could not grow in terms of output during 1947-48 mainly due to severe yarn crisis [12].

threatened with decline in the face of competition from mill made cloth, especially from the West Pakistan based mills who sought to exploit the large captive market in Bangladesh through free inter-wing trade. External competition remained excluded under a regime of quantitative restriction [12].

Rapid industrialisation was emphasised by the Pakistan Government; the prime objectives being to activate the maximum growth of output and employment in relation to investment [9]. Accordingly, though the development of large-scale manufacturing industry was stressed, the small-scale industrial sector was not neglected. Thus, as a first-hand measure specific to the handloom industry, the government realised the need to protect the industry against mill competition. The devices formulated and implemented for this purpose were fiscal protection and reservation of output for the handloom industry.

1.4.1. FISCAL PROTECTION

In order to protect the handloom industry against low cost competition with the mills, one device is to impose upon the latter's production of output an artificial cost factor to minimise the cost difference. This principle was followed by the Pakistan Government. In the early 1950's an excise tariff on mill cloth was imposed. Table 4 presents the data on the structure of excise taxation on the mill's output of cloth during 1947-87.

The table shows that the duty was sharply increased from 5% ad valorem in 1952/53 to 12.5% ad valorem in 1953/54. After 1956/57, while the duty was moved back and forth between specific and ad valorem, it appears that its level remained about the same or higher throughout the sixties. In addition, an ad valorem 15% sales tax was operative on mill cloth during 1953/54-1966/67. The sales tax, however, was merged with the excise duty in 1967/68, and it remained so through 1969/70.²

Handloom cloth always remained except from both excise duty and sales tax. It may, however be mentioned that yarn was not excisable until 1966/67; but a specific duty of Tk. 0.10-1.50 per lb was imposed in 1966/67 on coarse to superfine varieties of yarn [12]. But this was not supposed to adversely effect the handloom industry insofar as the

2. The merger of excise duty and sales tax since 1967/68 is the main reason why duties, as shown in Table 4, are much higher during 1967/68-1969/70.

competition with mill cloth was concerned, since this tax was equally applicable to the mill's own use of yarn.

Table-4 Excise Taxation on Cloth Output of the Large-Scale Cotton Textile Industry: 1947-87.

Year/period	Superfine	Fine	Medium	Coarse
(1)	(2)	(3)	(4)	(5)
1. Up to 1952/53 (ad valorem %)	5.00	5.00	5.00	5.00
2. 1953/54-1956/57 (ad valorem %)	12.50	12.50	12.50	8.80
3. 1960/61-1962/63 (specific Tk./yard)	0.31	0.31	0.19	0.06
4. 1963/64 (ad valorem %)	15.00	15.00	15.00	10.00
5. 1964/65-1965/66 (specific Tk./yard)	0.40	0.31	0.19	0.06
6. 1966/67 (specific Tk./yard)	0.47	0.28	0.17	0.06
7. 1967/68-1969/70 (specific Tk./yard)	1.00	0.65	0.40	0.15
8. 1972/73-1974/75 (specific Tk./yard)	0.20	nil	nil	nil
9. 1975/76-1982/83 (specific Tk./sq. yard)	0.25	nil	nil	nil
10. 1983/84-1986/87 (specific Tk./sq. metre)	0.35	nil	nil	nil

Source: (1) Latif, M.A: Performance of the Bangladesh Handloom Industry: 1947-80, Ph. D. thesis accepted by Jawaharlal Nehru University, New Delhi, 1985; and (2) Bangladesh Textile Mills Corporation (BTMC) ¹

However, it is of obvious interest to know the extent to which the excise duty and sales tax on mill's and handlooms. Unfortunately, all the data required for such analysis are not available. However, these fiscal measure, along with certain other factors helped the handloom industry survive against mill competition.

Important among the other factors which helped keep the handloom industry competitive were the relatively low costs of reproduction of household labour. The labour welfare legislation, including the minimum wage legislation applicable to the formal industrial sectors but not to the rural sectors such as agriculture and rural informal industrial sectors, emerged as a further competitive constraint on the mill sector. Thus the handloom, being located in rural areas,³ enjoyed the benefits of a cheap labour supply, particularly with respect to household based female and child workers employed in the preparatory processes. These factors contributed to raising the relative costs of wage labour in the mill sector which was not fully compensated by its higher marginal productivity.

Another factor working to advantage of the handloom sector was the persistence of consumer preference in the region of Bangladesh for the principal products of the handloom industry such as sarees and lungis which together accounted for 60-70% of the rural consumption of cloth. In this area, rural consumers revealed a preference for handloom products. This preference even extended to the local consumption of quality products due partly to the handloom method of sizing and finishing being superior to that of the mills. For the mills, therefore, to encroach into those sections of the market hitherto monopolised by handloom products, substantial cost difference would have been in order. The excise duty and sales tax imposed on mill made products and the higher wage costs of producing mill cloth, among other things, did not allow such high cost differences to emerge. Thus the taxation measures helped protect the Bangladesh handloom industry against both the domestic mills and imports from Pakistan (West) during the entire pre-liberation period.

After the liberation of Bangladesh in 1971, the mill's production of superfine varieties of cloth has continued to be excisable, but at much reduced rates, however, all other varieties remain tax exempt. As Table 4 shows, the excise duty on superfine cloth has been Tk. 0.20 - 0.35 per yard/metre. This amount accounts for 1-2% of the cloth price as against 20-25% during the sixties.

Thus it appears at first sight that the competitive position of the handlooms has been undermined by erosion of the fiscal levies imposed on the mill sector. But, in fact, the situation in the post-liberation period has

3. Over 99% of the handloom industrial units are located in rural areas.

been otherwise. After liberation, the competition from Pakistani mills was eliminated by the political separation of the two regions and the resultant elimination of the common market which provided free access of West Pakistani products to the Bangladesh home market. The cotton mills in Bangladesh were nationalised, and the structure of output of yarn and cloth could be controlled by the government, keeping in view the interests of the decentralised handlooms (to be discussed subsequently). However, it was argued that even if there were no such output control policy, the mills under public ownership were not in a position to encroach upon the market for handloom products. Substantial overmanning in the mills and management inefficiency along with other adverse factors considerably reduced the productive efficiency of the nationalised mills. This was likely to reduce the competitive efficiency of the large scale cotton mills versus the handlooms which continued to enjoy the benefits of lower overhead costs and cheap labour. However, about two fifths of the cotton mills have been denationalised since 1980. The performance of the mills after denationalisation did not however significantly improve their competitive efficiency vis-a-vis handlooms [16]. The details of this continued failure to improve their competitive capabilities both in the private and public sectors remain outside the scope of the present exercise.

Notwithstanding the withdrawal of Pakistani mill-made cloth as a source of competition within the Bangladesh market, import of textile products in one form or the other, within and outside the constraints of law, continued constrict to the domestic market for handloom products. This problem persisted even though in the post-liberation period. The Government of Bangladesh (GOB) has since 1973/74 banned the import of the main varieties of cloth likely to compete with handloom products such as cotton sarees and lungis and extended this ban to chaddars since 1983/84.⁴ The other cloth varieties produced in the handloom sector (such as grey sheeting, longcloth, shirting, etc.) though not exposed to such a ban have been subjected to heavy import duties and various forms of quantitative restrictions on imports. Table 5 presents the data on the duty structure on imports during the period 1973/74-1986/87. The table shows that while such cloth has been subjected to high import tariff, the duty on yarn imports have remained at low levels. In addition, a 20% sales

4. It may be mentioned that sarees and lungis were allowed to import during 1971/72-1973/74 to meet the cloth shortage due to fall in domestic production.

tax on import of cloth has been operative throughout the period. All this has protected the handloom industry from imports.

Table-5 Structure of Import Duty on Cloth and Yarn: 1973/74-86/87

Year/period	Duty on Cloth		Duty on Yarn	
	Cotton	Non-Cotton	Cotton	Non-Cotton
(1)	(2)	(3)	(4)	(5)
1. 1973/74-74/75 (ad valorem %)	25-100			nil
2. 1975/76-77/78 (ad valorem %)	25-100	175-225	-	50
3. 1978/79 (ad valorem %)	100	175-225	30-40NL 10XPL	50
4. 1979/80 (ad valorem %)	100-125	225-250	DO	50
5. 1980/81 (ad valorem %)	30-150	225	25-35 NL 25XPL	60 NL 35 WES
6. 1981/82 (ad valorem %)	125	225	DO	60 NL 30 WES
7. 1982/83 (ad valorem %)	73	225	20	50
8. 1983/84 (ad valorem %)	100	200	20	20
9. 1984/85-85/86 (ad valorem %)	150	150	20 +15 RD	10
10. 1986/87 (ad valorem %)	100	100	DO	nil

Notes: (1) '-' means data is not available; (2) NL-import under normal licence; (3) XPL-import under export performance licence; (4) WES-import under wage earner's scheme; and (5) RD-regulatory duty.

Source: Government of Bangladesh: (1) Planning Commission, Fiscal Statistics (1972/73-1986/87), Volume II, (mimeo.), 1986; and (2) Ministry of Finance, The Bangladesh Gazette, Extra-ordinary Dhaka, Various issues.

In spite of the official restraints on competing imports, contraband imports have persisted to erode the monopoly of the domestic market officially extended to handloom producers. A sizeable quantity of fabrics, particularly cotton sarees, estimated to be 8-10% of the total sarees available in the country, have been smuggled into Bangladesh from India after liberation. These cloth varieties compete directly with the domestic handloom industry and at the margin continue to constrain growth of the handloom industry though at a level where the viability of the industry is put into jeopardy. The government, although it is fully apprised of the threat to the industry, has failed to check this contraband trade. Periodic anti-smuggling drives such as the one currently underway have only partially contained this illegal trade. Of course, by this time, the country's handloom industry, with subcontracting arrangements with the Islampur (Dnaka) merchants for cloth finishing and printing, has partially succeeded to produce those varieties of sarees which are being smuggled into Bangladesh from India.

A second threat to the domestic market for handloom products is argued to have come from the import of second-hand clothing. This source of competition has been encroaching into the domestic market since the late sixties. Imports have increased sharply since 1973/74 to the point where second-hand clothing accounted for 10-15% of the total cloth supply in Bangladesh during the period 1975/76 -1986/87. Thus it is often argued that the substitution of cheap second-hand clothing for cotton cloth has been a major threat to handloom [11]. But it has been argued in a study that only a small proportion of this variety of garment imports is handloom competing, while a large part is a substitute for mill-made cloth, hosiery and knitwear.

1.4.2 RESERVATION OF OUTPUT

Another measure of protection to the weavers was to have been provided through the "reservation of output" for the handloom industry. The government set up a Fact Finding Committee on handlooms in 1954, which submitted its report in 1956 [8]. The question of reservation was closely examined by the committee which, taking account of the technology of production of both the sectors and the structure of demand for the products, demarcated certain goods, as shown in Table 6, for exclusive production in the handloom industry, and as a corollary forbidding the mills to produce these "reserved" products [8]. The committee sought the reactions of the mill-owners to this measure. The East Bengal (Bangladesh) Cotton Textile Mill-Owner's Association agreed

to this proposal with some minor changes. But the attitude of the Pakistan Mill-Owners' Association in Karachi was less accommodating. The latter agreed to the reservation of a few varieties of cloth such as bed-sheets, counterpanes, sarees, dhotis, dusters, and turban cloth only on condition that the handloom weavers would manufacture them from coarse yarn i.e. under 17s yarn [8]. But the staple handloom cloth items such as sarees and dhotis were woven from medium to superfine yarns. What all this meant was a complete disagreement of the Pakistan Mill Owner's Association with the reservation policy. The committee then recommended that the reservation should be introduced by government regulation [8].

However, the policy as suggested by the Fact Finding Committee was never implemented through government regulation during the pre-liberation period. Instead, the government opted to use fiscal measures and industrial licensing policy to limit the growth of weaving capacity of the mills as a more feasible vehicle for protecting the handloom industry against competition from the mill industry. Nevertheless, the cotton mills in East Bengal (Bangladesh) volunteered to curb cloth output particularly of the type manufactured by the Bangladesh handloom industry, although not exactly along the lines demarcated by the Fact Finding Committee. Such a programme was agreed upon by handloom operators and mill-owners at a Small Industries Conference held in Dhaka from 14-15 December 1956 [10]. The East Bengal (Bangladesh) mill-owners possibly realised the fact that: (i) the handlooms would in any case be protected by fiscal measures and industrial licensing policy; (ii) the handloom would derive benefits from cheap labour supply and low overhead cost; (iii) the consumers' preference for handloom sarees and lungis would continue; (iv) the mills would not be able to encroach upon the handloom market because, due to factors (i) and (ii) above, their products would not be able to become sufficiently price competitive to compensate for consumer preferences cited in (iii) above; and (v) they would in any case continue to face competition from the rapidly growing cotton mills in Pakistan (West) which had comparative advantage of using locally grown raw cotton. The local mill-owners thus realised that their own comparative advantage lay in exploiting the long-term demand prospects for yarn from the local handloom industry and, therefore, went on expanding the spinning rather than their weaving capacities (see Appendix Table A.4).

Table- 6: Reservation of Output for the Handloom Industry as Recommended by the Fact Finding Committee on Handlooms, 1956.

Cloth	Type
1. Sarees	Striped and checked: All types.
2. Lungis	All types
3. Gamcha	All types
4. Dhotis	With border exceeding 1/4 inch in width. With border containing zari, muga, or art-silk yarn.
5. Gauze, Bandage, and Jaconate cloth	All types
6. Chaddars, bed-sheets, Bed-covers, and counterpanes	All types
7. Tapestry, curtain cloth, upholstery	All types
8. Dusters	All types
9. Coarse cloth of plain weave	Gray cloth for printing of width up to 30" and with ends not exceeding 30 per inch.
10. Towels	Face towels up to 40" in length: All types.
11. Shirting	Striped up to 30 counts, and checked all counts.
12. Phetta, Safa, and Turban cloth	All types
13. Sussi	Coarse and medium counts
14. Muls and Dorias	Manufactured of yarn not above 38 counts up to 44" in width and with ends not exceeding 34 per inch.

Source: Government of Pakistan: Report of the Fact Finding Committee on handlooms, Karachi, 1956.

However, the cotton mills in Bangladesh proper made moderate progress during 1947-70. The production of both yarn and cloth by the domestic mills remained quite insufficient for local consumption needs. On the other hand, the mills made tremendous progress in West Pakistan due to the favourable commercial and industrial policy pursued by the former

Pakistan Central Government [14]. Sizeable quantities of yarn and cloth used to be supplied to Bangladesh from West Pakistani mills through inter-wing free trade. As a consequence, the handloom industry in Bangladesh did grow but at a slower rate than might otherwise have been possible during the period 1955/56-1969/70 (see Figure 1).

Thus, after the liberation of Bangladesh from Pakistan in 1971, when the imports from Pakistan came to a halt the handloom industry of Bangladesh faced a dramatic escalation in their prospective market. This however could not be immediately exploited due to severe constraints in the supply of yarn. Immediate compensatory imports of yarn from outside were not possible due to foreign currency scarcity. The production of yarn by the local mills fell appreciably due to lack of imports of raw cotton. Thus the production of handloom industry also dropped sharply. There was, as a result, a general scarcity of cloth in the domestic market and cloth prices escalated sharply. The handloom weavers, however, gained in terms of elimination of whatever competition from the Pakistani mills, as well as in terms of high profit margins due to the general scarcity of cloth. At that stage many new weavers were being attracted into this profession, while many others started producing such miscellaneous textile products as gray sheeting, longcloth, shirting etc. almost all of which had been earlier supplied by the West Pakistan based mills. The weavers had to import some yarn to compensate for supply side shortfalls but a part of their yarn requirements also came from India through illegal border trade, a trend which still continues.

The yarn crises eventually eased somewhat since 1972/73, due to an increase in imports and output recovery in the local mills. But the handloom industry could not fully realise its production potential mainly due to the inadequacies of the controlled yarn distribution policy introduced by the government after liberation. The output of the handloom industry thus remained at a relatively low level during 1970/71-1974/75 (Figure 1) compared to its capacity. Output increased sharply after 1974/75 due to the withdrawal of yarn control in that year and due to liberal imports of yarn. These were, however, short-term phenomena.

For long-term protection of the handlooms the government of Bangladesh, after liberation, followed a policy which resembles reservation of output and industrial licensing policy in the pre-liberation period. Successive five year plans emphasised the importance of expanding spinning capacity of the mills whilst restricting the growth of weaving capacity so that the mills could remain complementary to the

handloom sector, by supplying them yarn, rather than a source of competition. The First Plan was more positive on this demarcation visualising that at the margin all future demand for cloth would be met exclusively from the handloom sector. The Second Five Year Plan of Bangladesh (1980-85) follows up the theme of the First and clearly states: "Public sector programmes will mainly concentrate on improvement of efficiency of existing mills and on creation of additional capacity for spinning...weaving...will be left to handlooms.... in order to generate more employment and promote rural development". The programmes for the additions to mill's capacity in the successive five year plans have been as follows:

Plan		Spindles (000's)	Looms (000's)
First Plan (1973-78)	Existing:	858	7
	Additions:	275	
Second Plan (1980-85)	Existing:	1030	7
	Additions:	629	
Third Plan (1985-90)	Existing:	1025	6
	Additions:	600	11

Source: The Five Year Plans of Bangladesh.

In the First Five Year Plan period (1973-78), an additional 275 thousand spindles, over the existing 858 thousand (as shown above), were planned to be installed in 13 new mills. However only 62.5 thousand spindles in 3 projects were actually completed by the end of the plan period. The remaining 10 projects were carried over to the interim Two Year (1978-80) plan period [2]. The Second Five Year Plan set an ambitious⁵ target to produce 1200 million yards of cloth, of which 86% was kept reserved for handlooms and 14% for the mills, at the terminal year 1984/85 [2]. For this 629 thousand additional spindles, over the existing 1030 thousand already installed, were planned to be set up in the mills to increase yarn production so as to supply the handlooms with more yarn to meet the Plan's cloth production target. But the goal of installing 629 thousand spindles was not realised. The actual production of cotton

5. "Enthusiastic" because the planned target means a 15% growth of cloth production per annum. The estimated production in 1979/80 was 610 million yards [13].

cloth in 1984/85 was estimated to be of the order of 662 million yards of which 90% was produced by handlooms and 10% by the mills. Thus, although the actual total production of cloth fell short of the planned level by 45%, the relative achievement was better for the handloom sector compared to the mills. It is estimated that, in the year 1984/85, about one-fifth of the yarn consumed by the handlooms was obtained through smuggling from India. In the Third Five Year Plan (1985-90), 600 thousand additional spindles and 11 thousand powerlooms, over the existing 1,025 thousand spindles and 6 thousand powerlooms, were planned to be installed in the private sector industrial units. It had been envisaged in the Third Plan that the additional installed looms would produce cloth largely for import substitution and also exports through forward linkage to the garments industry and as such would not compete with handlooms.

Thus, in the post-liberation period the policy of protecting the handloom sector from the mill competition has been maintained through the policy of reserving the home market for the handloom sector. During this period, 1972/73-1984/85, only around 18% of the total domestic yarn output was converted into cloth output by the mills themselves, which was even less in proportion to what had been diverted in the 1970's [12, 7]. However, the government, in the post-liberation period, has failed to provide an adequate supply of yarn to the handlooms through domestic production so that so that the sector has had to compensate this shortfall through imports and through smuggling from India.

1.5 SUMMARY AND CONCLUSION

The handloom industry of Bangladesh has grown over time since the partition of India in 1947. the annual compound rate of growth in Loomage has been estimated at 2.13% during the period 1946-87. In contrast, the trend rate of growth of output has been estimated at 2.07% per annum during 1955/56-1986/87.

After the partition of India in 1947, the handloom industry of Bangladesh experienced sharp growth at least during 1949-52. The spurt of growth originated in the elimination of competition from Indian mill-made cloth and Madras handlooms.

In subsequent years, however, the growth process tended to slow down, if not reversed. In the 6-7 years after partition, the large scale cotton mills in Pakistan (particularly in West Pakistan) made rapid strides in a

protected market. As a consequence the local handloom industry was threatened to decline in the face of potential competition from mill-made cloth, especially from the West Pakistan based mills who sought to exploit the large captive market in Bangladesh through free inter-wing trade. External competition remained excluded under a regime of quantitative restriction.

Rapid industrialisation was emphasised by the Pakistan Government: the prime objective being to achieve the maximum growth of output and employment in relation to investment. Accordingly, though the development of large-scale manufacturing industry was stressed, the small-scale industrial sector was not neglected. Thus, as a first-hand measure specific to the handloom industry, the government realised the need to protect the industry against mill competition. The devices formulated/implemented for this purpose were fiscal protection and reservation of output for the handloom industry, and industrial licensing policy to restrict the growth of weaving capacity of the mills.

In the early 1950's an excise tariff on mill cloth was imposed. The excise duty was sharply increased from 5% ad valorem in 1952/53 to 12.5% ad valorem in 1953/54, and further to 15% ad valorem in 1963/64. The duty structure remained largely the same as in 1963/64 through 1969/70. In addition, an ad valorem 15% sales tax was operative on the mill cloth. In contrast, the handlooms always remained exempt from these duties and taxes. This fiscal measure, along with certain other factors, helped the handloom industry survive against mill competition.

Important among the other factors which helped keep the handloom industry competitive were the low wage and overhead costs. The labour welfare legislation, including the minimum wage legislation, was applicable to the formal industrial sectors but not to the rural sectors. Thus, the handlooms, being located in rural areas (99% are in rural areas), enjoyed the benefits of a cheap labour supply, particularly with respect to household based female and child workers employed in the preparatory processes. These factors contributed to raising the relative costs of wage labour in the mill sector which was possibly not compensated by its higher marginal productivity.

Another factor working to advantage of the handloom sector was the persistence of consumer's preference in the region of Bangladesh for the principal products of the handloom industry such as sarees and lungis, partly because the handloom method of sizing and finishing being

superior to that of the mills. For the mills, therefore, to encroach into those sections of the market hitherto monopolised by handloom products, substantial cost differentials would have required. The excise duty and sales tax imposed on mill-made products and the higher wage and overhead cost of producing mills cloth, among other things, did not allow such high cost differences to emerge. Thus the taxation measures helped at the margin protect the Bangladesh handloom industry against both the domestic mills and imports from West Pakistan during the entire pre-liberation period.

In the pre-liberation period, another proposed measure of importance to protect the handloom industry, as envisaged in the First Five Year Plan of Pakistan (1955-60), was the "reservation of output" policy, wherein certain constructions and width of cloth were to be kept reserved for the handloom industry alone forbidding the mills to produce them. The Pakistan Mill-Owners Association showed least interest in it, but the East Bengal Mill-Owners Association agreed to this proposal with some minor changes. The fiscal measures, low wage and overhead costs of the handlooms, and consumers' preference for handloom sarees and lungis possibly made the East Bengal (Bangladesh) mill-owners realise the fact that the local handloom industry would survive and there would be a long-term demand prospect for yarn. The local mill-owners also realised that they would, in any case, continue to face competition from the rapidly growing cotton mills in West Pakistan which had comparative advantage of using locally grown raw cotton. Therefore, the local mills went on expanding their spinning rather than weaving capacities and thus became complementary to rather than competitive with handlooms.

However, the cotton mills in Bangladesh proper made moderate progress during 1947-70. The production of both yarn and cloth by the domestic mills remained quite insufficient for local consumption needs. In contrast, the mills made tremendous progress in West Pakistan, and sizable quantities of yarn and cloth used to be supplied to Bangladesh through free inter-wing trade. As a consequence, the handloom industry in Bangladesh did grow but at a slower rate than might otherwise have been possible during the period 1955/56-1969/70.

Thus, after liberation of Bangladesh from Pakistan in 1971, when the imports from Pakistan came to a halt the handloom industry of Bangladesh faced a dramatic escalation in the prospective market. This, nevertheless, could not be exploited due to severe constraints in the supply of yarn. The yarn supply situation, however, improved considerably

after 1974/75, and the handloom industry tended to exploit its production potentials.

In the post-liberation period, the excise duty on mill-made coarse cloth has been successively withdrawn and that on finer cloth has been substantially reduced. But a similar policy to that of "reservation of output" (we may call it "output control" policy) has been followed both in the public and private ownership regimes of the mills. The post-liberation government emphasised the expansion of weaving capacity of the mills under planned development, so that the mills remain to be complementary to rather than be competitive with handlooms.

In the First Five Year Plan period (1973/78), an additional 275 thousand spindles, over the existing 858 thousand were planned to be installed in 13 new mills which, however, was carried over to the Two Year Plan (1978/80) period. The Second Five Year Plan (1980-85) kept 86% of the cloth production reserved for the handloom sector and 14% for the mills. In the Third Five Year Plan (1985-90), 600 thousand additional spindles and 11 thousand powerlooms were planned to be installed in the private sector industrial units. It has been envisaged in the Third Plan that the additional installed looms would produce cloth largely for import substitution and also for exports through forward linkage to the garment industry and as such would not compete with local handlooms.

In order to protect the handloom industry from foreign competition the post-liberation government, has since 1973/74 banned the import of the main varieties of cloth likely to compete with handloom products such as cotton sarees and lungis and extended this ban to chaddars since 1983/84. The other cloth varieties produced in the handloom sector (such as gray sheeting, long cloth shirting etc.) though not exposed to such a ban have been subjected to heavy import duties and sales tax, and various forms of quantitative restrictions on imports.

In spite of the official restraints on competing imports, contraband imports have persisted to erode the monopoly of the domestic market officially extended to handloom producers. A sizable quantity of fabrics, particularly cotton sarees, estimated to be 8-10% of the total sarees available in the country, have been smuggled into Bangladesh from India after liberation. These cloth varieties compete directly with the domestic handloom industry and at the margin continue to constrain growth of the handloom industry.

Another source of competition faced by the handloom industry has been the imported second-hand clothing. However, it appears that only a small proportion of this variety of garment imports is handloom competing, while a large part is a substitute for mill-made cloth, hosiery and knitwear.

However, the protective policies pursued by the successive governments have contributed to survival and growth of the handloom industry, although the industry could not realise its full potentials of growth during the period 1947-87.

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Appendix

A

Table A.1: Distribution of Different Types of Handloom in Some Selected Years, Bangladesh: 1941-87

Year	(Number in 000's)			
	Throw-shuttle loom	Fly-shuttle loom	Chittaranjan loom	All loom
(1)	(2)	(3)	(4)	(5)
1941	27.35 (32.0)	57.27 (67.0)	0.86 (1.0)	85.48 (100.0)
1956	10.72 (4.3)	216.40 (86.8)	22.88 (9.1)	250.00 (100.0)
1978	14.71 (4.1)	214.90 (60.4)	126.05 (34.4)	355.66 (100.0)
1987	14.71 (3.5)	197.94 (46.5)	212.66 (50.0)	425.31 (100.0)

Note: Figures in parentheses are row percentage.

Source: (1) Government of Pakistan: Report of the Fact Finding Committee on Handlooms, Karachi, 1956 (proportions of different types of looms are estimated from this source, and then applied to the figures on looms for 1956 obtained from Textile Commissioner of Pakistan, see Table 1 of this report; (2) Latif, M.A.: Performance of the Bangladesh Handloom Industry: 1947-80, unpublished Ph.D. thesis submitted to Jawaharlal Nehru University, New Delhi, 1985; and (3) Chowdhury N., and M.A. Latif: Towards Understanding the Structural Adjustments within Bangladesh Handloom Industry: 1978-87, (Draft Report), BIDS, Dhaka, 1987.

INDUSTRIAL SUBCONTRACTING IN BANGLADESH

MOMTAZ UDDIN AHMED*

I. INTRODUCTION

Subcontracting is now a common feature of industrial development strategies of the industrialized countries. Even the giant corporations in these countries rely on large number of small enterprises for the manufacture of essential parts and components which they incorporate into their final products. Though Japanese experience is often cited as empirical evidence to substantiate such observation, evidence of wide practice of subcontracting systems in other industrially advanced nations is also available. For example, selected industries in U.K., U.S.A., France and Sweden depend on the small producers to the tune of 40 to 60 per cent for supply of essential parts, components and other vital services [1]. Thus, practice of subcontracting has been a key factor in fostering the growth of modern small industry sectors and in enhancing the pace of overall industrial growth in the developed countries.

The important role played by subcontracting in accelerating the pace of industrial development and in generating substantial employment opportunities via its effects on the promotion of modern small industry sector in many of the newly industrializing countries is also well documented [2]. Among the newly industrialized countries where development of subcontracting has gained considerable momentum in recent years and played crucially important role in the process of industrial development examples of south Korea, India, Argentina, Brazil, Mexico, and the Philippines come to the forefront [2].

The need for promoting growth of subcontracting practices in Bangladesh begs no justification. In a situation where poverty, unemployment and underemployment reign supreme with signs of deepening and escalating further development of a dynamic small industry sector has to be relied upon as an instrument for employment generation and industrial diversification. In that process, development of subcontracting practices can play crucially important role through

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smoothing the path of small industry development and fostering the growth of inter-sectoral linkages.

Indeed, the potentials of subcontracting systems as a means of effecting inter-sectoral transfer of technology and skills, coordination of efforts between different industrial sectors with regard to production and distribution, providing assistance to the growth of small producers and then into closer and creative relationships with the large firms in Bangladesh are also emphatically recognized and a few exploratory studies have also been undertaken recently in order to examine such potentials [3,4,5,6]. The planners also have repeatedly stressed the need for development of inter-industry linkages and expressed considerable interest in the subcontracting systems as a way of fostering close cooperation between the large and the small firms. But no effective programme has yet been designed nor any concrete plan of action formulated and implemented with a view to realizing the potential merits of the subcontracting systems. The only tangible efforts being made so far at the institutional level to develop subcontracting systems in Bangladesh constitute a collaborative project undertaken jointly by the BSCIC and the Agrani Bank during July 1985. Under this agreement arrangements have been made to provide financial and technical assistance to the small firms in the steel and engineering and electrical and electronics subsectors and assist the large contractors within the same sectors in securing cheap, reliable and quality supplies from their small subcontractors.

The implication is that the government efforts towards development of subcontracting practices in Bangladesh have not yet progressed much in the desired direction and remained, by and large, in the status of wishful thinking.

The aim of the present exercise is to examine the nature and extent of subcontracting systems presently being practised in Bangladesh, analyse the characteristics of the participants and the pattern of relationships involved between them, assess the contributions of subcontracting towards promotion of industrial efficiency and indicate the future potentials for development of subcontracting in Bangladesh.

II. AN OPERATIONAL DEFINITION OF SUBCONTRACTING FOR BANGLADESH

The term "subcontracting" lacks a precise as well as an universally acceptable definition. Definitions used are often found to vary depending

on the objectives of the researchers and the policy makers and the stages of development of the countries concerned.

In the developed countries, subcontracting is found to be rather narrowly defined as a contractual agreement between two companies "parent" and "subcontractor", whereby the parent places an order with the subcontractor for the supply of certain materials and finished or semi-finished parts and components of a product to be sold by the parent firm, both being usually involved in manufacturing operations. Subcontracting so defined is known as industrial subcontracting through which the parent enterprise attempts to concentrate its capital investment on the major lines of production to take advantage of the scale economies arising from automation and mechanization, while relying upon the subcontractor for the labour intensive processes. Typically, the contract is based on a longer term, repeating relationship, ranging between one to five years and being frequently renewed over and over again. Further, it is required that the parent firm supplies working capital either in cash or in kind to the subcontractor. Finally, the contract also provides in the form of a formal document a schedule of deliveries, specifications quality standards, terms of payment, and other details. While all these are frequent characteristics of subcontracting systems prevailing in the developed countries, there is no compulsion to incorporate these elements in our definition nor is subcontracting limited only to manufacturing operations.

Subcontracting arrangements may also include processing, transformation or finishing of materials by the subcontractor for the parent, irrespective of whether the materials are provided by the latter or not. It may also include such activities which are classified as services such as repair and transportation of finished products for the parent by the subcontractor. In such cases, the parent firm can either be a wholesaler or retailer on the one hand, or a manufacturer on the other, where the concept of subcontracting has a broader scope and is known as 'commercial subcontracting'.

In a developing country like Bangladesh where manufacturing activities are still confined largely to primary processing of agricultural raw materials and assembling of imported intermediate inputs, a broader definition of subcontracting seems more desirable. Thus, the operational definition of subcontracting adopted for our exercise may include any processing, finishing or assembling of materials and parts, and such service activities as repair, packaging and transportation rendered by the subcontractor to the parent company at the request of the latter, which

manufacturer and/ or a wholesaler or a retailer. Again, while the contracts may usually be for a shorter time period than the case of the developed countries, possibilities for renewal will depend on satisfactory performance of the first contract in terms of acceptable quality and timely delivery.

Before turning to the subcontracting in Bangladesh, a brief discussion on the types of and reasons for subcontracting is warranted for better understanding and analysis of the prospects and problems of subcontracting in Bangladesh.

III. TYPES OF SUBCONTRACTING AND REASONS THEREOF

Depending on the motivations underlying contractual relationships between two firms subcontracting may take several forms of which three are common, such as, economic or cost-saving subcontracting, specialized subcontracting and capacity subcontracting.

"Cost-Saving" subcontracting takes place when the parent firm gets part of processing or finishing work done by an outside firm for achieving saving in costs mostly through taking advantage of the small subcontractor's cheaper factor prices such as low wages, less expensive tools, low overheads, and low administrative costs.

"Specialized subcontracting" occurs when the parent firm contracts out whole or part of a manufacturing operation to an outside supplier either because it lacks the know-how to perform the job on its own or because it lacks the skill and equipment to meet the standard specifications. This type of subcontracting, based on technical linkages and cooperation between the two parties, ensures a steady and long-term contractual relationship and is likely to be less affected by changing economic and market conditions.¹

"Capacity subcontracting" takes place when the parent firm fails to meet temporary excess demands or normal flow of orders either because of rapid expansion of the market or because of unforeseen difficulties (i.e. labour unrest, machine breakdown etc.) which may render the parent

1. The specialization of tasks facilitated and to be performed by the parent and the subcontractor under specialized subcontracting arrangements has multiple dimensions. A discussion with suitable empirical examples is available in [7].

firm's production capacity to prove temporarily insufficient to meet the normal flow of orders. Whatever the reasons, this form of subcontracting is in general most intermittent and offers the small firms the least security with regard to continuation of subcontracting relationships.

Finally, subcontracting in recent years has crossed the national boundaries and turned international. There has been a major push in recent years towards vertical disintegration of complex production systems in international subcontracting, to take advantage of lower labour costs in certain locations, particularly in the developing countries. For example, American firms send goods-in-process to Mexico, Haiti and many other countries to perform particular processes/activities in locations where labour costs are lower; French firms do the same in Morocco and Tunisia, and Japanese firms in the Philippines and Thailand [8,9]. The activities which are sent out in this way are generally those requiring substantial amounts of labour, with moderate skills and relatively simple machinery.

REASONS FOR/BENEFITS OF SUBCONTRACTING

The literature on subcontracting identifies three major reasons why producers may chose to operate in a dis-integrated fashion and engage in subcontracting practices. The three reasons relate to input prices, specialization in supplier firms, and responses to fluctuations in output caused by changes in the market conditions. An analysis of the reasons would indicate that all three of them focus basically on costs and the circumstances under which it may be cheaper to hire an outside producer rather than arranging to have it done within the firm.

Depending on the type of reasons motivating subcontracting relationships between two firms, the parent and the supplier firms derive several benefits from such relationships. We discuss these benefits briefly in turn.

BENEFITS TO THE PARENT FIRMS

In the industrialized countries where specialized subcontracting is quite common, a parent firm carefully analyses costs and capital requirements in arriving at a "make or buy" decision. But subcontracting options, particularly of the specialized type are not as numerous in the developing countries like Bangladesh. Yet significant benefits can be obtained by careful use of the subcontracting systems where scope for practising

subcontracting arrangements exists and can be identified by the parties concerned.

First, the parent company can expand output without making additional capital investments through subcontracting more of the work to a number of small firms. The parent in such cases can allocate its capital resources to those operations that can be carried in-house in the most cost-effective manner.

Second, in order to economise in the use of scarce managerial and technical resources, the parent can concentrate its management skills and technical know-how only on the important operations, take maximum advantage of the scale economies made possible by automation and mechanization, and leave the peripheral jobs to be performed by the relatively more labour-intensive small subcontractors.

The third potential benefit from having particular activities undertaken in separate firms rather than undertaking them in-house concerns the specialization of the small subcontractors in particular lines of production. Greater utilization of machinery and more efficient use of technology from contractor specialization and performing similar tasks repeatedly for a number of customers gives rise to such specialization. Since small-scale enterprises usually develop specialized skills and technologies by concentrating on specialized production, such specialization and skills result in better quality and lower costs. Examples include arrangements by Japanese and/or American automobile manufacturers to purchase a multitude of part from the domestic specialized supplier firms [10].

Fourth, the parent may use its subcontractors as buffer against business fluctuations. In times of recession, for example, large manufacturers may try to reduce personnel, but may have difficulties with labour unions. But such firms, if engaged in subcontracting can cut down its production, reduce costs, and minimize the effects of recession either by not renewing the subcontract agreements or by not placing new order (or even by withdrawing order in extreme situation).

Empirical evidence as to important direct benefits offered by subcontracting to a sample of 90 parent firms across different industries in Bangladesh can be provided through citing examples (Table 1) from a study carried by the BIDS during 1979-80. It is observed from the Table that the majority of the parent firms benefited from using the subcontractors' specialized technology and skills which not only leads to

better quality and lower production costs but also facilitates greater division of labour and tasks in the overall manufacturing operations.

Table - 1 : Distribution of the Parent Firms Deriving Benefits through Subcontracting Practices.

Types of Benefits	No. and % of Responding Parent Firms	
	No.	%
Savings in Capital cost	23	15.23
Savings in labour cost	18	11.92
Utilization of the subcontractors' specialized technology and skills	80	52.38
Use of subcontractors as Buffer against business fluctuations	18	11.82
Avoid problems of labour management	5	3.31
Other benefits	7	4.64
	151	100.0

Note: Number of parent firms exceeds 90 because some of them mentioned to have derived multiple benefits.

Source: Bangladesh Institute of Development Studies (BIDS): Industrial Subcontracting in Bangladesh, Case Study No.7 November, 1981.

BENEFITS TO SUBCONTRACTING FIRMS

The potential benefits derived by the supplying firms (especially small subcontractors) through the practice of subcontracting are also impressive as those derived by the parent firms.

Most small firms suffer from numerous operational constraints which impede their entry into business and act as barriers to their subsequent expansion. Some of these constraints are: (a) shortage of initial as well as working and expansion capital, (b) difficulty in obtaining raw materials, (c) lack of machinery and equipment, (d) marketing impediments, and (e) inadequate volume of work to obtain scale economies and achieve high efficiency of man and machine. It is argued that subcontracting helps diminish all these barriers and achieve greater productive efficiency. The specific benefits gained generally by the small firms through subcontracting practices include the following:

The subcontracting small firms can enter into markets otherwise denied them through producing parts and components for inclusion in the parent company's product. The subcontractor through working independently using its specialized skill and technology and concentrating on a narrow range of products and processes becomes highly specialized and obtains economies of scale.

Besides facilitating entry of small enterprises into an industry subcontracting also lowers the obstacles to their sustained growth through providing them with ensured market for their products. This becomes possible because of the fact that the products produced by the small subcontractors are sold by the parent firms under their brand names through large marketing network.

The parent companies also supply raw materials, working capital, and provide managerial and technical assistance to the subcontractors enabling the latter to avoid production delays, higher prices and improve productive efficiency.

Indeed, empirical evidence provided through the data presented in Table 2 for a sample of 59 firms, based on the earlier quoted BIDS study, reveals that several important direct benefits can be obtained by the small firms working as subcontractors of the parent firms.

Table - 2 : Distribution of the Subcontracting Firms by Type of Benefits Derived through subcontracting.

Type of Benefits	No. and Percentage of Subcontracting Firms	
	No.	%
Increase in productivity	43	30.28
Technological improvement	28	19.72
Product development	18	12.68
Quality improvement	46	32.39
Other benefits	7	4.93
	142	100.00

Note: Total exceeds 59 because of multiple benefits being mentioned to be derived by many subcontractors.

The discussion in the foregoing indicates that both parent and the subcontractors derive important benefits through engaging in subcontracting relationships. While traditional emphasis is on the

reduction of costs as the principal benefit of subcontracting, i.e. it costs less to have outsiders do the particular jobs, firms also do not always have the technical and/or managerial skills as well as finance to do all the work themselves. Hence, either as the parents looking for children or the children looking for parents, contractual relationships permit firms to surpass their own limitations.

Needless to reiterate, the development of subcontracting practices will have significant favourable impact on the overall industrial development of Bangladesh. As noted in the foregoing, subcontracting offers the potentials for promoting economic utilization of scarce capital resources through specialization and creating wide employment opportunities through fostering the growth of small-scale enterprises. This, in turn, will bring benefits to the nation in terms of use of more appropriate factor proportions, reduced concentration of economic activity, improved distribution of income and more effective use and development of dispersed sources of scarce financial and entrepreneurial resources.

IV. SUBCONTRACTING LINKAGES IN SELECTED INDUSTRIES IN BANGLADESH: NATURE, EXTENT AND FEATURES.

The present status of subcontracting activities in Bangladesh and the characteristics of the subcontracting sectors have been analysed by a number of studies quoted earlier. While a careful scrutiny of these studies reveal that the industry sectors providing considerable scope for subcontracting linkages are varied, subcontracting practices are at present relatively more dominant in a selected industry sectors which include steel and engineering, textiles, chemicals and pharmaceuticals and leather and rubber products. [6]. A brief account of the extent and characteristics of subcontracting linkages in selected industries is provided below.

ENGINEERING AND METAL INDUSTRIES.

In the public sector, three major units such as, Bangladesh Machine Tools Factory (BMTF), General Electric Manufacturing (GEMP) and Bangladesh Diesel Plant (BDP) are the dominant engineering complexes which produce machinery and capital goods in the country. Along with product diversification taking place in these units, subcontract work has also been initiated to a moderate extent. Examples include production by BMTF of diesel engine components for BDP and manufacture of supplies and components for other public sector companies. While there is scope

for practicing such subcontracting arrangements by these public sector units among themselves, production facilities in these units, particularly BMTF and GEMP remain grossly underutilized and financial losses are incurred continuously [6]. As a result, the practice of subcontracting has not been very extensive and tended to remain limited for parts and services (that involve auxiliary processes) by the manufacturers. Examples of subcontracting taking place between two public sector enterprises include castings by BMTF and BDP and for Chittagong Steel Mills, the making of dies by Metalex and Mehar for Atlas Bangladesh; supply of ceiling fan parts by BDP for Metalex; production of equipment and spare parts by Ispahani Marshall for tea, jute, textiles and sugar industries, and supply of television cabinet by Mehar for Atlas Bangladesh and so on.

There exists considerable scope for introducing subcontracting practices between a public sector unit and a private sector unit within the steel and engineering industries sector. The engineering industries in Bangladesh operating in the private sector and categorized as metal working industry consist of roughly 3000 small registered and unregistered units and produce machinery/parts, motor vehicle/parts, agricultural machinery/implements, sanitary fittings and pipes and other household items. A significant component of the industry constitutes about 60 spare parts manufacturing units which produce parts and spares for the jute, cotton textiles and sugar mills of the country. The product mix of these units ranges from two to over sixty offering ample scope for subcontracting transactions with the large public sector enterprises. But such transactions are rather uncommon and limited to only selected areas. Examples include the forging of pedal cranks by the Bangladesh Cycle Industry Limited for the BMTF, supply of dies for fan manufacturing by Ahmed Stainless Steel Limited for Mehar, fan body cover by Kazi Traders to Mehar and purchase of spare parts (i.e. bobbin, shuttle, spindle, pinion, reed, picker, bracket, pulley, shafts etc.) from numerous private sector suppliers by the Jute, Textiles and the Sugar Mills.

Subcontracting links between the private sector enterprises in the metals and engineering sector are more common than in the two earlier categories. The supplier in these cases is often a small or a medium sized firm and the buyer is either a large or another small firm. The linkages, based on subcontracting relationship between two small private manufacturers, is found most diverse as well as the most widespread of all in terms of items and processes involved. While the examples are as numerous as the linkages are, Donald Mead reports the important ones

as dies for plastic moulding, drawer and door handles for furniture, parts for hand pumps, castings and machining operations for small engine, lathes and ball presses, bicycle parts, electroplating of sanitary ware items and faucets and valves [4]. In all these cases, practice of subcontracting is quite extensive and of multistrata nature in the sense that several small firms participate in different stages involved in the manufacture of a specific final product. In case of manufacture of hand pumps, for example, one firm does the casting and machining, sending the parts to another firm nearby for boring, and contracting with a third firm to supply more finely machined parts.

While lack of adequate technical expertise, quality control procedures and problem of raw materials availability impede development of subcontracting linkages to a desirable extent in general in the metals and engineering industries, development of such linkages between the small private sector firms and the large public sector manufacturers is hindered by the difficult tendering process. Though many small firms could do subcontract work for the public sector firms, most small firms are reluctant to go through the tendering process which is regarded to be cumbersome, complex and subject to manipulations and discriminations. Further, even after winning the contract and delivery of the product the small supplier is often confronted with the difficulties of delayed payment.

Similarly, though many small and medium sized firms could also contract out certain jobs to the public sector firms, they do so only to a limited extent as they cannot count on prompt delivery and are also unable to make advance payment often to the tune of 50 per cent of the contract price.

GARMENTS MANUFACTURING

Readymade garments are the fastest growing export commodity of Bangladesh. The industry has many unique features uncommon to other industries such as high growth, export-orientation high product diversity, small-scale operation, female dominated employment composition, and almost complete dependence on imported raw-materials.

Donald Mead reports and illustrates wide practice of subcontracting among the garment manufacturers, which arises because of the fact that much of the production in the industry takes place on order either from the merchants (mostly retailers) or from the factories.

Subcontracting in the garments sector is divided broadly into two categories. First and most important, the activity itself is an example of international subcontracting where all production takes place on order, based on imported raw materials, designs, sizes, and packing instructions and so on. While ownership, management and technical supervision is in most cases entirely Bangladeshi with limited foreign participation in selected joint-venture projects, a driving force behind the activity is the foreign buyer who plays a key role in product design and marketing.

The second category of subcontracting linkage takes place when some of the large manufacturers (i.e. Pearsons) receive more orders from the retailers or wholesales than they can supply. They then contract with the other manufacturers to undertake part of this production on their behalf. This second in particular enables the smaller or newer firms to get started in this type of activity before they have developed sufficient buyer contacts to utilize their installed capacity and before they have earned credit-worthiness for financial backing from the banks.

Though some degree of specialization of production takes place through subcontracting linkages within the garment industry, the overall system can be treated as "commercial" or "merchant" subcontracting; the later being especially pronounced in the case of the exported garments where the genesis of subcontracting is often the lower labour costs availed by the local management and combined with product development, design and marketing ensured by the foreign participants.

The Hosiery Industry represents another important dimension of subcontracting linkages with different stages of production being performed by different firms: Knitting by one, washing, calendering and dyeing by another, and cutting and sewing by still another different firm. Existing evidence indicate that there are about 1000 contract knitters in Narayanganj alone producing cloth on order from the parent firms who supply yarn and product specification [4]. Like in the case of the metal working industries, the key determinant of subcontracting linkages in the hosiery industry concerns the benefit of specialization with different firms concentrating their investment and skills in different lines of activities and process constituting the total production process. Individual firms in the industry specialize in particular functions and become able to increase the level of skills in a limited range of activities and also earn higher returns through concentrating their limited management time and skills on the difficult task of coordination of a few production activities.

Significant scope for specialized subcontracting also exists in the textile mills and handloom sector where such divisible operations as washing, calendering, and finishing of cloth and reeling and dyeing of yarn may be contracted out to be undertaken especially by the small enterprises at relatively low capital cost. While limited subcontracting linkages may exist in these fields, studies need to be undertaken to explore the potentials and help formulation of policies to exploit them.

LEATHER SHOES

Subcontracting linkages in the leather shoe sub-sector flow into two main streams:- (i) the Bata system and (ii) the domestic non-Bata system.

Of the total share (16% in 1983) in the domestic market for leather shoes occupied by Bata, more than 20% is produced by the outside suppliers through subcontracting arrangements. The subcontracting practised is specialization oriented, in view of the fact that Bata depends on the subcontractors for the specialized products facing limited markets, in-house production of which would not justify the establishment of regular factory production runs. Subcontracting relationship with the outside suppliers is maintained through formal written contracts specifying product quality, product type and design, and delivery and payment schedules. The parent also supplies the shoes to be copied and provides a minimum amount of technical assistance in order to ensure required quality. Bata is also planning to extend subcontracting practices in other stages of production process like hand-stitching of shoe-tops and machine stitching of canvas sneakers where machine dominated mass production system would have no advantages of large scale economies.

The major complain of the subcontractors is that there are not enough orders from the Bata and that the orders are seasonal, unpredictable and unreliable, leading to capacity underutilization.

While the subcontractors could have avoided the problems by producing for other parent enterprises, shortage of working capital and credit makes it difficult to avail the alternative market opportunities.

The non-Bata stream occupying the remaining 80% of the market share of the shoe industry comprises innumerable individually owned small retail stores, each of which purchases either directly or indirectly through the wholesalers from a vast network of non-mechanized factories

and workshops, the majority of which are typical small units with only a few workers per unit.

Like in the case of the Ready-made Garments, only a few owners of the retail stores also operate small factories, obtain only a small proportion of his small supply from their own factories, and diversify their stocks by buying on a regular subcontract basis from several other factories. Conversely, a small share of the factory output is normally sold through their own retail outlets, with the rest going out through a number of other retail stores which place orders on a subcontract basis with their factories. While this complex network of operations permits some specialization in production and diversity in sales, the overriding constraint involved in the standard practice of sales from the producers to the retailers is on credit and consequent delayed payments.

SUBCONTRACTING LINKS IN OTHER INDUSTRY SECTORS

In addition to the industry sectors described above, subcontracting systems also exist to a moderate extent in other sub-sectors. The Bangladesh Tobacco Company in Chittagong, for example, meets about 60 per cent of its spare parts requirements through subcontract production of such parts by 15 local shops. Within the pharmaceuticals sector, production of containers (i.e. glass bottles, jars, cans, drums etc.) by outside manufacturers through subcontracting arrangements is a common practice. Use of subcontractors for the supply of packing materials like boxes, cartoons and printed labels by the soap, match and paper and paper products industries is also quite common. Though the items produced through subcontracting arrangements in these industries do not form part of the finished products of the parent companies, they are used by the latter in connection with their final products.

While practice of moderate to considerable degree of subcontracting can also be identified in other industry sectors like bicycle and cycle rickshaw, electrical and telecommunication equipment, food processing and automobiles, these industry sectors have been identified by the BSCIC as the industries having significant potentials for subcontracting practices. The significant potentials offered for practice of subcontracting by these industries is demonstrated by the fact that the dominant production processes in these industries are divisible and the final products constitute large number of parts and components. The BSCIC, for example, has identified 46 components within the bicycle and cycle rickshaw industry, 103 within the automobile sector and 130 within the

electrical equipment sub-sector which can be contracted out for production by the subcontractors². Upto September 1987, the BSCIC could identify 139 spare parts across various industries for subcontracting and establish 45 cases of linkages between large and small firms involving subcontracting order from the parent to the supplier to the tune of TK.111.14 lakhs through its subcontracting Exchange Cell established in 1985 under an agreement with the Agrani Bank. A similar agreement has also been signed recently between the BSCIC and the Janata Bank for financing subcontracting programmes under which the BSCIC acts as a mediator between the parent and the subcontracting firms. The BSCIC offers both advice and financial assistance to the subcontracting small firms and helps both the parent and the supplier in identifying each others need and capacity and entering into subcontracting arrangements on that basis.

FEATURES OF SUBCONTRACTING IN BANGLADESH

Based on the discussion in the foregoing sections, subcontracting systems in Bangladesh appear to be characterized by certain distinctive features, of which the following are important:

Like in the American and European countries, subcontracting relationship between the parent and the supplying firms is established through tender floated by the parent firms. As pointed out earlier, the tendering procedures followed particularly by the public sector enterprises are complicated and subject to various manipulations, which make the small suppliers stay away from bidding for orders.

The terms and conditions relating to the contracts signed are found to be both formal and informal. The conditions set by the parents generally include specifications regarding product quality and design and timely delivery of the orders.

The contract is often for a single order and for a short period of time, with the subcontract links being of intermittent nature. The reluctance to enter into long-term agreements on a regular basis seems to result from

2. For details on implementation of subcontracting and linkage establishment programme of the BSCIC, the reader is referred to [II].

fear by both parties with respect to willingness and ability to adhere to the conditions laid down in the contract. This leads to ignoring the fact that cooperation between the parties concerned over an extended period on a continued basis can result in improvements in technology and better quality products at lower costs.

Unlike in the Japanese system where subcontracting often represents a one-way relationship with order for supplies being given by the large parent firms to the small suppliers, subcontracting in Bangladesh is seen to represent a two-way flow. Subcontracting here takes place not only between large firms and small firms but also between firms of varying sizes-large and large, large and small, and small and small.

Compared to the developed countries where most subcontracting is specialization-oriented, subcontracting (practised by the parent firms) in Bangladesh seem by and large to be "cost-saving" and "capacity-oriented" types. It generally reflects the parents concern to avoid performing expensive jobs, take advantage of the suppliers cheaper factor prices and meet temporary upsurge in demand.

So far as the small suppliers are concerned, capital constraints and problems of marketing appear to be the dominant considerations dictating their entry into subcontracting arrangements. While this certainly indicates the dominance of pecuniary considerations in order for gaining access to parent's financial resources as well as marketing outlets, very few seems to demonstrate their awareness towards making proper utilization of their specialized technology and skills.

Finally, many small firms do not seem to be aware of the potential benefits of subcontracting, even if they are engaged in contractual agreements to supply orders for their parents. Similarly, some of the manufacturers who claim to practise subcontracting, actually seem to be involved in simple purchasing of standard parts and components. This and other features enumerated above create several constraints to the development to subcontracting practices in Bangladesh which merit policy attention comprising provision for appropriate promotional incentives and adequate institutional support.

V. PROBLEMS OF SUBCONTRACTING IN BANGLADESH

Problems affecting development of subcontracting practices in Bangladesh may broadly be grouped into two categories: (a) "policy-

induced" and (b) parent-supplier relation oriented. We discuss them briefly in turn.

POLICY- INDUCED PROBLEMS

Of the various policy induced constraints, strong import orientation of the economy is believed to be the most serious impediment to growth and expansion of the subcontracting system. Wide opportunities exist for the use of subcontracting arrangements across various industries especially with regard to procurement of parts and components by large parent enterprises from the domestic manufacturers. The list of industries with subcontracting potentials and that of wide array of components eligible for production under subcontracting, prepared by the BSCIC is highly instructive in this regard. But easy availability of import of such parts and components at subsidized costs dampens the initiative towards desirable use of subcontracting.

Given a choice between importing or procuring on a subcontract basis from a domestic supplier, most large firms would choose the import option since it enables them to earn high premiums through overinvoicing. The issues involved are special access to credit, foreign exchange and licences and quotas which allow both public and private sector large firms to earn high profits through building in-house production facilities.

The incentives to use the services of the subcontractors are further dampened by the prevalence of high rate of capacity under utilization among the parent firms. As the market for the subcontractors depends considerably on the increased demand for their services from the parent firms, the existence of underutilized capacities in the latter is sure to face the suppliers with limited prospects for their expansion. The availability of various types of concessions to large firms create only limited pressures on them to utilize their capacity better, reduce costs and raise profitability. Even when opportunities arise for these enterprises to engage in profitable subcontracting arrangements with the small firms, contraction mechanisms are so cumbersome and reward systems so distorted that these opportunities are seldom pursued with a view to improving on the low rate of capacity utilization and raising productive efficiency.

Conversely, the small firms in the private sector are denied special privileges, particularly concerning their access to credit facilities and imported raw materials. Problems here centre around import licencing procedures and tariff rates. While the small firms can buy materials either

from the commercial importers or can import directly through the Wage Earners Scheme, neither of these options qualifies for tariff concession which are available for the licensed industrial importers. Hence, the small firms suffer badly compared to their large counterparts in terms of paying much higher mark-ups for imported inputs which constrain their growth. The same is also true with regard to access of the newly sanctioned small firms to utilities. There are considerable delays in obtaining supplies of electricity, water and telephones. Though all producers suffer from such delays, the large firms can generally bring more influence to bear and get served relatively quickly. The implication is that easing the access of the small producers to necessary inputs and utilities could be considerable help to the small producers, particularly those engaged in subcontracting.

PARENT-SUPPLIER RELATION ORIENTED PROBLEMS

In both developed and developing countries, the parent firms, while maintaining subcontracting links with the small suppliers, almost invariably face two major problems: (i) unreliable delivery, and (ii) inadequate quality. While all the studies quoted earlier substantiate this observation, the data presented below (Table-3) based on the authors own study [7] reveal the actual state of affairs.

Table-3 Distribution of the Parent Firms Facing Various Problems in Dealing with Subcontractors

Problems Firms	No. & % of Responding Parent	
	No.	%
Suppliers inability to deliver goods in time	61	43.9
Inadequate quality	48	34.5
Bargaining by the subcontractors for better deals	18	12.9
Breach of contracts	4	2.9
Other problems	8	5.8
Total	189*	100.00

Note: Total exceeds 90 because many firms cited multiple problems.

As seen from the table, the subcontractors inability to deliver goods in time topped the list, followed by their failure to maintain required quality of the items and services delivered. The problems created through too much

bargaining for winning better deals was reported to have arisen in those cases where the sub-contractors were the sole suppliers of the item. And whenever such sellers market existed, the subcontractors did not hesitate to breach the contract and sell the item in the open market at a higher price than the contracted price.

The subcontractors' failure to maintain delivery schedule resulted from a complex of factors of which inadequate and irregular supply of power, shortage of raw materials, use of old and obsolete machinery and equipment, shortage of funds, and rush of orders were most important.

Whatever the reasons underlying delayed delivery and inferior quality of the product supplied, both carry real risks for the parent firms. There may be twin solutions to minimise such risks. The first is to develop a close working relationship with the supplier (perhaps assigning one person from the parent firm full-time to work with supplier) to help develop a management system that will ensure timely delivery, maintain quality standards, and overcome the operational bottlenecks as they arise. The second approach may be to purchase from different suppliers and spread the risks in a way that losses arising from problems with one supplier can be compensated through increased purchases from others. In either case the risks may only be moderated but not eliminated. Hence, along with these two measures, a third and more effective option may be to introduce a technical assistance programme with a view to improving technical ability of the small suppliers to produce good quality products. The Bangladesh Employers' Association is at present operating such a programme to raise skill levels in the metal working industries; the result so far is reported to be a mixed one. While the small producers do not seem to have enough interest in drawing benefit from the BEA technical experts, the large firms tend to believe that the small suppliers are not capable of producing the items they might wish to buy.

Turning to the supplier firms, they are seen (Table-4) to confront several problems and risks which render practice of subcontracting further difficult. The table reveals that the most serious problem facing the small suppliers relates to delay in receiving payments from their parent firms.

It is not surprising that the small enterprises generally suffering from severe cash-flow problems would be hard hit by delayed payment. The problem seems to be further intensified by insufficient and sporadic orders placed by the parent firms.

Table - 4 : Distribution Of Subcontractors Facing Various Problems In Dealing With The Parent Firms

Problems	No. & % of the Subcontractors	
	No.	%
Irregular order	7	11.7
Insufficient order	8	13.4
Delayed payment	26	43.3
Arbitrarily withdrawal of orders	3	5.0
Bargaining	11	18.3
Other problems	5	8.3
Total	60	100.00

Source: [7]

Like insufficient order, irregular order causes underloading and overloading of plant capacity and results in serious risks, high costs, and low profits. It was reported by many small suppliers to have so happened at a time when the subcontractors had already done some tooling and retooling at considerable costs and started producing the item.

Further, arbitrary withdrawal of orders by the parent firms was mentioned to be a formidable handicap by many subcontractors. A common grievance in this respect was that their products would sometimes be arbitrarily rejected even though they were of acceptable quality. To the extent that this is true, such problems facing the subcontractors might have their roots in the lack of subcontracting tradition in the country and mutual distrust of the parties towards each other signing the contractual agreements.

The most effective precaution to guard against the risks facing the supplier (i.e. orders not being renewed or being completely withdrawn by the parent) once again, may be to seek contracts with a diverse set of parent firms.

VI. CONCLUSIONS AND RECOMMENDATIONS

The development of industrial subcontracting in Bangladesh appears to be still at its infancy. While the government recognizes the benefits of the subcontracting systems as instruments for accelerating the rate of industrial growth, the potential entrepreneurs, particularly the parent firms, are yet to respond and establish effective procedures for taking advantage of the subcontracting arrangements. Some general policy measures may be adopted to exploit the existing opportunities as well as open up new opportunities for development of subcontracting linkages in Bangladesh. Such policy measures may include the following:

Revision of the existing industrialization and trade policies along appropriate lines is needed to encourage the large industries to increase capacity utilization, reduce imports and raise overall productive efficiency. In view of the substantial underutilized production facilities in many firms strong steps need to be taken to prevent building or addition of new capacities in the relevant areas. The argument is that those who need certain products, parts and spares, and services for which there already exists domestic production capacity should be forced to make use of the existing capacities rather than being allowed to import or create new capacities.

A general policy approach may be adopted to designate certain product lines as being ones where subcontracting seems especially desirable and fruitful. Once this has been done, efforts, to promote subcontracting practices may then be undertaken through collection of lists of potential buyers and sellers, through technical financial and managerial assistance being provided to the suppliers to help them meet buyers requirements and through designing the subcontract linkages in a way as to minimize the risks involved for the buyers as well as the suppliers. The BSCIC has made a modest beginning towards dispensing these services in selected lines of industries through establishing subcontracting exchange cell at its headquarter. However, the delivery mechanism is still centralized and yet to cover adequate ground.

Turning to the development of potential small subcontractors, proposed policy package may relate to removing operational constraints and providing an atmosphere conducive to the growth and expansion of small enterprises. Once a sizeable industry sector has developed, the subsequent set of assistance in to be provided may include assistance

product development and design, production control, technological upgradation and training facilities, particularly in the area of management skills.

On the institutional front, the subcontracting exchange set up by the BSCIC has to be strengthened and properly equipped to be able to handle the functions of an efficient intermediary between the parent and the supplying firms. In a newly industrializing country like Bangladesh, an efficient subcontracting exchange may play the key role in popularizing the use of subcontracting systems through bridging the information gap between the potential parent and the subcontractor and helping the parties concerned to come into contact with each other and utilize their respective expertise, skills and services.

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READYMADE GARMENTS INDUSTRY IN BANGLADESH

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INTRODUCTION

Agriculture is the mainstay of Bangladesh economy. It accounts for at least 50 per cent of GDP and employs over 75 per cent of labour. For the foreseeable future agriculture will remain the most important source of employment and productivity in agriculture will be the dominating factor in determining the rate and pattern of growth in Bangladesh. In contrast, industry account for about 10% of GDP. The growth in the Industrial Sector in early eighties have been noticable; even though it has been fully realised that industry must be promoted vigorously and efficiently.

The constraints for an industrial growth are many; the most important is the limited domestic market due to low per capita income. Again only a part of the domestic market could be efficiently served by domestic industries, even those industries which can operate under comparative advantage based on raw materials, intermediate products or spares and consumables.

These features of Bangladesh economy suggests that a possible strategy for sustained expansion of industrial output is to promote export oriented industries and to gain increased access to export markets. In this context growth of readymade garments industry in Bangladesh was considered a welcome development.

DEVELOPMENT OF READY-MADE GARMENTS INDUSTRY

The redaymade garments industry in Bangladesh is of recent origin. Custom made garments are the norm for most of the domestic market, part of which are supplied from within the home production system. However, the first readymade garments factory was established in Dhaka in 1960; a second was established in 1962; a third and a fourth in 1967 and 1968. At the time of Liberation of Bangladesh there were five units for manufacture of readymade garments for domestic markets. The Liberation of Bangladesh disrupted the industries marginally. These units continued to serve the domestic market.

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But in 1976 Bangladesh made entry into the export market with a small consignment prepared by the existing unit. This established a contact and an opening. The number of units continued to grow. By the year 1983 the number of garments manufacturing units rose to 60 and in the same year some 200 entrepreneurs came up with fresh proposals for obtaining permission to set up such industry. By 1984 the number further rose to 250 and another 250 units were reportedly at various stages of implementation. However, in 1985, due to US policy, there seem to have come an abrupt halt to this honeymoon in garments industry.

CHARACTERISTICS OF THE READYMADE GARMENTS INDUSTRY

The garments industry in Bangladesh demonstrate following characteristics.

Location: The garments industry in Bangladesh are highly concentrated; they are located in Dhaka and Chittagong. One does not have to search much to find the reasons. First, these two cities are well-connected by facilities for transportation of raw materials or finished products by air, road, rail or sea. Because of that, they provide good opportunities for buyers to come and visit these firms. International telecommunication links work well for these two cities. Second, these two cities are served well by banks and government regulatory offices. This allows the bonded warehouse facilities to work smoothly in these two locations. Third, power supply is more reliable in these two locations; and supply of labour more dependent. Fourth, because of construction boom, buildings on rentals are available in these two cities and many of the garments industries are located in the residential areas of these towns.

Size: The units vary in sizes. According to the information available the size distribution of readymade garments industry in Bangladesh is as given in Table 1.

Table 1: Size Distribution of Readymade Garments Industry

Size in '000 pieces	1000+	500+	250+	100+	Less than 100
Percentage	12.7	41.6	26.7	15.9	3.1

Composition of output: These units primarily produce standard apparel i.e., men's and boys' shirts, jeans and pants, women's blouses and skirts

and plain dresses such as nurses' uniforms. Fashion items are seldom produced. Table 2 shows it clearly.

Table 2: Distribution by Output

Output Character-istics	Basic Wears	Heavy Wears	Sports Wear	Fashion Wear	Knit Wear	Leather Wear	Others
Per cent	57.4	26.7	5.3	5.3	3.6	-	1.7

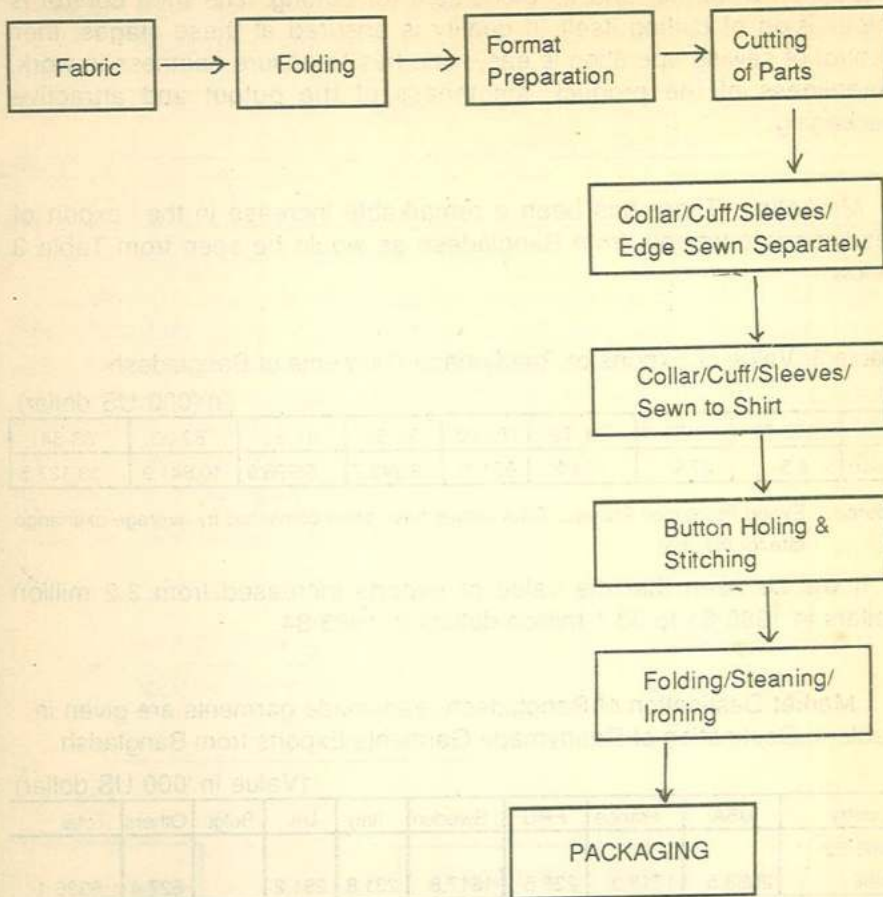
Notes: Basic Wears: Men's, Women's and Children's Shirt, Blouses, etc. Heavy Wears: Pants, Jackets, etc.

Ownership Structure: All of the small units, producing less than 500,000 pieces annually are private limited companies and owned by new local entrepreneurs. Besides there are about a fifteen joint venture companies which produce more than 1000,000 pieces per shift per year. The joint venture capital has mostly come from South Korea, though there are a few with US, Singapore and Indian investment. It is also reported that in the export processing zone some fully foreign owned companies are coming into operation.

Technology: Technology in a readymade garments manufacturing unit is simple and labour intensive. The investment per worker is low. The amount varies, however, for various reason. One is the cost of machinery which depends on sources of supply and terms of payment. Further it is contingent on whether the premises are built up or rented. Again some of the operations may be performed manually (e.g. packaging) rather than with machine. The cost per worker is estimated to be between US dollar 500 to 1000 only. In Bangladesh most of the machinery are manufactured by Brother or Juki.

Process: The process is the same for making 1 million pieces as it is for one piece. The mass production process merely arranges steps in a manner so that division of labour is optimised. The mass production efficiency is attained through use of power so as to be able to handle a large number of pieces of one item at one go.

Chart I: Process of Garments Making



Making the format (pattern/design) is the most critical phase of the entire process. This is often supplied by the buyer. A cloth cutting electric saw is used to cut the pile of layers of fabric into various pieces as per format. These are stacked along the production line separately and sewn. The sewing operation goes on simultaneously and completed as per design.

Quality Control: Quality control is important for export marketing. Hence quality control at each stage is necessary to ensure production as per standard and reduction of wastage. This means the layout of the plant has to be very orderly and production control has to be well managed. First

control is examination of fabric for fault and defects. Second control is inspection of format and its placement for cutting. The third control is supervision of cutting itself. If quality is ensured at these stages, then control of sewing operation is easy; one has to ensure neatness in work, cleanliness of the product, smoothness of the output and attractive packaging.

Marketing: There has been a remarkable increase in the export of readymade garments from Bangladesh as would be seen from Table 3 below:

Table 3: Value of Exports of Readymade Garments of Bangladesh
(in '000 US dollar)

Year	1976-77	'77-78	'78-'79	'79-80	80-81	'81-82	'82-83	'83-84
Value	6.5	67.9	104.2	651.1	3,242.7	6,996.9	10,841.9	33,137.5

Source: Export Promotion Bureau. Taka values have been converted by average exchange rate for the year.

It will be seen that the value of exports increased from 3.2 million dollars in 1980-81 to 33.1 million dollars in 1983-84.

Market Destination of Bangladesh readymade garments are given in Table 4: Destination of Readymade Garments Exports from Bangladesh.

(Value in '000 US dollar)

Country	USA	France	FRG	Sweden	Italy	UK	Belgi.	Others	Total
1981-82 value	2083.5	1718.3	226.5	1817.8	231.8	281.2	-	627.4	6986.1
Percentage	29.8	24.6	3.2	26.0	3.3	4.0	-	9.0	
1982-83 Value	4662.3	2360.5	927.7	714.0	674.9	564.3	478.5	458.6	10841.9
Percentage	43.0	21.8	8.5	6.6	6.2	5.2	4.4	4.2	

Source: Export Promotion Bureau

Predominance of USA and EEC countries is easily discernible for obvious reasons. A study indicates the ratio of imported garments to consumer demand for certain selected countries. However Bangladesh has not been an important source of supply to these markets.

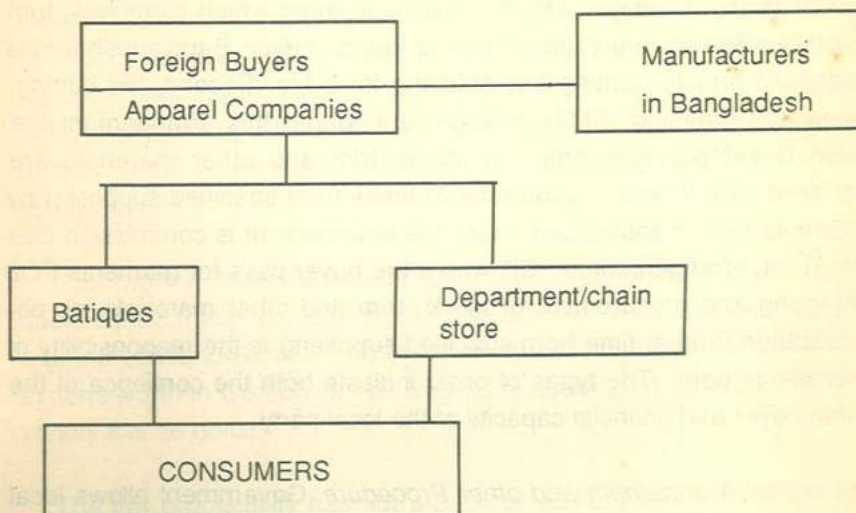
Table 5: Ratio of Imports of Demand for Readymade Garments in Selected Countries

Countries	Czeck	Middle-East	USA	EEC Countries	Scandinavian Countries	UK
Ratio	80	70	65	60	55	50

Source: International Trade Organisation, Geneva.

Marketing Channels: Bangladeshi exporters are generally passive in their marketing efforts. It is the foreign buyers who take the initiative to find a producer, negotiate terms with a Bangladeshi party, provide materials, supply design and arrange markets. Barring few exceptions, Bangladesh producers have seldom explored the foreign markets. Thus they lack direct knowledge of consumers preference, prices and marketing approaches in qverseas market.

Chart II: Marketing Channel



The foreign buyers are apparel manufacturing companies who supplement their own production through such imports. Such garments are sold with their label to retail outlets. Some of the foreign buyers are importers/Wholesallers themselves. They have their own sales network and distribute through those to retailers. Some big retail outlets also buy directly from producers. It appears from interview with manufacturers that

Bangladesh readymade garment factories has been mostly working for apparel manufacturing companies. The joint venture companies are partners of apparel manufacturers and they attempt to market through the established outlets. Prices

Prices : Prices at the consumer level in USA and Europe are four to ten times higher than the FOB value of garment exported. The mark up includes freight, duty, commissions, profit for importer and retailer and in some cases remittances by Bangladeshi party to accounts abroad. The bargaining capacity of Bangladeshi party is low due to insufficiency of knowledge and inability to market directly in overseas markets.

PRODUCTION

Types of Arrangements: Bangladeshi manufacturers of ready-made garments operate under three types of production arrangement. First is the cutting and making (C&M) arrangement under which all fabrics, trim and other materials are supplied by the foreign buyer. Bangladesh firm is responsible only for cutting and stitching for a fee. Second, the cutting, making and trimming (CMT) arrangement. Under this arrangement the foreign buyer provides only the fabric, trim and other materials are purchased as per specification (and at times from specified suppliers) by the Bangladeshi manufacturer. Here the arrangement is commission plus cost. Third, arrangement is FOB where the buyer pays for garments FOB Chittagong and procurement of fabric, trim and other materials, as per specification (and at time from specified suppliers) is the responsibility of Bangladeshi party. The types of order indicate both the confidence of the foreign buyer and financial capacity of the local party.

Financial Arrangement and other Procedure: Government allows local manufacturers to open letters of credit for import of fabric, trim and other materials against irrevocable letters of credit for export upto 75% of the value of the order for 120 days. Under normal circumstances this is considered satisfactory arrangement. The industry has been aided by Bonded Warehouse system for import of materials and storing finished product for export.

Production Problems: There has been little problem in getting spare parts which can be easily procured from suppliers against XPL or IP. Repairs cause problem as the machines have to be shipped at times to Hong Kong for repair. The manufacturers have not set up service facilities in Bangladesh or get the serviceman and spares on emergency basis.

Productivity: Measures in readymade garments industry are not standardised across the countries. But some comparison is useful in indicating Bangladeshi standards.

Table 6: Average Person-Minutes required to make a men's Shirt

Country:	Bangladesh	Sri Lanka	India	South Korea	Hong Kong	Taiwan	USA
Person Minutes	25	24	23	21	20	19	14

Source: TIP Unit

The productivity in Bangladesh is low but comparable within the region. However, there exists wide variation within the industry. The large joint venture comprises tend to be as efficient as those in Hong Kong or South Korea. The new small units are said to be less efficient due to high rates of wastages.

Profitability: The readymade garments industry, till the imposition of quota by USA was considered highly profitable. A simulation exercise by a group of World Bank expert indicates that for fine fabric shirts the profit exports worth in US dollars 100 exports is about 22 dollars and for coarse variety it is 16 dollars.

The low productivity has not wiped out profits for these industries due to low wages paid to 75% of some 80,000 labourers working in 500 units. This is seen from the comparative wage cost per shirt of selected countries given below:

Table 7: Comparative Wage cost in Garment Industry (in US dollar)

Country	USA	Hong Kong	South Korea	Sri Lanka	India	Bangladesh
Wage per hour	7.53	1.40	1.53	0.35	0.40	0.25
Wage cost per shirt	1.76	0.46	0.53	0.14	0.15	0.10
Wage index with US as base	100	26	30	8	8.5	6

Source: TIP

Thus the comparative advantage of Bangladesh readymade garments industry is largely dependent on non-unionised female labour whose wage is low and government has taken no steps to fix effective minimum wages for them.

II. OBJECTIVES OF THIS PRODUCTIVITY ANALYSIS INTRODUCTION

The objective of this study is to (a) to measure, analyse and compare productivity in readymade garments industry in selected units and (b) to analyse factors responsible for inter-firm differences in productivity.

The productivity has been measured by variety of financial and operating ratios for a year, though for shorter term comparisons simpler data has been used. Such ratios over a number of years to find a trend at longer intervals for comparative purposes have been computed. To get the most benefit such ratios should be computed and analysed at regular intervals. The purpose of this exercise is to find suitability of the exercise rather than to carry it over a logically long period.

METHODOLOGY

A reason for selecting this particular industry was its growing importance in the non-traditional export sector of Bangladesh economy.

Readymade garments industry Association has been only recently formed and was not able to provide much assistance in ensuring participation. Department of Textiles of the Government also failed to assist in a meaningful manner. Though meetings with officials of both the

organizations were helpful, Department of Textiles provided us with a list of industries indicating location, capacity, investment and ownership.

The next step was to meet the factory owners wherever and whenever possible. This proved to be a very time consuming affair. Most of them did not consider an exercise of this kind to be useful, though some promised to help. Out of the 50 firms approached 20 were selected for in-depth data collection on the promise of collaboration. Finally, after nearly six months of persuasive work, data from 12 of them were found relatively consistent, adequately complete and apparently reliable to be useful for analysis.

In collecting the data a prepared questionnaire sent was generally used, though some items were not relevant for the industry. The questionnaire was tested quite a number of times. Conceptual clarity for the interviewer and problems of relating it to the accounting system necessitated many repeat visits. The questionnaire covered all operational aspects, financial aspects, marketing aspects and personnel aspects of the firm. In retrospect it appears a questionnaire in Bengali omitting non-relevant items would have been more useful.

In conducting the study we did not feel that we have been able to sell the idea to the owners/managers since this is a new venture and owner-managed firms in the sub-continent are less open to external evaluation. Hence the effort need be repeated for popularisation and extended to other sectors.

Data were collected from books of accounts or records wherever possible. At times the managers would not show the books but fill out the questionnaire themselves in presence of the interviewer. Data so collected were later checked for consistency.

SAMPLE CHARACTERISTICS

Age: We have purposefully selected those units which have a few years of operation. Recalling that the industry really grew since 1976 and that the data relates to 1982 (for which balance sheet was available), a sampled unit could have a maximum of six years of operation. In our sample we did not include any unit which did not have at least two years of operation. The age distribution of the 12 sampled units are given in Table 8.

Table 8: Age Distribution of Sampled Units

Years :	More than 2 Less than 3	More than 3 Less than 4	More than 4 Less than 5	More than 5	Total
Number:	2	2	4	4	12

Fixed Assets: The units vary in size. Value of fixed assets is an indicator of size. But value depends on sources and time of supply as well as on investment in premises. Hence this is not a good indicator of size. It is, however, an indicator of financial risk of the entrepreneurs. The units indicate wide variation in the value of fixed assets. The smallest unit has it at Taka 0.35 million while the largest has it at Taka 22.1 million. The biggest unit in the sample is also the biggest in the country. The distribution of the sample according to the value of fixed assets is shown in the table below.

Table-9 : Distribution According to Value of Fixed Assets

(in '000' US dollar)

Value of Fixed Assets	140-250	250-300	300-350	350-400	400+
Number	2	4	2	1	3

This distribution largely corresponds to the distribution in the industry and in that sense representative, even though stratified random sampling methods was not followed.

Employment: This is also another indicator of size. It was found that a factory with average monthly output of 25,000 shirts using 60 machines operating on a single shift employs 160 people the employment pattern being as follows:

Table-10: Employment by Function in a Garment Factory

Function:	Pattern making	Cutting	Collar & Cuff making	Body Sewing	Finishing packing	Mgmt. Admin.	Total
Number	2	20	25	80	25	8	160

The survey provided us with the following employment pattern which is considered representative of the employment pattern in garment industry.

Table 11: Employment Pattern in Sample Units

Number Employed	200-250	251-350	351-450	451-550	551+
No. of Units	2	4	1	3	2

The weightage in terms of small units in terms of valuation of fixed assets does not seem to be as pronounced when judged by employment criterion.

Production Capacity: The production capacity has not been measured by manufacturer's machine made capacity which may be unattainable due to lower labour efficiency in Bangladesh. Further age and current quality of machine may create difficulties in calculating attainable capacity. The alternative is to accept administratively determined licensed (i.e. sanctioned) capacity. Capacity is measured by 1000 dozens per year. The distribution of the size is given in the table below.

Table 12: Distribution of Sample units According to production Capacity
('000' doz /year)

Capacity:	75-100	101-150	151-250	151-350	351+	Total
Number	5	4	1	1	1	12

Area: It is also an indicator of size, assuming that they operate in equal number of shifts. However one may have higher built up area for future expansion, some may have business offices outside the factory premises and similar may be the case for bonded warehouse. Ignoring such possibilities size distribution as indicated by the factory area is given in the table below.

Table 13 : Size Distribution of Sample units as per Factory Area
(in Square Feet)

Area	upto 20,000	upto 40,000	upto 50,000	upto 70,000	Total
Number	4	4	1	2	12

This distribution is roughly in conformity with earlier indicators of size. Sale has been recorded in thousand of US dollars on annual basis as was available from statement of accounts. This overcomes the problem of variation in product and variation prices. The minimum reported sale is 3.6 million US dollars and the maximum is 53.3 million dollars. The range is indeed wide. The table below gives the distribution of sample units as per sale value.

Table 14: Distribution of Sample as per Sales Value

(in '000' US dollars)

Sales:	3000-5000	5001-10000	10000-20000	20000-35000	35000+
No. of units	5	3	1	2	1

In terms of location of the sample units there are no variation. Ten of the sample units are private limited companies and two are public limited companies; two of the companies were initially established as joint venture and ten were wholly locally owned, some with foreign collaboration in marketing.

Market Distribution of the sample units, seven companies primarily market their products in USA and five in the EEC countries.

Subcontracting: It appears that only tow companies sub-contract out to other firms, 1 neither take nor give sub-contract while eight others accept sub-contract from other firms.

The characteristics of the units are tabulated in Annexure 1 to provide an overall view of the characteristics of the sample units.

III. RATIO ANALYSIS

Ratios are relationships between absolute figures of related variables. The usefulness of ratios lie in its ability to add further to the information content and meaning of a single absolute figure. However, ratios for interpretation purposes require standards (for an industry) to be comparable with such ratios. We have no such standards available for readymade garments industry in Bangladesh. But from the atributes pertaining to the variables which is measured, one can get an idea of

favourable or unfavourable position from higher or lower values cross the firms in an industry or from increase or decrease of the value over time for the same firm.

In this study we have calculated a large number of ratios for our twelve sample firms. All these ratios are presented in Annexure-3.

The most important ratio is the return on Investment. This is a basic indicator of productive efficiency. It is very commonly used to measure performance of enterprises in a market economy. One way of calculating it is by dividing operating profit by total operating asset. The higher is the value of the ratio, the greater is the productivity of asset i.e., return on investment. The return could also be negative indicating either a problematic year of operation or bad decision about investment or bad management etc. The firms in our study indicate wide variation in return on investment. This has been caused by wide variation in operating profit as well as in operating asset.

The two with negative values have negative operating profit. The range of return on asset is from 200 to 381. Three firms seem to earn high returns (over 100%) and other four reasonably high returns (about 50% or more). Three of the firms earn moderate returns only.

It will be recalled that there are shortcomings of this method of comparing one company with that of another due to differences in accounting practices and valuation methods. The use of original cost of asset in place of depreciated book value makes the ratios to be indicators of efficiency; other things remaining equal, higher cost efficiency indicates higher profit margin as well as higher asset turnover. Turnover indicates in a sense asset utilization measured by value of sales. The firms can influence its value or volume through its marketing strategy as their assets are given.

The next set of important ratios are profit margin on sales and turnover of assets. The first indicates amount of profit or loss per 100 monetary unit of sales. Profit as a per cent of sale is also influenced by accounting methods. The twelve units, as would be expected from earlier information, demonstrated wide fluctuations, varying from 379 to 64.01, almost 100 point spread. The two firms earning operating loss naturally had negative ratios. Very high profit margin (over 25) has been earned by four firms. Moderate profit have been earned by two and three earned low profit margin.

Table 15: Profit Margins Earned by 12 Ready-made Garments Manufacturing Units in Bangladesh.

Firms	1	2	3	4	5	6	7	8	9	10	11	12
Profit Margin	379	-10.71	21.02	64.01	28.32	25.70	27.68	15.00	11.41	35.78	6.74	6.90

The other ratio is the asset turnover. Like margin it is considered to be an indicator of efficiency, other things remaining equal.

The turnover indicates managements efficiency in utilising given assets through better sales effort. Here also valuation of assets affect the ratios. The range of turnover ratios also vary widely from 1.02 to 31.25. High turnover has generally indicated better performance; but if sales price dose not cover production cost high turnover ratio does not necessarily mean better profit position. The two firms which earned negative profit have somewhat better turnover ratio than some others.

The ratios of the twelve firms are reported in the following table.

Table 16: Turnover Ratio of Selected Ready-made Garments Units in Bangladesh.

Firms	1	2	3	4	5	6	7	8	9	10	11	12
Turn over Ratio	5.28	1.42	2.33	2.31	1.02	2.34	1.82	2.01	2.25	10.65	31.25	10.34

Following this calculation of returns on assets and margins, we proceeded to look into costs which determine the margin. The important cost is production cost and it can be subdivided into materials and parts, labour and overhead. These costs are expressed as a ratio of sales revenue. The production cost to sales ratio should be less than one hundred; lower is the ratio higher is the profit margin and thus higher is the operational efficiency. The two loss marketing firms have production cost to sales ratio higher than one hundred. The lowest in the sample is 61.74. The ratios for three firms besides the two loosing firms are higher than 90 thus indicating low profit margin. This is presented in the following table.

Table 17: Production Cost to Sales Ratio.

Firms	1	2	3	4	5	6	7	8	9	10	11	12
Ratio	134.54	105.4	76.87	93.77	69.75	72.21	70.44	82.85	86.25	61.74	90.09	91.90

It is at times interesting to look into the components of production cost. These components could easily be expressed as a ratio of total production cost. But for the sake of comparability, convenience and convention, these are expressed as a ratio of value of sales. As expected materials and parts account for the most dominant part of production cost and thus display higher value as a ratio to sales. In other words the readymade garments industry is a material intensive industry. The range of values vary from 48.17 to 124.79. The values are constant with earlier indicators. This indicates that some are more efficient in using materials than others. Those with higher ratios seem to have higher wastage and rejects. The cost to sales ratio has been shown in the following table.

Table 18: Cost to Sales Ratio

Firms	1	2	3	4	5	6	7	8	9	10	11	12
Material & Parts	124.79	96.18	70.83	86.74	62.96	66.34	64.24	76.92	80.18	48.17	85.71	87.93
Labour	8.26	6.71	5.20	6.20	5.11	4.90	5.0	5.16	5.28	13.36	4.30	3.83
Manufacturing Overhead	3.05	3.63	1.83	2.40	2.07	1.89	2.1	1.49	1.67	0.2	0.5	0.1

The labour cost to sales ratio also demonstrate wide variation from 3.83 to 13.36. It appears that an average ratio should be around 5. Anything above this should call for management's attention. One of the firms, earning high operating profit has higher labour cost indicating use of more labour in non-core areas of the operation and payment of higher wages and employment of better skilled labour. This is also the firm with lowest wastage in material.

The manufacturing overhead as a ratio of sales vary from 0.1 to 3.63. The firms making losses display higher overhead cost. Besides that, there is no strong correlation between ratio of manufacturing overhead to sales and profit.

We proceed to calculate gross margin which is the ratio of gross profit to value of sales. This ratio is similar to profit margin; only higher. The range is wide, varying from -3.45 to +38.25.

Table 19: Gross Margin Ratio

Firms	1	2	3	4	5	6	7	8	9	10	11	12
Gross Margin	-34.53	-5.40	23.12	6.72	30.74	27.78	29.55	17.14	13.74	38.25	9.4	8.09

There are other expenses which have not been considered so far. These are related to warehousing and shipping, selling and administrative costs which are not part of production. The ratios as with other items, demonstrate wide variation. The warehousing cost is as low as 0.19% of sales and as high as 6.7% of sales value.

The most profit making firms keep it around 1% of sales value; the two loss marketing firms displayed higher costs on this account though not the highest. The administrative cost ratios for the loss marketing firms are higher than other. It is generally slightly above one; the loss marketing firms show double that magnitude. Selling costs are generally very low for those units except those who have mounted their own marketing effort and are selling direct to chain stores. The selling cost to sales ratio is generally less than 0.1 but for three units this is much higher.

Table 20: Other Expense Ratios

Firms	1	2	3	4	5	6	7	8	9	10	11	12
Wher-hous-in gand shipping cost	1.79	2.87	1.12	0.963	1.065	1.066	1.07	0.95	0.188	0.57	3.0	6.70
Selling cost	0.137	0.061	0.06	0.07	0.06	0.07	0.1	0.06	0.05	3.4	5.0	2.0
Admin. Cost	2.20	2.74	1.35	1.20	1.33	1.12	1.14	1.53	1.41	1.41	2.0	1.45

The next set of ratios examine asset utilisation per 1000 dollars worth of sale. In this respect operating assets, current assets and fixed assets were considered.

Table 21: Asset Utilisation Ratios
(Value of Asset per 1000 dollars Sale)

Firms	1	2	3	4	5	6	7	8	9	10	11	12
Operating Assets	189	702	428	495	973	427	551	496	444	93	32	96
Current	139	595	375	413	433	384	500	439	386	125	89	70
Fixed	78	106	53	61	60	43	51	56	57	55	31	26

Better asset utilisation is indicated by lower value of the ratios. Utilisation of fixed assets more intensively and bringing down investment in current asset improve asset utilisation. The second firm has inferior asset utilisation record. It can be seen that the fifth firm has the most inferior operating asset utilisation but comparable current and fixed asset utilisation ratio. Improvement in operating asset utilisation could produce better productivity and profit position for this firm. But better asset utilisation has not ensured profit for the first firm due to inferior sales and procurement performance.

Another set of ratios relate to value added to production hours worked, machinery equipment, material and floor area. The higher is the value, the better is the performance of the firm.

Table 22: Value Added Ratios

Firms	1	2	3	4	5	6	7	8	9	10	11	12
Hours worked	-1.24	-0.142	1.78	4.53	2.39	2.21	2.30	1.57	1.09	3.54	1.06	2.95
Mach- chine & Equip	-3.81	-0.32	4.99	11.75	5.74	7.32	6.63	4.10	3.05	11.19	4.56	5.30
Mate- rial	-0.23	-0.03	0.38	0.82	0.56	0.47	0.52	0.27	0.22	1.03	0.13	0.12
Floor Area	-52.39	-3.0	64.24	146	57.4	41.85	46.47	23.59	24.43	76.61	25.55	62.81

It is immediately seen that ones with highest cost are also the ones that make losses or lower profit and vice-versa. This holds primarily for the material cost, not necessarily for labour cost or overhead. However, ones with lowest cost are certainly the more productive, profitable and efficient ones.

IV. REGRESSION ANALYSIS

In this section we shall attempt an analysis of productivity in twelve readymade garments unitl in Bangladesh. The cross section data relates to one year (83/84). Productivity can be differently measured. Total labour productivity is the ratio of value added to total manhour worked.

$$L_P = \frac{\text{Value added}}{\text{Employee} \times \text{Average hour worked}} = \frac{V}{L.h.}$$

Total capital productivity is the ratio of value added to sum of depreciation and leased equipment charge divided by average hourly wage. In Bangladesh case there are no leased equipment charge.

Hence-

$$K_P = \frac{\text{Value Added}}{\text{Capital} \times \text{Depreciation Rate}} = \frac{V}{k.d.}$$
$$\frac{\text{Average hourly wage}}{h}$$

Total factor productivity is the ratio of value added to the sum of the two denominators.

$$\frac{V}{L.h + \frac{K.d}{h}}$$

Value added is the surplus available from sales value of the product after payment for raw materials and other process inputs except labour. This is what is available to pay labour, charges for use of capital, taxes and income to owners. It has been calculated from the accounting data by adding profit before tax, wages and salaries, interest charges and allowances for depreciation.

Total manhour worked has been calculated by multiplying the number of employees by number of days worked by eight. These units reportedly work one shift of eight hours. The number of days worked varied between 320 and 250. It has not been possible to get data on absenteeism. It is reported that it is low in this industry.

Average hourly wage has been calculated by dividing wages and salary figure by manhour worked. Depreciation data have been recorded from the accounting book. There are no leased equipment in these units. All the equipments have been procured through direct purchase or a hire purchase arrangement.

The twelve units, the value added and the productivity figures are as follows.

We know, output is a function of capital, labour and management inputs. Labour output is then a function of capital and management inputs and capital output is a function of labour and management input.

$$\frac{\text{Value added}}{\text{Labour}} = f (k,M)$$

$$\frac{\text{Value added}}{\text{Capital}} = f (L,M)$$

$$\frac{\text{Value added}}{\text{Labour+Capital}} = f (M)$$

Capital may be measured by value of fixed asset and labour by manhour worked. But for productivity purposes capital intensity and labour intensity are more relevant variables. The management factors considered are capacity, ownership pattern, sub-contracting work, marketing destination and repair and maintenance.

For indicating ownership pattern we have used dummy variables; 1 for public limited company and 0 for private limited company. The private limited companies are family concerns and less interested in proper management. On a priori basis we assume that public limited companies are better managed and thus demonstrate better productivity.

Sub-contracting in or out also influences productivity. The one who gives sub-contract is the one responsible for marketing it. On this basis it is assumed that its own production line is better managed and thus it is characterised by better productivity. Thus for the firms which gives sub-contract the dummy variable used is 1 and those which do not give sub-contract it was noted by 0.

Market destination also has important implication for productivity. The market of USA is considered to be more discriminatory and thus more

Table: 23 Value added and Productivity Figures for Selected Readymade Garments Units

Firms	1	2	3	4	5	6	7	8	9	10	11	12
Value	-1047.9	-96.0	1248.7	2937.5	1148.4	2929.5	2323.5	943.7	915.6	3833.1	511.14	3769.0
Added												
T. L. P.	-1.15	-0.13	1.53	4.00	2.08	2.07	2.12	1.37	0.99	3.01	1.05	2.37
T. C. P.	-11.93	-0.82	14.49	39.16	17.45	23.14	20.82	12.48	8.97	72.59	14.6	35.55
I. F. P.	-1.04	-0.113	1.38	3.69	1.86	1.90	1.93	1.24	1.89	2.89	0.99	2.23

demanding which in turn induces more care and better productivity. These firms which export primarily to USA was indicated by dummy variable 1 and others by 0.

Table-24 : The Results of Regression Analysis :

	Total Productivity	Capital Productivity	Labour Productivity
Constant	1.14	-103.73	6.48
<u>Capacity</u>			
Coefficient	.0016	.083	.005
t	.87	1.99**	1.02
Partial R ²	.04	.11	.04
<u>Ownership</u>			
Coefficient	.718	21.23	-1.26
t	.77	2.33*	-0.05
Partial R ²	.04	0.35	0.04
<u>Subcontract IN</u>			
Coefficient	-.488	-3.19	.195
t	-.61	-1.81**	.88
Partial R ²	-.018	0.19	.002
<u>Subcontract OUT</u>			
Coefficient	-.881	-47.20	-1.32
t	-.69	-2.30**	-1.18
Partial R ²	.032	0.14	0.08
<u>Market Destination</u>			
Coefficient	.803	36.3	2.87
t	1.12	1.94**	1.33
Partial R ²	.11	.07	0.15
<u>Capital Intensity</u>			
Coefficient			-.0086
t			-1.23
Partial R ²			0.174
<u>Labour Intensity</u>			
Coefficient		76883.93	
t		2.15**	
Partial R ²		.11	
R ²	.39	.798	.48
R ²		.55	1.137
F		10.19***	1.28**

** = Significant at 95%; ***=Significant at 99%

Labour intensity has been measured by dividing number of employees by value of fixed assets; whereas capital intensity is its inverse value. Thus a priori hypothesis is higher the capital intensity the higher is labour productivity and higher is total productivity. The inverse hypothesis is higher is the labour intensity lower is the total productivity and higher is the capital productivity.

The size variable capacity is expected to show positive influence on productivity as almost all the units are small and there is scope for economies of scale. The results of regression is given below:

It will be seen that none of the variables were significant for labour productivity. While all of the considered variables were significant for capital productivity.

It appears that ownership pattern exerts an influence of considerable significance. Sub-contracting IN has a negative sign as has Sub-contracting OUT. The possible explanation is while sub-contracting IN allows use of idle capital, the income from such use is less while Sub-contracting OUT reduces income due to factor payments without increasing total value productivity. This implies that a balanced unit which neither subcontract OUT nor subcontract IN has better capital productivity. Market destination has positive relationship but less explanatory power. Labour intensity demonstrates expected positive sign and significant influence. Same is true of capacity.

In case of labour productivity, ownership shows a negative sign. This may be because private limited companies use their 'captive' labour more intensively without being subject to union pressure. Sub-contracting IN has expected positive sign as it makes work available for labour and subcontract OUT has negative sign for similar reasons. Market destination has positive sign, indicating better value of output. Capacity has positive sign indicating scale effect; while capital intensity has unexpected negative sign indicating 'unutilised' or 'unbalanced' capital investment. Even though most of the signs are expected, none of them are significant.

In case of total factor productivity, none of the variables considered come out significant. The signs are consistent with capital productivity and in case of ownership and sub-contracting OUT are at variance with labour productivity. It is possibly because the total productivity is influenced more by capital input than labour.

Because of the failure to explain labour productivity, we changed the capital intensity and labour intensity variable and entered investment and number of employees in both equations. We dropped capacity and introduced a new variable expenditure on maintenance standardised for capacity as a measure of quality of equipment. The results are reported below:

Table-25 : Regression Analysis of Productivity

	Total Factor Productivity	Capital Productivity	Labour Productivity
Constant	-48.81	123.08	-110.73
<u>Investment</u>			
Coefficient	1.128	3.00	1.7272
t	5.18***	3.39***	6.29***
Partial R ²	.72	.56	.79
<u>Sub-contract IN</u>			
Coefficient	28.54	84.72	42.88
t	3.97***	2.96***	5.54***
Partial R ²	.05	.098	.02
<u>Maintenance/Capacity</u>			
Coefficient	omitted	-.139	.0125
t		(-2.07)**	2.12**
Partial R ²		.03	.0008
<u>Number of Employees</u>			
Coefficient	-.1126	-.829	.0954
t	(-1.93)**	-1.59**	(3.039)***
Partial R ²	.006	.02	.0018
<u>Market Destination</u>			
Coefficient	-11.03	-83.50	-9.95
t	-2.26**	-2.48**	-2.53**
Partial R ²	.001	.036	.002
<u>Give Sub-Contract</u>			
Coefficient	-27.93	102.87	-11.95
t	-3.26***	1.77*	-1.76*
Partial R ²	.02	.014	.0008
<u>Ownership</u>			
Coefficient	30.95	99.30	-7.45
t	2.72**	1.40**	-3.72***
Partial R ²	.02	.02	.017
R ²	.81	.775	.844
R ⁻²	.59	.382	.571
F	26.91***	12.83***	39.66***

* = Significant at 90%; ** = Significant at 95%;

*** = Significant at 99%

It will be seen that most of the variables are significant. Investment has positive sign for all three productivity measures. This is the indicator of economies of scale. Sub-contract IN also has positive sign for all three productivity measures as it allows better utilisation of capacity. Maintenance of quality does not seem to be important and has negative sign for capital productivity but expected positive sign for labour productivity. Maintenance indicating breakdown and thus non-use of capital machinery could be the reason for the negative sign. Number of employees has negative sign for total productivity and capital productivity. This may be explained by the fact that as capacity indicator, the effect has already been taken into account. But for labour productivity the sign is positive indicating further economies of scale effect. Sub-contract OUT reduces total and labour productivity while increases capital utilisation. Public ownership has positive influence on total and capital productivity and negative influence on labour productivity. There are differences in few signs in two sets of equation. These relate to qualitative management variables. On the whole it appears that the second set of equation explains better the productivity scenario.

Finally, we attempted to explain production measured by value added with the same set of variables. The result is as follows:

$$Y = -3923.44 + 6.55c - 28.49FA + 33.37E - 2582.370W$$

(1.35)*	(--1.22)	(1.38)*	(--2.87)***
.129	.03	.004	.45

$$-691.69SIN - 2879.68SOUT + 3849.53M$$

(--1.17)	(--2.14)**	(1.69)*
.02	.05	.013

$$R^2 = .708$$

$$(F = 8.25)***$$

Inclusion of production capacity makes fixed asset insignificant and it comes with negative sign. Both sub-contract IN and sub-contract OUT have negative influence on value added as one reduces "average income level" and other requires leakage. The public limited companies seem to have negative influence on value added, while market destination indicates a positive influence.

It may be recalled that this exercise has been carried on restricted number of samples and hence the value of this exercise are to be judged for their logicity only not for exactness of relationship.

ANNEXURE: 1: CHARACTERISTICS OF SELECTED UNITS OF GARMENTS INDUSTRY IN BALNGLADESH

Firm No.	Age	F.A. (000 us \$)	No. of Employee	Capacity (000dozen/yr)	Area Square ft.	Sales (000 us \$)	Ownership	Primary Sub-		Location
								Market	Contract	
1	3	281	380(350)	130	20,000	3630	Local	USA	Subcont	Dhaka
2	2	350	305(280)	100	32,000	3275	Local	USA	IN	Dhaka
3	4.3	257	350(300)	100	20,000	4800	Local	EEC	IN	Dhaka
4	5.6	255	300(270)	100	20,000	4150	Local	USA	IN	Dhaka
5	2.7	204	230(200)	75	20,000	3375	Local	EEC	IN	Dhaka
6	5.3	405	590(550)	200	70,000	9375	Jt Venture	USA	Subcontract	Dhaka
7	4.6	357	455(420)	150	50,000	7000	Local	EEC	Subcont. IN	Dhaka
8	4	257	285(250)	100	40,000	4550	Local	USA	IN	Dhaka
9	3.2	306	385(350)	125	36,000	5300	Local	EEC	IN	Dhaka
10	5	428	530(450)	345	50,000	7711	Local	USA	OUT	Dhaka
11	4.2	140	200	150	20,000	4500	Local	EEC	NONE	Dhaka
12	7	888	660(530)	1380	60,000	34,250	Local	USA	NONE	Dhaka

Note: Figures in Parenthesis indicate number of employees in Production department.

ANNEXURE 2: Various Data of Selected Units of Garments Industry (in 000 US \$)

Firm No.	1	2	3	4	5	6	7	8	9	10	11	12
Operating Asset	687	2300	2057	2055	3284	4005	3857	2257	2356	7241	1441	3312
Operating profit	(1376)	(351)	1009	2662	956	2429	1938	683	605	2759.46	303.39	2368
Sales	3630	3275	4800	4150	3375	9375	7000	4550	5300	7711	4500	34250
Production Cost	4856	3422	3669	3874.5	2335.8	6734	4900	3751	4548	4761.34	4076.61	31478.91
Material & Parts	4530	3150	3400	3600	2125	6220	4500	3500	4250	3714.9	3857.14	30119
Production labour	300	220	250	250	172	460	350	235	280	1030.79	193.75	1313
Mfg. Overhead	26	12	19	24.5	38.8	54	50	16	18	15.65	251.71	4691
Gross Profit	(1226)	(165)	1131	2755	1039.2	2641	2100	799	752	2949.64	423	2771.8
Warehousing and Shipping	65	94	54	40	36	100	75	43	69	16.4	36	185
Selling Cost	5	2	3	3	2	7	7	3	3	32.4	60	10
Admin. Cost	80	90	65	50	45	105	80	70	75	1414	24	208
Manhours worked (000 hours)	912	732	840	720	552	1416	1092	684	924	1272	480	1584
Current Assets	505	1950	1800	1800	3080	3600	3500	2000	2050	962	400	2424
Fixed Asset	281	350	257	255	204	405	357	257	306	428	140	888
Inventory	5	50	100	-	500	-	-	-	50	-	-	-
Receivables	400	900	700	800	1080	-	2000	1000	2000	-	-	3900
Other Current Asset.	100	1000	100	1500	-	1500	1000	-	-	-	-	-
Value Added 000 US \$	1049.9	-96	1284.7	2937.5	1148.4	2929.5	2323.7	943.7	915.6	3833.05	511.14	3769
TEP	-1.04	-113	1.38	3.69	1.86	1.90	1.93	1.24	0.89	2.89	0.99	2.23
TCP	-11.93	-82	14.49	39.16	17.45	23.14	20.82	12.48	8.97	75.59	14.6	35.55
TLP	-1.149	-1.31	1.54	4.07	2.08	2.07	2.12	1.37	0.99	3.01	1.06	2.37
Average hours wage in US \$	0.32	0.30	0.29	0.34	0.31	0.32	0.32	0.34	0.30	0.81	0.40	0.80
Production hours	840	672	720	648	480	1320	1008	600	840	1080	480	1276

Annexure 3: Various Ratios for Selected Readymade Garments Units

Firm No.	1	2	3	4	5	6	7	8	9	10	11	12
1. Operating Profit/ Operating Asset(%)	381	144	129	71.49	60.6	50.24	49	30.26	29.1	25.67	-152	200
2. Operating Profit/sale (%)	35.78	6.74	64.01	6.91	25.70	27.68	21.02	15.00	23.32	11.41	-10.71	-37.9
3. Sale/Operating Asset time	10.65	31.25	2.01	10.34	2.34	1.82	2.33	2.01	1.02	10.65	1.42	5.28
4. Production cost/sale(%)	61.74	90.59	93.77	91.90	72.21	70.44	76.87	82.85	69.25	86.25	105.405	134.54
5. Material, parts/sale(%)	48.17	85.71	86.74	87.93	66.34	64.29	70.83	76.92	62.96	80.18	96.18	124.79
6. Production cost/sale(%)	13.36	4.30	6.02	3.83	4.90	5	5.20	5.16	5.11	5.28	6.71	8.26
7. Mfg. Overhead/Sale(%)	.2	.5	2.40	.1	1.89	2.1	1.83	1.49	2.07	1.67	3.63	3.05
8. Gross Profit/sale(%)	38.25	9.4	6.22	8.09	27.78	29.55	23.12	17.14	30.74	13.74	-5.40	-34.53
9. Warehousing & shipping(%)	1.57	3	.963	6.70	1.066	1.07	1.12	.95	1.06	.188	2.87	1.79
10. Selling cost/sale(%)	3.11	5	.07	2	.074	.1	.06	.06	.059	.05	.06106	.137
11. Admin. cost/sale(%)	1.41	2	1.20	1.45	1.12	1.14	1.35	1.53	1.33	1.41	2.74	2.20
12. Operating Asset/sale(%)	93	32	495	96	427	551	428	496	973	444	702	189('000)
13. Current Asset/000sale (%)	125	89	413	70	384	500	375	439	433	386	595	139
14. Fixed Asset/000sale(%)	55	31	61	26	43	51	53	56	60	157	106	78
15. Other C.A./000sale(%)	14056	15000	23833.3	16000	15889.8	15384.6	13714.3	15964.67	14673.9	13766.7	10737.7	9552.63

Annexure 3: (Continued)

16. Sale/floor area(Time) (%)	154.22	225	207.5	570	392	140	240	133.75	168.5	147.22	102.34	181.5
17. Sale/Prod.worker (000 US\$) %	17.13	22.5	15.57	64.37	17.04	16.66	16	18.2	16.87	15.14	11.69	10.37
18. Value added/Prod. Hours, worked (\$)	3.54	1.60	4.53	2.95	2.21	2.30	178	1.57	2.39	1.09	-.142	-1.24
19. Value added/ftr. area(\$)	76.61	25.55	146	62.81	41.85	46.47	64.24	23.59	57.42	24.43	-3	-52.39
20. Value added/Machinery & Equipment (\$)	11.19	4.56	11.75	5.20	7.32	6.63	4.99	4.10	5.74	3.05	-3.2	-3.81
21. Value added/ Material (\$)	1.03	.132	.815	.125	.47	.52	.38	.27	.56	.22	-.03	-.23
22. Mach. & Equip./Prod. worker (000 US \$)	.76	.56	.92	1.33	.73	.78	.83	.92	1.0	.86	1.07	.78
23. Material/Prod.worker(\$)	8.25	19.28	13.53	56.61	11.30	10.71	11.33	8.33	10.63	12.14	11.25	12.94
24. Cost/1000 Dozens												
(a) Material Cost (\$)	12.63	20.6	36	30.51	31.1	30	34	35	3.69	40.09	40.15	44.444
(b) Production labour(\$)	3.5	1.03	2.5	1.33	2.3	2.33	2.5	2.35	.299	2.64	2.80	2.94
(c) Overhead (\$)	.05	.137	2.245	.047	.27	.33	.19	.106	.241	.18	.66	.255
(d) Total Production cost(\$)	16.19	21.8	38.74	31.89	33.67	32.67	36.69	37.51	4.06	42.90	43.62	47.64
25. Equipment/1000 dozens (\$)	1.16	.6	2.57	.72	2	2.33	2.50	2.3	.347	2.83	3.82	2.69

বাংলাদেশের পোশাক শিল্পের রাজনৈতিক অর্থনীতি

জামাল আবদুল জলিল চৌধুরী*

১। ভূমিকা

বাংলাদেশে পোশাক তৈরীর ব্যবসা বেশী দিনের কথা নয়। আজকের মতো বৃটিশ আমলে, এমনকি পাকিস্তান আমলেও এধরনের পোশাক প্রস্তুতের হিড়িক ছিল না। আমাদের দেশে এর গোড়াপত্তন ঘটে পাকিস্তানের শেষ পাদে। জন্ম-জন্মটভাবে আমাদের দেশে ব্যবসাটি শুরু হয়, স্বাধীনতারও প্রায় ছ'বছর পর। এ পোশাক শিল্পের ক্রমবর্ধমান প্রসারণের ফলে আমাদের আর্থ-সামাজিক অবস্থার উপর যে সার্বিক প্রভাব পড়েছে তা বিবেচনা করা দরকার।

আন্তর্জাতিক বাজার সংকটের প্রেক্ষাপটে ষাটের দশকের গোড়ার দিকে স্থানীয় বাজারগুলো নিজেদের কক্ষায় রাখার নামে বিদেশী পুঁজি বিনিয়োগকারী সংস্থাসমূহ তৃতীয় বিশ্বের বিভিন্ন দেশগুলোতে আসতো। কারণ এইসব দেশে সস্তা শ্রমের দিকে বিদেশী পুঁজি বিনিয়োগ সংস্থাগুলোর ছিল লোলুপ দৃষ্টি। প্রথম পর্যায়ে তৃতীয় বিশ্বের সস্তা শ্রমের বিনিময়ে তৈরী

"প্রচলিত" উৎপাদনের আন্তর্জাতিক বাজার সৃষ্টি এবং রফতানী বৃদ্ধির উদ্যোগ তাঁরা নিয়েছিল। গত দ্বিতীয় পঞ্চবার্ষিক পরিকল্পনায় বিদেশী বিনিয়োগকে উৎসাহিত করা হয়েছে। উল্লেখ্য যে, তৃতীয় পঞ্চবার্ষিক পরিকল্পনাতেও বিদেশী পুঁজি বিনিয়োগকে উৎসাহ প্রদান করা হয়েছে।

এধরনের শিল্প প্রক্রিয়া প্রধানতঃ সস্তা শ্রমের ভিত্তিতে গড়ে উঠে। দরিদ্র দেশগুলো সস্তায় শ্রম বিক্রির প্রতিযোগিতায় তুলনামূলকভাবে উন্নত দেশগুলোর চেয়ে বেশী সুবিধা পাচ্ছে। কারণ অনুন্নত দেশগুলোর শ্রম মূল্যঃ উন্নত দেশগুলোর এক চতুর্থাংশ মাত্র। তৃতীয় বিশ্বের যেসব দেশ পোশাক রপ্তানীতে উল্লেখযোগ্য অবদান রেখেছে সেগুলো হলো হংকং, দক্ষিণ কোরিয়া এবং ভারত। ১৯৭০ সালের দিকে অনুন্নত দেশগুলো থেকে যে পরিমাণ পোশাক রপ্তানী হতো তার প্রায় ৮৫ ভাগই এ কয়টি দেশ যোগান দিত। তার মাঝে হংকং এর স্থান ছিল উর্ধে এবং এখনও তাই রয়েছে। সম্প্রতি দক্ষিণ কোরিয়ার সাথে হংকং এর পোশাক তৈরী এবং রপ্তানী বাজারে দারুণ প্রতিযোগিতা চলছে। আমাদের জাতীয় উৎপাদনে পোশাক শিল্পের অবদান নিরূপণ করা প্রয়োজন। পাশাপাশি পোশাক শিল্পকে কেন্দ্র করে জাতীয় এবং আন্তর্জাতিক

* ব্যবসায় প্রশাসন ইনস্টিটিউট, ঢাকা বিশ্ববিদ্যালয়।

পর্যায়ে যে রাজনৈতিক খেলার সৃষ্টি হয়েছে তার গতি প্রকৃতি চিহ্নিত করা প্রয়োজন। এ গবেষণার উদ্দেশ্য পরিপূর্ণ করার লক্ষ্যে যেসব বিষয়াদি অন্তর্ভুক্ত করা হয়েছে তা নিম্নরূপঃ

- ক) বাংলাদেশের প্রেক্ষাপটে নারী শ্রম ও শ্রমিক রণনীমুখী শিল্পায়ন, বহুজাতিক কর্পোরেশন এবং বাংলাদেশের পোশাক শিল্প, এবং পোশাক শিল্পে আন্তর্জাতিক শ্রম বিভাজনের চিত্র পরখকরে দেখা।
- খ) পোশাক শিল্পের সাংগঠনিক কাঠামো, এই শিল্পের আন্তর্জাতিক বাজারের রাজনৈতিক চালচিত্র এবং কোটা বিষয়ক জটিলতা মূল্যায়ন করে দেখা।
- গ) বাংলাদেশের পোশাক শিল্পের দুর্যোগের সামাজিক প্রভাব, চট্টগ্রাম প্রক্রিয়াজাতকরণ এলাকায় পোশাক শিল্পগুলোর রাজনৈতিক-অর্থনৈতিক কাঠামো পরীক্ষা করে দেখা এবং আন্তর্জাতিক বাজার কাঠামোতে পোশাক শিল্পের আগামী দিনের আর্থ-সামাজিক প্রভাব বিশ্লেষণ করা।

২। নারীশ্রম ও শ্রমিক

বাংলাদেশে ৯৬ মিলিয়নের উপর জনসংখ্যার বসবাস রয়েছে। বর্তমানে জনসংখ্যার প্রবৃদ্ধিহার ২.৩% এবং শ্রম শক্তির সংযোজন প্রবৃদ্ধির হার প্রায় ৩.২% এর কাছাকাছি। দ্বিতীয় পঞ্চবার্ষিকী পরিকল্পনায় জনসংখ্যা বৃদ্ধির হার কমিয়ে ১.৮% এ আনার কথা বলা হয়েছে। তাতে করেও জনসংখ্যার বৃদ্ধি এ শতাব্দীর শেষ পদে গিয়ে দাঁড়াবে ১২৭ মিলিয়ন। এই মোট জনসংখ্যার মাঝে ৪২ মিলিয়ন শ্রমিক, যার মাঝে প্রায় অর্ধেকই নারী শ্রমিক। একটি দেশের মহিলাদের সার্বিক অবস্থা সে দেশের আর্থ-সামাজিক উন্নয়নের উপর সরাসরি প্রভাব ফেলে। যে দেশের মোট জনসংখ্যার অধিকাংশই নারী তেমন একটি দেশের দীর্ঘস্থায়ী আর্থ-সামাজিক উন্নয়নের ধারা, মেয়েদের অবস্থার পরিবর্তনকে বাদ দিয়ে সম্ভব নয়। কোন দেশের মেয়েরা যদি কেবলমাত্র গৃহস্থালীর কাজ এবং শিশু পালন নিয়েই ব্যস্ত থাকে তাহলে এ শুধু আর্থ-সামাজিক অবস্থার অবনতিই করবেনা বরং এ অবস্থানটি জনসংখ্যা বৃদ্ধিতেও ছাপ ফেলবে।

১৯৮১ সনের হিসাব মোতাবেক নারী এবং পুরুষ যাদের বয়স ১০ বৎসর তাদের অর্থনৈতিক কর্মকাণ্ডে অংশ গ্রহণের মাত্রা যথাক্রমে ৪.৩% এবং ৮৮.৯%। ১৯৬১ সালের আদমশুমারীতে দেখা যায় নারী এবং পুরুষের শ্রম শক্তিতে অংশ গ্রহণ ছিল যথাক্রমে ১৭.২% এবং ৮৭.৬%। পুরুষের বেলায় ১৯৮১ সনে এসে দেখা যায় শ্রম শক্তিতে অংশ গ্রহণ ১৯৭৪ এর তুলনায় কিছুটা বৃদ্ধি পায় এবং ১৯৮১ সালের আদমশুমারীর কাছাকাছি অবস্থাকে নির্দেশ করে। ১৯৮১ সালে এবং ১৯৬১ সালে নারী শ্রমিকদের অংশ গ্রহণের শতকরা হার ছিল যথাক্রমে ২.৭%। একই আর্থ-সামাজিক অবস্থা বিরাজ করে এমন উন্নয়নশীল দেশগুলোর মাঝে বাংলাদেশের মেয়েদের শ্রম শক্তিতে সরাসরি নিয়োজিত অংশ একেবারেই কম। উল্লেখ্য যে নেপালে এবং ভারতে উৎপাদনী শক্তিতে নারী শ্রমিকদের অংশ গ্রহণ যথাক্রমে ৩৯.১০

চৌধুরী : পোশাক শিল্পের রাজনৈতিক অর্থনীতি

এবং ২৭.১। আদমশুমারী রিপোর্ট অনুযায়ী দেখা যায় ১৯৬১ সালে ২.৬ মিলিয়ন, ১৯৭৪ সালে ০.৮ মিলিয়ন এবং ১৯৮১ সনে ১.২ মিলিয়ন নারী শ্রমিক সরাসরি উৎপাদনের ক্ষেত্রে নিয়োজিত ছিল। অথচ পাশাপাশি পুরুষ শ্রমিকদের কর্ম সংস্থানের চিত্রে দেখা যায়, ১৯৬১ সাল ১৪.৭ মিলিয়ন, ১৯৭৪ সালে ১৯.২ মিলিয়ন, এবং ১৯৮১ সালে ২০.৪ মিলিয়ন পুরুষ শ্রমিক উৎপাদনের ক্ষেত্রে নিয়োজিত ছিল। আন্তঃশুমারীকাল ব্যবধানের মাঝে অর্থাৎ ১৯৬৪ সালে থেকে ১৯৭৪ সাল পর্যন্ত নারী শ্রমিকদের প্রবৃদ্ধির হার ৬৪%, ১৯৭৪ থেকে ১৯৮১ সাল পর্যন্ত ৫০%। পাশাপাশি পুরুষ শ্রমিকদের চিত্রে দেখা যায়, ১৯৭৪ থেকে ১৯৮১ সাল পর্যন্ত ১৬.৬৭% প্রবৃদ্ধির হার নির্দেশ করে। বাংলাদেশের সমাজ ব্যবস্থায় মেয়েরা উপেক্ষিত শ্রেণীতেই চিহ্নিত। নিজের দেশেই তাদেরকে মনে করা হয় দ্বিতীয় শ্রেণীর নাগরিক যদিও মেয়েদের সংখ্যা জনসংখ্যার প্রায় অর্ধেক, তথাপি তাদেরকে সংখ্যালঘু বলে বিবেচনা করা হয়। শিক্ষিতের হারের দিক দিয়ে পুরুষ এবং মেয়েদের হার যথাক্রমে ৩১% ও ১০%। বাংলাদেশের শিল্পে পুরুষ শ্রমিক প্রতিদিন গড়ে ৮ ঘন্টা কাজ করলেও নারী শ্রমিক সাধারণতঃ ১৩-১৭ ঘন্টা কাজ করে।

বাংলাদেশের পোশাক শিল্পের ১০০ জন নারী শ্রমিকের উপরে পরিচালিত এক জরীপে দেখা গেছে, মেয়েরা সপ্তাহে ছ'দিন কাজ করে এবং তাদের প্রায় ৭৭.৩% দিনে নয় বা সাড়ে নয় ঘন্টা ধরে কাজ করে। জরীপ চালানো শ্রমিকদের প্রায় ৮০% বাধ্যগতভাবে বাড়তি (ওভারটাইম) কাজ করতে হয়। নারী শ্রমিকদের ৬৭.১১% এর বয়স ১৬-২০ বৎসরের মধ্যে এবং ৭৯.৮১% অবিবাহিতা। এসব নারী শ্রমিকের মজুরী অত্যন্ত কম। জরীপ ফলাফল থেকে দেখা গেছে তাদের গড় মাসিক বেতন ৬২০/- টাকা বা তারও কম।

৩। বাংলাদেশের পোশাক শিল্পের ঐতিহাসিক পটভূমি

বাংলাদেশে পোশাক শিল্পের পটভূমির কথা বলতে গেলে এর অতীত ইতিহাসের দিকে তাকানো দরকার। আধুনিক বস্ত্র বাণিজ্যে বাংলাদেশের আগমন বেশ বিলম্বে হলেও আজ হতে প্রায় দেড়শ বছর আগে বাংলাদেশের বস্ত্র শিল্প ছিল জগৎ জোড়া বিখ্যাত। ঢাকার মসলিনের গুণ এবং ঐতিহ্য ইউরোপ ও পর্তুগীজ ব্যবসায়ীদের এক সময় বিশেষ মনোযোগের বিষয় ছিল। পরবর্তী ওলন্দাজ, ফরাসী এবং বৃটিশ ব্যবসায়ীদের লালনারস দৃষ্টি পড়ে ছিল ঢাকা মসলিনের উপর। ভারত দখলের পরপরই বৃটিশরা প্রথম যে শিল্পটি বিনস্ট করে, তাহলো বস্ত্র শিল্প। কারণ এ শিল্পটি তখন বৃটেনের ইয়র্কশায়ারের বস্ত্র তাঁতীদের ভীতির কারণ হয়ে দেখা দেয়।

১৯৭৪-৮৪ সাল পর্যন্ত দেশের শিল্প উৎপাদন বেড়েছে মাত্র ৪২% এবং শুধু মাত্র একই সময় বস্ত্র শিল্পের ক্ষেত্রে উৎপাদন মাত্র ১১% বৃদ্ধি পেয়েছে। দেশ থেকে বর্তমান যা রপ্তানী হয়, তার তিনগুন বিদেশ থেকে আমদানী করতে হয়। দেশে বর্তমানে সরকারী ব্যয়ের ৪৫%

বিদেশী সাহায্যের উপর নির্ভরশীল। জাতীয় অর্থনৈতিক অবস্থার এমন একটি সময়ে পোশাক শিল্প প্রতিষ্ঠান গড়ে উঠে। বাংলাদেশে প্রথম পোশাক তৈরীর কারখানা স্থাপিত হয় ১৯৬০ সালের গোড়ার দিকে। স্বাধীনতার পূর্ব পর্যন্ত বাংলাদেশে মাত্র চারটি পোশাক তৈরীর কারখানা ছিল এবং এদের বাজারজাতকরণ প্রক্রিয়া দেশের অভ্যন্তরেই সীমাবদ্ধ ছিল।

রপ্তানী শিল্প প্রতিষ্ঠানের তৈরী পোশাক শিল্পের উল্লেখযোগ্য অবস্থান বেশী দিনের কথা নয়। ১৯৮২-৮৩ এবং ১৯৮৩-৮৪ সনে দেশে মোট ৮৮ থেকে ৯২ টি শিল্প ইউনিট ছিল। ১৯৮৩ সনের দিকে এই শিল্প ইউনিট সমূহের বৃদ্ধির গতি ছিল মন্থর। কিন্তু ১৯৮৪ সনের দিকে এসে এর উল্লেখযোগ্য বৃদ্ধি ঘটতে থাকে। কেবলমাত্র এ একটি বৎসরেই ৪৪৫ টি শিল্প ইউনিট প্রতিষ্ঠিত হয় কিন্তু ১৯৮৫ সনের দিকে এসে এর অবস্থা দাঁড়ায় ১৬৮টিতে। অবস্থা দেখে আমদানীকারক দেশগুলো বাংলাদেশের পোশাক শিল্পের উপর কোটা আরোপের পদক্ষেপ গ্রহণ করে। এমন একটি নাজুক অবস্থায় বাংলাদেশ সরকার আর নতুন কোন শিল্প ইউনিট গড়ার অনুমতি বন্ধ করে দেয়। এপ্রিল ১৯৮৭ নাগাদ বাংলাদেশ মোট পোশাক তৈরীর কারখানার সংখ্যা ৭৫০ এ এসে দাঁড়িয়েছে।

১৯৮৪ সাল পর্যন্ত সরকারীভাবে রেজিস্ট্রীকৃত পোশাক শিল্প প্রতিষ্ঠানের সংখ্যা ছিল ৫৪৭টি। তারমধ্যে ঢাকা মহানগরীতে ছিল ১১০টি, চট্টগ্রামে ৩৫টি, এবং দেশের অন্যান্য জেলায় ছিল ৪১টি শিল্প প্রতিষ্ঠান। আকার ও আয়তনের দিক দিয়ে বিভিন্ন পোশাক শিল্প প্রতিষ্ঠান এ ২০০ থেকে সর্বোচ্চ ৩,৫০০ পর্যন্ত শ্রমিক কাজ করে।

মার্কিন যুক্তরাষ্ট্রের জেবস্কার ও বেনিসার প্রভৃতি বড় ধরনের বহুজাতিক কর্পোরেশনের সরাসরি তত্ত্বাবধানে বাংলাদেশের পোশাক শিল্পের উৎপাদন ও রপ্তানী বাণিজ্য পরিচালিত ও নিয়ন্ত্রিত হচ্ছে। রাজনৈতিক কারণে অর্থাৎ ক্ষমতাসীন সরকার এবং দলের রাজনৈতিক পরিকল্পনার কারণে, আমাদের দেশে বহুজাতিক কর্পোরেশনগুলোকে বেশ গুরুত্ব দেয়া হচ্ছে। এবার বাংলাদেশের পোশাক শিল্পের ক্রমবিকাশের আন্তর্জাতিক রাজনৈতিক প্রেক্ষাপটে তলিয়ে দেখা যাক। ১৯৮৪-৮৫ সালের দিকে শ্রীলংকায় তামিল গেরিলাদের আকস্মিক আক্রমণের ফলে সে দেশের আর্থ-সামাজিক অবস্থার উপর যে প্রভাব ফেলে তারই ফলশ্রুতিতে উন্নত দেশগুলোর পক্ষে সস্তায় শ্রীলংকা থেকে তৈরী পোশাক আমদানী করা কষ্টকর হয়ে পড়ে। অর্থাৎ শ্রীলংকার আভ্যন্তরীণ রাজনীতি উন্নত দেশগুলোর বাজারের পক্ষে খুব একটা সুখকর ছিল না। ফলে বাংলাদেশের মত স্বল্প মজুরীর দেশে উন্নত দেশগুলো তাদের শ্রম বাজার খুঁজতে থাকে এবং তারই ফলশ্রুতিতে পোশাক শিল্পের বিফোরণ ঘটতে থাকে। শুধুমাত্র বাংলাদেশের স্বল্প মজুরীই নয়, এই সময়টিতে দক্ষিণ কোরিয়া, হংকং, তাইওয়ান এবং সিংগাপুর-এর তৈরীর পোশাকের উপর আন্তর্জাতিক কোটা আরোপের ফলে বাংলাদেশের তৈরী পোশাকের চাহিদা উন্নত দেশগুলোর বাজারে বৃদ্ধি পেতে থাকে। যেসব দেশে তৈরী পোশাক উৎপাদিত হয়ে থাকে সে সব দেশে মজুরী বৃদ্ধি পাওয়ার ফলে উন্নত

চৌধুরী : পোশাক শিল্পের রাজনৈতিক অর্থনীতি

দেশগুলো বাংলাদেশকে বাজার হিসাবে বেছে নেয়। অর্থাৎ বাংলাদেশে শিল্পায়নকে ত্বরান্বিত করার লক্ষ্যে পোশাক শিল্প গড়ে উঠেছে এমনটি ভাববার কোন অবকাশ থাকে না। আসলে ব্যাপারটি উন্নত দেশগুলোর শোষণ এবং রাজনীতির খেলা। সারণী-১ থেকে আমরা দেখতে পাই নয়টি দেশের প্রতি ঘন্টা মজুরীর মধ্যে বাংলাদেশের মজুরী সর্বনিম্ন এবং তার উপরেই শ্রীলংকা। কাজেই শ্রীলংকার রাজনৈতিক অবস্থা যখন উন্নত দেশগুলোর বাজার রাজনীতির অনুকূলে কাজ করছিল না ঠিক তখনই তারা অগ্রাধিকার ভিত্তিতে বাংলাদেশকে বেছে নেয়। যখন মার্কিন যুক্তরাষ্ট্রের প্রতি ঘন্টায় মজুরী ৭.৫৩ ডলার, সিংগাপুর ১.৬০, দক্ষিণ কোরিয়ায় ১.৫৩ ডলার, তাইওয়ানে ১.৪৩ ডলার, হংকংয়ে ১.৪০ ডলার, চীনে ৩.৭৫ ডলার, ভারতে ০.৬৬ ডলার এবং শ্রীলংকায় ০.৩৫ ডলার ঠিক তখন বাংলাদেশের প্রতি ঘন্টায় মজুরী ০.২৫ ডলার মাত্র। এথেকে সহজেই বোধগম্য যে, আন্তর্জাতিক শ্রম বাজারে বাংলাদেশের অবস্থানটি কোন পর্যায়ে রয়েছে।

আমরা সারণী-২ এর দিকে তাকালে দেখতে পাই বাংলাদেশে প্রতি ঘন্টায় মুজুরী হচ্ছে ০.২৫ ডলার। অন্যদিকে মার্কিন যুক্তরাষ্ট্রে একটি সাঁট তৈরী করিতে ১৪ মিনিট সময় লাগে অন্যদিকে বাংলাদেশে একটি সাঁট তৈরী করিতে সময় লাগে ২৫ মিনিট যা মার্কিন যুক্তরাষ্ট্রের তুলনায় ১১ মিনিট বেশী। আবার একটি সাঁট তৈরী করতে মার্কিন যুক্তরাষ্ট্রের মোট শ্রম মজুরীর প্রয়োজন হয় ১.৭৬ ডলার অথচ বাংলাদেশে সেই সাঁট তৈরী করতে মজুরী খরচ পড়ে ০.১০ ডলার। তাইতো উন্নত দেশগুলো বাংলাদেশের মতো অনুন্নত দেশগুলোকে তাদের শ্রম বাজার হিসাবে বেছে নেয়।

সারণী-১: তৈরী পোশাক রপ্তানীকারক দেশগুলোর তুলনামূলক মজুরী চিত্র (১৯৮১-৮২ হিসাবে)

দেশের নাম	ইউ এস ডলারে প্রতি ঘন্টায় মজুরী	মার্কিন যুক্তরাষ্ট্রের প্রতি ঘন্টায় মজুরীর হার
ইউ, এস, এ	৭.৫৩	১০০ (স্ট্যান্ডার্ড)
সিংগাপুর	১.৬০	২১
দক্ষিণ কোরিয়া	১.৫৩	২০
তাইওয়ান	১.৪৩	১৯
হংকং	১.৪০	১৯
চীন	০.৭৫	১০
ভারত	০.৬৬	৯
শ্রীলংকা	০.৩৫	৫
বাংলাদেশ	০.২৫	৩

সূত্র: ট্রেড এন্ড ইন্ডাস্ট্রিয়াল পলিসি রিফর্ম প্রোগ্রাম, এর দিল্লি, ইন্ডাস্ট্রিয়াল ইনভেস্টমেন্ট প্রমোশন, ইউনিট এন্ড ডিভেলপমেন্ট অব পোর্টেনশিয়াল এক্সপোর্ট প্রডাক্টস লাইন ইউনিট, পৃষ্ঠক নং-২, বাংলাদেশ সরকারের পরিকল্পনা কমিশন, জানুয়ারী-১৯৮৪।

সারণী-২ঃ একটি সার্ট তৈরীর (সি/এম) মজুরী ব্যয়ের তুলনামূলক চিত্র

দেশের নাম	ইউ, এস. ডলারে প্রতি ঘন্টায় মজুরী	প্রতি সার্টে মোট ব্যয়িত মিনিট	ইউ, এস, ডলারে প্রতি শার্টের মজুরী	ইউ,এস ডলারে
ইউ, এস, এ	৭.৫৩	১৪	১.৭৬	১০০
হংকং	১.৪০	১৯.৭৫	০.৪৬	২৬
দক্ষিণ কোরিয়া	১.৫৩	২০.৭৫	০.৫৩	৩০
শ্রীলংকা	০.৩৫	২৪	০.১৪	৮
বাংলাদেশ	০.২৫	২৫	০.১০	৬

সূত্রঃ সারণী-১ এর অনুরূপ।

নগর ভিত্তিক এই শিল্প প্রতিষ্ঠান গড়ে উঠার পেছনে যেসব কারণগুলো কাজ করেছে তার মধ্যে উল্লেখযোগ্য দিকগুলো নিম্নরূপঃ

ক) পোশাক শিল্পের কাঁচামালের শতকরা ১০০% একশ ভাগ একশ বিশ দিনের মধ্যেই ব্যাংক টু ব্যাংক এলসির মাধ্যমে আমদানী করতে হয়। কারণ এই একশ বিশ দিনের মধ্যেই এই কাঁচামাল দিয়ে উৎপাদিত তৈরী পোশাক আবার বিদেশে রপ্তানী করতে হয়। এই শিল্প যেমন একদিকে রপ্তানী ভিত্তিক অন্যদিকে দেখা যায় সমান ভাগে আমদানী ভিত্তিকও বটে। কারণ এ সময়ের মাঝে কাঁচামাল আমদানী এবং পোশাক তৈরী করে রপ্তানী করার জন্য যে ধরনের যোগাযোগ ব্যবস্থা এবং সুযোগ সুবিধা থাকার দরকার তা শহর অঞ্চল ছাড়া পাওয়া সম্ভব নয়। অন্যদিকে শহর অঞ্চলগুলোতে শ্রমিকের সমাগম বেশী দেখা যায়। তাই এই শিল্প প্রতিষ্ঠান ঢাকা এবং চট্টগ্রাম শহরেই বেশী গড়ে উঠছে।

খ) এই ১০০ ভাগ রপ্তানী ভিত্তিক শিল্প প্রতিষ্ঠান এ উৎপাদিত পোশাকের আমদানীকারকগণ বেশীর ভাগই শহর অঞ্চলে কাজ করতে অভ্যস্ত। ব্যবসাগত কারণে তাদের পক্ষে শহরের উৎপাদক এবং রপ্তানী কারকদের সাথে যোগাযোগ রক্ষাকরা সুবিধাজনক। এছাড়া আন্তর্জাতিক যোগাযোগ এবং বহু জাতিক যোগাযোগের জন্য শহর অঞ্চল উপযুক্ত বলেই এই শিল্প প্রতিষ্ঠান ঢাকা এবং চট্টগ্রাম শহরে অধিক মাওয়ায় গড়ে উঠে।

গ) পোশাক শিল্পে নিয়োজিত শ্রমিকদের শতকরা আশি ভাগ নারী, এইদিক দিয়া ঢাকা এবং চট্টগ্রাম শহরের আর্থ-সামাজিক অবস্থা শ্রমিক যোগানের ব্যাপারে অত্যন্ত সহায়ক এবং শহরঞ্চলে নারী শ্রমিকদের উপর ভিত্তি করেই মূলতঃ এ শিল্প প্রতিষ্ঠান গড়ে উঠে। অন্যান্য শিল্প প্রতিষ্ঠানের মত এই শিল্প প্রতিষ্ঠানের পরিবেশ দূষণ করার তেমন একটি সম্ভাবনা দেখা যায় না। তবে কারখানার অভ্যন্তরে শ্রমিকদের যান্ত্রিক এবং কাচামালের অব্যবহার্য অংশ ক্ষতি করে থাকে। যান্ত্রিক শব্দের ততটা প্রভাব নাই বলে আবাসিক অনাবাসিক বিভিন্ন এলাকায় ব্যাঙের ছাতার মত এই শিল্প প্রতিষ্ঠান গড়ে উঠছে।

ঘ) এই শিল্প প্রতিষ্ঠান প্রথমতঃ শ্রম ভিত্তিক এবং যোগাযোগ ভিত্তিক। এই শিল্প প্রতিষ্ঠানের জন্য দরকার দক্ষ শ্রমিক যাহা শহরাঞ্চল ছাড়া পাওয়া সম্ভব নয়। তাই কিছু কিছু ক্ষেত্রে যে প্রশিক্ষণের প্রয়োজন হয় তা একমাত্র ঢাকা এবং চট্টগ্রাম শহরেই দেওয়া সম্ভব।

ঙ) শেলাইয়ের কল এবং অন্যান্য যন্ত্র বিদ্যুৎ শক্তিছাড়া চালানো সম্ভব নয় বলেই এই শিল্প প্রতিষ্ঠান এমন এলাকাতেই গড়ে উঠেছে। যেহেতু রপ্তানী কারক দেশগুলোতে নির্দিষ্ট সময়ের মধ্যে পোশাক সরবরাহ করতে হয় সেহেতু বিদ্যুৎ শক্তি ব্যতীত এসব শিল্প প্রতিষ্ঠান চালানো সম্ভব হয় না।

চ) এই শিল্প প্রতিষ্ঠানের যারা উদ্যোগী তাদের অনেকেই বিভিন্নভাবে ব্যবসায়ী পুঞ্জির অধিকারী হয়েছে। এবং কম সময়ে খুব বেশী বিনিয়োগ করে বেশী মুনাফার দ্বারা তারা এই শিল্প গড়ে তুলছে। অর্থাৎ দীর্ঘ মেয়াদী কোন বিনিয়োগে ব্যবসায়ী শ্রেণী উৎসাহী নয়।

একশ ভাগ রপ্তানীযোগ্য এই শিল্প প্রতিষ্ঠানের অধিকাংশ কাজেই ব্যাংক এবং কাস্টমস অফিসের সাথে সংযুক্ত। সেহেতু অল্প সময়ে বেশী যোগাযোগের প্রয়োজন দেখা দেয়। বিশেষ করে কোটা বরাদ্দ, কোটা বিনিময় এবং কোটা হস্তান্তরের মত জটিল কাজ সবসময় এই শিল্পগুলোতে চলে থাকে। ফলে শহরাঞ্চলেই এই শিল্প প্রতিষ্ঠান গড়ে উঠতে শুরু করে।

প্রতিষ্ঠিত ইউনিটগুলোর মধ্যে কেবলমাএ ৪৫৭৮.৯৫ লক্ষ পোশাক তৈরী করতে পারে এমন শিল্প ইউনিটের সংখ্যা ৭০২টি। অপ্রতিষ্ঠিত বাকী ইউনিটের উৎপাদন ক্ষমতা হচ্ছে ৩১৯.৯৯ লক্ষ। মোট উৎপাদন ক্ষমতা দাঁড়ায় ৪৮৯৮.৯৪ লক্ষ। প্রতি মেশিনে প্রতি শিফটে প্রতি দিনে ৭০২ টি শিল্প ইউনিটের উৎপাদন ক্ষমতা দাঁড়ায় ২৬৫৬.৪৪ লক্ষ।

প্রতিষ্ঠিত শিল্প ইউনিটগুলোতে ৪৪২৭৪ সেট সেলাই মেশিন কাজ করছে। অন্যদিকে অপ্রতিষ্ঠিত শিল্প ইউনিটগুলো ৫৪৫ সেট সেলাই মেশিন বিদেশ থেকে আমদানী করেছে। লক্ষণীয় বিষয় যে সত্যিকার উৎপাদন ক্ষমতা বর্তমান কার্যকর উৎপাদন ক্ষমতার তুলনায় অনেক বেশী। এদিক দিয়ে বিবেচনা করলে দেখা যায় মেশিন উৎপাদন ক্ষমতার বেশীর ভাগই অব্যবহৃত অবস্থায় পড়ে থাকছে। যদিও ৮ ঘন্টার অধিক কাজ অধিকাংশ ফ্যাক্টরীগুলোতে চলছে এবং শুক্রবার দিন পর্যন্ত কাজ করা হয়। তার পরেও দেখা যায় মেশিনের উৎপাদন ক্ষমতা পুরোপুরি কাজে লাগানো যাচ্ছেনা। রপ্তানী বাড়িয়ে এবং পাশাপাশি কর্ম সংস্থানের আরো বৃদ্ধি ঘটিয়ে মেশিনের উৎপাদন ক্ষমতাকে কাজে লাগানো যায়। বাংলাদেশের তৈরী পোশাক প্রতি বৎসর ৫,৫৮০ মিলিয়ন মার্কিন ডলার অর্জন করছে। শিল্প সেক্টরের অন্য কোন খাত এত দ্রুত এত বেশী বৈদেশিক মুদ্রা অর্জন করতে সক্ষম হয়নি। ১৯৮৬-৮৭ সালে প্রক্ষেপিত পোশাক শিল্পের প্রবৃদ্ধি হার বৃদ্ধি পাওয়ার কারণ হচ্ছে মূলতঃ সরকারী উৎসাহ অর্থাৎ রপ্তানী নীতিমালা। রপ্তানী উন্নয়ন ব্যুরো কর্তৃক বাংলাদেশে তৈরী পোশাকের উৎপাদন এবং রপ্তানীকারকদের যে রপ্তানী নীতিমালা এবং উৎসাহ প্রদান করছে তারই ফলশ্রুতিতে আশা করা হচ্ছে যে পোশাক শিল্পের প্রবৃদ্ধি হার দ্রুত বেড়ে যাবে। রপ্তানী নীতিমালার

দূর্বলতার দিকটি হলো এইযে, প্রাথমিক দ্রব্যের রপ্তানীতে উৎসাহ না দেখিয়ে দ্বিতীয় ক্যাটাগরীর পণ্য দ্রব্যের রপ্তানীতে সরকার সবচেয়ে বেশী উৎসাহ দেখিয়েছে। এখানে উল্লেখ্য যে, উন্নয়ন এবং শিল্পায়নের লক্ষ্যে বাংলাদেশ সরকার “রপ্তানী শিল্পায়ন মডেল” অনুমোদন করার পর, সরকারীভাবে এই মডেলকে বিভিন্ন নীতিমালা দিয়ে সহযোগিতা দেওয়া হচ্ছে। ১৯৮৬ সালের জুলাই মাসে বাংলাদেশ সরকার কর্তৃক পোশাক শিল্পে যে রপ্তানী উৎসাহ প্রদান করেছে তাতে আশা করা হচ্ছে, ১৯৮৬-৮৭ তে পোশাক শিল্পের প্রবৃদ্ধির হার ১৯৮৫-৮৬ সালের তুলনায় অনেক বৃদ্ধি পাবে। একটি কথা এখানে উল্লেখ করা একান্ত প্রয়োজন, সরকার যতই রপ্তানী উৎসাহ দেয়না কেন যতক্ষণ পর্যন্ত না আন্তর্জাতিক বাজার নিজেদের ক্ষমতার মাঝে রাখতে না পারছে ততক্ষণ পর্যন্ত বাংলাদেশের পোশাক শিল্পের প্রবৃদ্ধির কোন প্রকার লক্ষণ দেখা যাবে না। উদাহরণস্বরূপ যুক্তরাষ্ট্র কর্তৃক আরোপিত নয়া ব্যবস্থা এখানে স্বরণ করা যেতে পারে। ১৯৮৬ সালে সরকার যে রপ্তানী উৎসাহের ঘোষণা দিয়েছিলেন, তার লক্ষ্য ছিল মূলতঃ দুটো। প্রথমতঃ অধিক বৈদেশিক মুদ্রা অর্জনের লক্ষ্যে তৈরী পোশাক শিল্প সেক্টরকে আরো বেশী বাড়িয়ে তোলা এবং পশ্চাদমুখী সংযোগের মাধ্যমে পাশাপাশি সহযোগী শিল্প ইউনিটগুলোকে চাংগা করে তোলা।

আমদানীকৃত কাপড় ব্যবহার না করার জন্য অর্থাৎ যারা শতকরা ১০০ভাগ কাপড় স্থানীয় প্রস্তুতকারকদের কাছ থেকে সংগহ করবেন তাদের জন্য সরকার মাত্র শতকরা ৭০ ভাগ একা পি বি বরাদ্দ করেছেন। অন্যদিকে আমদানীকারকদের জন্য শতকরা ৪০ ভাগ ট্যাক্স ধার্য করেছেন। দেশীয় কাপড় ব্যবহার করে যে শিল্প ইউনিট তৈরী পোশাক রপ্তানী করে তাদের প্রত্যেকেই শতকরা ৭০ ভাগ রপ্তানী উন্নয়ন বেনিফিট পেয়ে থাকে। আর যে সকল শিল্প ইউনিট একই সাথে দেশীয় কাপড় এবং রপ্তানীযোগ্য তৈরী পোশাক উৎপাদন করে থাকে তারা একই সাথে ১৭০% রপ্তানী উন্নয়ন বেনিফিট পেয়ে থাকে। যে সব গার্মেন্টস ইন্ডাস্ট্রি রপ্তানীযোগ্য পোশাক উৎপাদন করে তাদের প্রত্যেককে প্রতিটি ডিজাইনের জন্য দু’টি করে নমুনা করমুক্তভাবে আমদানী করার জন্য সরকারী অনুমোদনের ব্যবস্থা করা হয়েছে।

দেশীয় কাপড় ব্যবহার এবং রপ্তানীযোগ্য তৈরী পোশাক উৎপাদন বাড়ানোর লক্ষ্যে সরকার নগদ সহযোগীতাকে শতকরা ১৫ ভাগ ‘এফ ও বি’ রপ্তানী মূল্য ধার্য করেছেন। বিশেষ করে এই সুবিধা ভোগ করছেন সেইসব শিল্প ইউনিট যাদের কোন বভেড ওয়ার হাউজ নেই। যেসব শিল্প প্রতিষ্ঠান দেশীয় কাপড় ব্যবহার করে পোশাক তৈরী করবে তাদের প্রত্যেককেই শতকরা ১০০ ভাগ কোটা বরাদ্দের বিষয় সরকার অনুমোদন করেছেন। গার্মেন্টস ইন্ডাস্ট্রিগুলো যাতে করে দেশীয় কাপড়ের ব্যবহার বাড়াতে পারে তার জন্যই এই সুবিধার ব্যবস্থা করা হয়েছে।

১৯৮৬-৮৭ সালের রপ্তানী নীতিতে বলা হয়েছে পোশাক তৈরীতে আরো অধিক পরিমাণ মূল্য সংযোজন করার লক্ষ্যে যে কোন সহযোগী শিল্প ইউনিট গড়ে তোলার অধিকার

চৌধুরী : পোশাক শিল্পের রাজনৈতিক অর্থনীতি

এক্সিমারভুক্ত থাকবে। প্রয়োজনবোধে আরও সহজভাবে কাঁচামাল হিসাবে বাহিরের কাপড় ব্যবহারের জন্য প্রয়োজনবোধে আরোও সক্রিয় আমদানী নীতি প্রনয়ন করা যেতে পারে। তবে অত্যন্ত দুঃখের বিষয় যে, এতগুলো অর্থনীতিক এবং ব্যবসায়িক উৎসাহ থাকার ফলেও আমাদের দেশের গার্মেন্ট ইন্ডাস্ট্রিগুলোতে বাহিরের কাপড় ব্যবহারের মাত্রা কমেতো নাই-ই বরং বেড়ে গিয়েছে। বাংলাদেশ বস্ত্র শিল্পগুলোর সাম্প্রতিক উৎপাদন মাএা লক্ষ্য করলেই ব্যাপারটি বোধগম্য হওয়া সহজ।

৪। রপ্তানীমুখী শিল্পায়ন, বহুজাতিক কর্পোরেশন,

রপ্তানী প্রক্রিয়াজাতরন এলাকা ও পোশাক শিল্পঃ

মুক্ত বাণিজ্য এলাকা ও রপ্তানী প্রক্রিয়াজাতকরণ এলাকা হচ্ছে একটি দেশে বহুজাতিক সংস্থার ঘাটি প্রতিষ্ঠার প্রাথমিক ভিত্তি। এ ঘাটি প্রতিষ্ঠার জন্য রাষ্ট্র থেকে ঐ সংস্থাগুলোর যে সব শর্ত পূরণ করতে হয় বিদেশী মুদ্রা বিনিময় হারের উপর নিয়ন্ত্রণ প্রত্যাহার, অসীম মুনাফা সৃষ্টির নিশ্চয়তা, দীর্ঘ কর বিরতি, সহজ শর্তে ঋণ, ধর্মঘট বিরোধী নির্যাতনমূলক শ্রম আইন, শতকরা ১০০ ভাগ বিদেশী মালিকানা (কখনো কখনো শর্তসাপেক্ষ যৌথ মালিকানা) প্রভৃতি। এই শর্তগুলোর মধ্যে সস্তাশ্রম, ধর্মঘট বিরোধী শ্রম আইন বিশেষভাবে উল্লেখযোগ্য। উত্তর-পূর্ব এশিয়া এবং দক্ষিণ এশিয়ার বিভিন্ন সস্তা শ্রমের দেশগুলো এজন্য বহুজাতিক সংস্থাগুলোর স্বর্গ। এইসব দেশগুলোতে তাদের মুনাফা হয় সর্বোচ্চ। অনুন্নত বিশ্বের উপর সাম্রাজ্যবাদের সামগ্রিক নিয়ন্ত্রণ বজায় রাখার জন্য বহুজাতিক সংস্থাগুলো এসব দেশে স্বাধীন প্রযুক্তিগত উন্নয়নে সব সময়েই প্রতিবন্ধকতা সৃষ্টি করে। বিভিন্ন পেটেন্ট কিনে এরা ফেলে রাখে ও নষ্ট করে দেয় এবং বিদেশী প্রযুক্তি আমদানীর পরামর্শ দেয়। এইভাবে ১৯৬৮ সালে শিল্পোন্নত দেশ গুলোর থেকে প্রযুক্তি আমদানীর জন্য উন্নয়নশীল দেশগুলোকে ১৫০ কোটি ডলার ব্যয় করতে হয়েছে। ১৯৭০ সালে এর পরিমাণ হয়েছে ৭০০ কোটি ডলার। বর্তমানে ২০০০ কোটি ডলারের উপরে দাঁড়িয়েছে। অথচ এত ব্যয় করেও এই প্রযুক্তি হস্তান্তরের প্রক্রিয়াকে ত্বরান্বিত করা যায়নি। তার উপর যে প্রযুক্তি হস্তান্তর করা হয়, তা সংশ্লিষ্ট দেশের পক্ষে একান্ত অনুপোযোগী। ফলে শিল্পে উৎপাদনের উন্নতি তো দূরের কথা অবনতিই ঘটলো, নির্ভরতা বাড়ালো এবং কোটি কোটি ডলারের বৈদেশিক মুদ্রা জলে গেল। এই প্রসংগে ঐতিহাসিক ব্যাভটি কমিশনের "নর্থ- সাউথ প্রোগ্রাম ফর সারভাইভাল" শীর্ষক রিপোর্টে সমাধান বাণী উচ্চারিত হয়েছে। সেখানে বহুজাতি সংস্থা থেকে ধার করা প্রযুক্তির আর্থ-সামাজিক ও রাজনৈতিক সমস্যারত ভয়াবহতা সম্পর্কে তৃতীয় বিশ্বকে সচেতন করে দিয়ে নিজেদের অর্থনৈতিক বাস্তবতার নিরিখে প্রযুক্তিগত সহযোগিতা প্রতিষ্ঠার কর্মসূচী দেয়া হয়েছে।

বহুজাতিক সংস্থা মূলতঃ ব্যক্তিমালিকানাধীন প্রধান উদ্দেশ্য মুনাফা সর্বাধিকীকরণ। বিদেশের মাটিতে এর অস্তিত্বের জন্য প্রয়োজন শ্রেণী বিন্যাস, সমতা নয়। প্রয়োজনে দেশীয় সরকারের বিভিন্ন খুঁটির সাথে গোপন যোগাযোগের মাধ্যমে তাদের বাজার এবং উৎপাদন ঝামেলা ঝুকিমুক্ত রাখা এবং এই উৎপাদনে যে সামান্য সুফল পাওয়া যাবে তার বৈষম্যমূলক বন্টন না হলে তাদের উৎপাদিত দ্রব্যের বাজার পাওয়া মুশকিল হবে। প্রশ্ন উঠতে পারে এসব উপাদান তৃতীয় বিশ্বের প্রায় সব দেশে থাকা সত্ত্বেও এশিয়ার গুটি কয়েক দেশে বহুজাতিক কর্পোরেশনের প্রাধান্য বাড়লো কেন? দীপক নায়ার [১] মনে করেন বিশেষ রাজনৈতিক বন্ধন ছাড়াও দুটো প্রধান বিষয় হয়ত এজন্য দায়ীঃ

ক) এসব দেশের শ্রমিকদের মুজুরী অপেক্ষাকৃত কম ছিল।

খ) শ্রমিকদের দমিয়ে রাখার ব্যাপারে এসব দেশের সরকার অগ্রণী ভূমিকা পালন করেছে এবং করে।

নায়ার এ প্রসংগে, এ অঞ্চলের কর্মরত বেশ কিছু বহুজাতিক কর্পোরেশন এর কর্মকর্তাদের বিবৃতি উল্লেখ করেছেন।

- ১) “আমরা এমন একটা জায়গা চাইছিলাম যার এক প্রান্তে থাকবে গন-চীন এবং অন্য প্রান্তে থাকবে মার্কিন নৌবহর”।
- ২) “আমরা খুব সহজেই সামগ্রী এবং মানুষ আনা নেয়া করতে পারি তেমন জায়গা চাই”।
- ৩) “শ্রমিক সংগঠনগুলোকে বাগে আনতে সক্ষম যেসব দেশের সরকার, সেসব দেশেই কেবল আমরা পা দেই”।

ব্যক্তিগত খাতে রপ্তানী বাড়তে হলে সরকারকে বেশ কিছু সুবিধা দিতে হবে। ব্যাংক ঋন, কারিগরী প্রযুক্তি, বিদেশী বাজার এবং উৎপাদনের মান বাড়ানোর জন্য যৌথ মালিকানাধীন বিদেশী বিনিয়োগ উল্লেখযোগ্য ভূমিকা পালন করতে পারে। গ্যাস, ইলেকট্রনিক, চামরা, ফল ও তরিতরকারী প্রক্রিয়াজাতকরণের জন্য বিদেশী বিনিয়োগকারীরা শুধুমাএ যে পুঁজি দিতে পারেন তাই নয়, তারা কারিগরী প্রযুক্তিও দিতে পারে। এবং বিদেশে আমাদের রপ্তানী দ্রব্যের বাজারজাত করতে পারে। বিদেশী বিনিয়োগ নিরাপত্তা আইন, চট্টগ্রাম, ঢাকা ও খুলনায় রপ্তানী প্রক্রিয়াজাতকরণ এলাকা স্থাপনের ফলে এই পরিকল্পনা বিদেশী ব্যক্তিমালিকানাধীন বিনিয়োগ এর সুযোগ যথেষ্ট বৃদ্ধি পাবে। [২;২২].

“যেসব নীতিমালা নেয়া হয়েছে সেগুলোর একটা গুরুত্বপূর্ণ লক্ষ্য হচ্ছে ব্যক্তিমালিকানাধীন বিনিয়োগকে আকর্ষণ করা। বিজাতীয়করণ নীতি ও মূলতঃ ব্যক্তিমালিকানাধীন খাতকে

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অগ্রাধিকার দেয়ার লক্ষ্যেই নেয়া হয়েছে। শুষ্কমুক্ত রপ্তানী প্রক্রিয়াজাতকরণ এলাকা গড়ে তোলার পেছনেও ব্যক্তিমালিকানাধীন বিনিয়োগকে (বিদেশী বিনিয়োগকারীদের সাথে যৌথ মালিকানায় অথবা এককভাবে) অধিকতর সুযোগ করে দেয়াই হচ্ছে মুখ্য উদ্দেশ্য” [২;৮]

“রপ্তানীমুখী শিল্প স্থাপনের সব সুযোগই গ্রহন করার চেষ্টা করা হবে। প্রয়োজনে বিদেশী পুঁজিও আমন্ত্রণ করা হবে” [২;৮]

“যৌথ মালিকানাধীন উদ্যোগে বিদেশী ব্যক্তিমালিকানাধীন বিনিয়োগকে উৎসাহ দেয়া হবে। বিশেষ করে যেসব কাঁচামাল প্রক্রিয়াজাতকরণ প্রয়োজন করতে বিদেশী প্রযুক্তির প্রয়োজন এবং যেসব দ্রব্যের বিদেশী বাজারজাতকরণ প্রয়োজন সে সব উদ্যোগ বিশেষ উৎসাহ পাবে”। [২;১৫]

১৮৪০ সালে এদেশে প্রথম বৃটিশরা চা বাগান প্রতিষ্ঠার মাধ্যমে বহুজাতিক তৎপরতা শুরু করে। চা বাগান থেকে শুরু করে পেট্রোলিয়াম, ঔষধ উৎপাদন, সাধারণ রাসায়নিক ব্যবসা, চামড়া, বিদ্যুৎ যন্ত্রপাতি উৎপাদন, আসবাবপত্র, ব্যাংকিং ইয়ে মালটিন্যাশনাল কর্পোরেশন বাংলাদেশের পোশাক শিল্পে সরাসরি কাজ করছে। কখনো বা একক মালিকানার্থে, কখনোও বা যৌথ উদ্যোগে এ ব্যবসা চলছে। ১৯৭২ থেকে ১৯৮২ সাল পর্যন্ত পোশাক শিল্প প্রতিষ্ঠানের সংখ্যা ছিল যৌথ উদ্যোগে প্রতিষ্ঠিত শিল্প ইউনিট গুলোর মাঝে তৃতীয়। এই একই সময়ে গভীর সামুদ্রিক মাছ প্রক্রিয়াজাতকরণ শিল্পের সংখ্যা ছিল ১৮টি এবং রাসায়নিক ঔষধ শিল্প প্রতিষ্ঠানের সংখ্যা ছিল ১৭টি। ১৯৮৭ সালের মার্চ মাস নাগাদ এদেশে কেবলমাত্র বহুজাতিক সংস্থা এবং যৌথ উদ্যোগে নিয়ন্ত্রিত পোশাক শিল্প প্রতিষ্ঠানের সংখ্যা হচ্ছে মোট ২২টি। তার মাঝে ১৯৭৯ সনে অনুমোদন পেয়েছে ৬টি, ১৯৮০ সনে অনুমোদন পেয়েছে ১টি, ১৯৮১ সনে অনুমোদন পেয়েছে ১টি, ১৯৮২ সনে অনুমোদন পেয়েছে ৫টি, ১৯৮৩ সনে ১টি ১৯৮৪ সনে ৬টি, ১৯৮৫ সনে ১টি, এবং ১৯৮৬ সনে ১টি। উল্লেখ্য যে, ১৯৮৪ সনে বাংলাদেশ সবচেয়ে বেশী পোশাক রপ্তানী করেছিল যুক্তরাষ্ট্রে এবং ১৯৮৪ সনেই সর্বোচ্চ সংখ্যক পোশাকে শিল্প ইউনিট প্রতিষ্ঠিত হয়েছে। যৌথ উদ্যোগে প্রতিষ্ঠিত শিল্প ইউনিটগুলোর জন্য আগত দেশের মাঝে উপস্থিতি দেখা যায় সিংগাপুর, ভারত, কোরিয়া, যুক্তরাষ্ট্র, ম্যাকাউ, হংকং, সুইজারল্যান্ড, বেলজিয়াম, ইত্যাদি। যৌথ উদ্যোগে প্রতিষ্ঠিত শিল্প প্রতিষ্ঠানগুলোর ইকুইটি শেয়ার চিত্র নিম্নরূপ (সারণী-৩)।

বৈদেশিক ৫১% দেশীয় ৪৯%। ইকুইটি শেয়ার চিত্র থেকে দেখা যায়, হংকং এবং মার্কিন যুক্তরাষ্ট্রের মাত্রা সর্বোচ্চ। ১৯৭২ থেকে ১৯৮২ সাল পর্যন্ত বাংলাদেশের পোশাক শিল্পের বহুজাতিক সংস্থাগুলোর অর্থনৈতিক ভূমিকা বিশ্লেষণ করলে দেখা যায়, বিনিয়োগকৃত টাকার (লক্ষ টাকা) স্থানীয় মূল্যমান ৭৮৬.৭৫ লক্ষ টাকা এবং বৈদেশিক মূল্যমান ৮৯৩.২৯৬ লক্ষ

টাকা অর্থাৎ মোট ১৬৭৯.৮৬৬ লক্ষ টাকা। উপরোক্ত আলোচনা থেকে আমরা বুঝিতে পারি যে, বাংলাদেশের পোশাক শিল্পের বহুজাতিক সংস্থাগুলোর সরাসরি উপস্থিতি একটি উল্লেখযোগ্য দিক। বাংলাদেশের পোশাক শিল্পের বহুজাতিক সংস্থাগুলো শুধু ব্যবসায়িক ভূমিকাই রাখছে না, পাশাপাশি নীতি প্রণয়নেও প্রভাব খাটিয়ে থাকে। যৌথ উদ্যোগে প্রতিষ্ঠিত পোশাক শিল্প প্রতিষ্ঠানে দেশ ভিত্তিক অবস্থান-সিংগাপুর ৩টি, ভারত ২টি, কোরিয়া ৫টি, যুক্তরাষ্ট্র ৩টি, ম্যাকাউ ১টি, হংকং ৪টি, সুইজারল্যান্ড ২টি, বেলজিয়াম ২টি।

সারণী-৩ : বহুজাতিক সংস্থা এবং যৌথ উদ্যোগে প্রতিষ্ঠিত পোশাক শিল্প প্রতিষ্ঠানসমূহের ইক্যুইটি শেয়ার

ক্রঃ নং	শিল্প প্রতিষ্ঠানের নাম	ইক্যুইটি শেয়ার		বিনিয়োগকারী দেশ
		বৈদেশিক	দেশীয়	
১।	বি এস গার্মেন্টস	৫০%	৫০%	সিংগাপুর
২।	ইস্টার্ন ট্রেডিং কর্পোরেশন	৫০%	৫০%	"
৩।	মেসার্স হোসাইন গার্মেন্টস (প্রাঃ) লিঃ	৫১%	৪৯%	ভারত
৪।	কাসেম সুয়েটার কোং লিঃ	৫০%	৫০%	কোরিয়া
৫।	পলিট্যাক ফ্যাব্রিক্স লিঃ	৬৬%	৩৪%	মার্কিন যুক্তরাষ্ট্র
৬।	পলিট্যাক্স ফ্যাব্রিক্স লিঃ	৫১%	৪৯%	সিংগাপুর
৭।	আমবি হোমহন এক্সপোর্টস লিঃ	৫১%	৪৯%	ভারত
৮।	বেটেক্স নিটারস	৫০%	৫০%	ম্যাকাউ
৯।	শিয়ান বাংলাদেশ লিঃ	৬১%	৩৯%	কোরিয়া
১০।	দুসাং (বাংলাদেশ) লিঃ	১০০%	৩০%	হংকং
১১।	হ্যাপী বি লিঃ	৫১%	৪৯%	মার্কিন যুক্তরাষ্ট্র
১২।	মেসার্স আরলি কটেজ	২৫%	৭৫%	সুইজারল্যান্ড
১৩।	সানট্যাক্স ম্যানুফ্যাকচারিং লিঃ	৫১%	৪৯%	হংকং
১৪।	ল্যামকো লিঃ	৫১%	৪৯%	কোরিয়া
১৫।	দি কন্টিনেন্টাল গার্মেন্ট (বাং) লিঃ	৫১%	৪৯%	কোরিয়া
১৬।	বেস্ট গার্মেন্টস লিঃ	৫১%	৪৯%	হংকং
১৭।	টাইডো বাংলাদেশ লিঃ	৫১%	৪৯%	কোরিয়া
১৮।	এ্যাপারেলস লিঃ	৫১%	৪৯%	সুইজারল্যান্ড
১৯।	গোহেনিটিং (বাংলাদেশ) লিঃ	৫১%	৪৯%	বেলজিয়াম
২০।	সেইফটি গ্লোব লিঃ	৫১%	৪৯%	বেলজিয়াম
২১।	নিউইয়র্ক গ্লোবস কোঃ লিঃ	৫১%	৪৯%	যুক্তরাষ্ট্র ম্যানুফ্যাকচারিং
২২।	চেয়াং হিংগ সুয়েটার বাংলাদেশ লিঃ	৫১%	৪৯%	হংকং

চৌধুরী : পোশাক শিল্পের রাজনৈতিক অর্থনীতি

সূত্র: শিল্প মন্ত্রণালয়, ঢাকা।

বহুজাতিক কর্পোরেশন পূজিবাদি লগ্নীপূজির একমাত্র সেবাদাস এবং স্থানীয় ভিত্তিতে এ ধরনের ব্যবসায়িক পূজির বিকাশের অন্যতম বাহক। আন্তর্জাতিক পূজি বাজেট প্রেক্ষাপটে বিবেচনা করলে বাংলাদেশ পূজিবাদী লগ্নীপূজির আসার পেছনে যে সকল কারণ কার্যকর রয়েছে তা হলো:

- নিজ দেশে প্রতিযোগিতামূলক বাজারের তুলনায় একটি অনুন্নত দেশ হিসাবে বাংলাদেশকে বেছে নিয়ে তার বাজার অনুপ্রবেশ করা এবং দেশীয় বাজারকে বিকশিত হতে না দিয়ে আন্তর্জাতিক বাজারকে প্রসারিত করা।
- বাংলাদেশ কাঁচামাল এবং শ্রমিক শক্তি অপেক্ষাকৃত সস্তা বলে এবং শ্রমিক শ্রেণী রাজনৈতিক ভাবে সচেতন নয় বলেই এসব বহুজাতিক কর্পোরেশনগুলো এদেশকে পছন্দ করেছে আরও অধিকভাবে।
- পূজি সংকটের দোহাই দিয়ে আমাদের দেশের পূজিবাদ নির্ভর দালাল সামরিক সরকারেরা এবং সামরিক এবং বেসামরিক আমলাতন্ত্রের যোগসাজশে সৃষ্টি সরকার, বহুজাতিক কর্পোরেশনকে শুদ্ধ মওকুফ, ডিউটি মওকুফ ও মুনাফা ফেরতে স্বাধীনতা দিয়ে থাকে। এমনকি আইন পাশ করেও বিদেশী পূজির নিশ্চয়তা বিধান করা হয়েছে।

উন্নয়নশীল দেশগুলোর যে কয়েকটিতে রপ্তানী প্রক্রিয়াজাতকরণ এলাকা প্রতিষ্ঠিত হয়েছে সেইসব দেশের অর্থনৈতিক অবস্থাকে বিবেচনায় রেখে বাংলাদেশ সরকার ১৯৭৬ সালে রপ্তানী প্রক্রিয়াজাতকরণ এলাকা গড়ে তোলার আশা ব্যক্ত করেন। এই প্রক্রিয়াজাতকরণ এলাকা গড়ে তুলতে গিয়ে ইউনিডো বাংলাদেশকে বিশেষজ্ঞ সহায়তা দান করেন। ১৯৭৮ সালে চট্টগ্রামের পতেংগায়, ঢাকার আন্তর্জাতিক বিমানবন্দরের নিকট কুর্মিটোলায়, এবং খুলনার চালনা বন্দরের কাছে তিনটি রপ্তানী প্রক্রিয়াজাতকরণ এলাকা গড়ে তোলার পরিকল্পনা এবং রূপ রেখা গঠন করা হয়। সরকার ১৯৮০ সনে বাংলাদেশ রপ্তানী প্রক্রিয়াজাতকরণ এলাকা কর্তৃপক্ষ এক্ট ১৯৮০ প্রণয়ন করেন।

রপ্তানী প্রক্রিয়াজাতকরণ এলাকা যে সকল উদ্দেশ্যে রপ্তানী প্রক্রিয়াজাতকরণ এলাকা গড়ে তোলা হয় তা হলো:

- ১। বৈদেশিক আয়ের সূত্রকে ত্বরান্বিত করা।
- ২। উৎপাদনক্ষম কর্ম সংস্থানের ব্যবস্থা করা।
- ৩। বৈদেশিক পূজির বিনিয়োগের জন্য আকৃষ্ট করা।

- ৪। প্রযুক্তি হস্তান্তরের মাধ্যমে উন্নত মানের আয়ত্ত কর।
- ৫। দক্ষ শ্রমিক এবং সুস্থ গড়ে তোলা।
- ৬। রপ্তানী মাত্রা বাড়িয়ে আন্তর্জাতিক বাজারে নিজেদের অবস্থানকে প্রসারিত করা এবং দেশের শিল্পায়নকে দ্রুত বৃদ্ধি করা।

স্বাধীনতার পর থেকে ১৯৮৬ পর্যন্ত বাংলাদেশে যৌথ মালিকানায় আভ্যন্তরীণ ট্যারিফ এলাকায় অনুমোদনকৃত ইউনিটসমূহের মাঝে দেখা যায় মোট অনুমোদনপ্রাপ্ত ইউনিটের সংখ্যা ১১১, এর মাঝে উৎপাদনের কাজে নিয়োজিত ইউনিট সংখ্যা ৫৩, যত সংখ্যক ইউনিটের জন্য বিদেশ থেকে যন্ত্রপাতি এসেছে বা এল,সি খোলা হয়েছে তার সংখ্যা ৭, নির্মাণাধীন ইউনিটের সংখ্যা ৪০টি এবং বাতিলকৃত ইউনিটের সংখ্যা ১১টি। বাংলাদেশে রপ্তানী প্রক্রিয়াজাতকরণ এলাকা কর্তৃপক্ষ কর্তৃক অনুমোদনকৃত নভেম্বর ১৯৮৬ পর্যন্ত চট্টগ্রাম এলাকায় এ শিল্প ইউনিট প্রতিষ্ঠার অগ্রগতি পর্যালোচনা প্রতিবেদনে দেখা যায় অনুমোদনপ্রাপ্ত মোট ইউনিটের সংখ্যা ৩৩ এবং উৎপাদনে নিয়োজিত ইউনিটের সংখ্যা মাত্র ১৫ টি।

ধরন ভিত্তিক শিল্প প্রতিষ্ঠানের সংখ্যা বিশ্লেষণ করলে দেখা যায় ধরন 'এ' (১০০% বিদেশী (৬টি এবং ধরন 'সি' (১০০% বাংলাদেশী) ১১টি রয়েছে। ক্যাটাগরী ভিত্তিক শিল্প প্রতিষ্ঠানের সংখ্যা বিশ্লেষণ করলে দেখা যায় তৈরী পোশাক শিল্প প্রতিষ্ঠানের সংখ্যা ৬টি এবং ট্যারি টাওয়ার শিল্প ইউনিটের সংখ্যা ৭টি। উল্লেখ্য যে, তৈরী শিল্প প্রতিষ্ঠানের সংখ্যাই বেশী। অনুমোদকৃত এবং উৎপাদনে নিয়োজিত শিল্প ইউনিটসমূহের সেক্টর বিশ্লেষণ করলে দেখা যায়, মোট ৯টি গার্মেন্টস ইণ্ডাস্ট্রিতে ৭,৫২১ হাজার ইউ,এস, ডলার বিনিয়োগের অনুমোদন রয়েছে এবং ৪,৯৭৬ কর্মী নিয়োগের অনুমোদন রয়েছে। কিন্তু উৎপাদন করছে এমন চিত্র বিশ্লেষণ করলে দেখা যায় মোট টি গার্মেন্টস ইণ্ডাস্ট্রি উৎপাদনে নিয়োজিত এবং বিনিয়োগকৃত পুঞ্জি পরিমাণ ২,৭৮০ হাজার ইউ,এস ডলার এবং মোট কর্মী নিয়োগের মাত্রা ২,২৪৪। মোট ১১টি ইউনিটে (বিভিন্ন প্রকারের) মোট কর্মী সংখ্যা ২,৭৭৭ ছিল। উৎপাদন নিয়োজিত শিল্প ইউনিটসমূহের নাম, দেশগত উৎপত্তি, কর্মী নিয়োগ, বিনিয়োগ এবং রপ্তানী পরিমাণ চালচিত্র বিশ্লেষণ করলে দেখা যায়, হংকং-এর শেয়ার একক মালিকানায় মোট ৪টি শিল্প প্রতিষ্ঠান, মার্কিন যুক্তরাষ্ট্রের ৩টি শিল্প প্রতিষ্ঠান, জাপানের ৯টি, পাকিস্তানের ২টি, সিঙ্গাপুরের ১টি এবং বাংলাদেশের ৩টি শিল্প প্রতিষ্ঠান রয়েছে। ধরনগত দিক দিয়ে 'এ' ক্যাটাগরীর শিল্প প্রতিষ্ঠানের মোট সংখ্যা হচ্ছে ৫টি, 'বি' ক্যাটাগরীর শিল্প প্রতিষ্ঠানের সংখ্যা হচ্ছে ৭টি এবং 'সি' ক্যাটাগরীর সংখ্যা হচ্ছে ৩টি। এই ১৫টি শিল্প প্রতিষ্ঠানের মোট কর্মী সংখ্যা হচ্ছে ২,৭৭৭ এবং বিনিয়োগকৃত পুঞ্জির পরিমাণ হচ্ছে ৭,৩০৬ হাজার ইউ,এস, ডলার। উৎপাদনে নিয়োজিত ইউনিটসমূহ কর্তৃক আমদানীকৃত কাঁচামাল ও প্যাকিং ম্যাটারিয়ালে দেখা যায়,

চৌধুরী : পোশাক শিল্পের রাজনৈতিক অর্থনীতি

১৯৮৩-৮৪ ও ১৯৮৪-৮৫ সনে মোট ১৩টি ইউনিটে ৪,৭৪৬ হাজার ইউ,এ, ডলার মূল্যের কাঁচামাল আমদানী করেছে; ১৯৮৫-৮৬ সনে ৭,৫৭২ হাজার ডলার মূল্যের কাঁচামাল আমদানী করেছে এবং ১৯৮৬-৮৭ সনে মোট আমদানীকৃত কাঁচামালের পরিমাণ ৯,৩৫৩ হাজার ডলার। এ পর্যন্ত মোট আমদানীকৃত কাঁচামালের মূল্য ২১,৬৭১ হাজার ডলার। এ পর্যন্ত কাঁচামালের ব্যবহার হয়েছে ১৪,৩৫৯ হাজার।

কর্মসংস্থান বৃদ্ধি পাবে এমন একটি প্রধান লক্ষ্য রপ্তানী প্রক্রিয়াজাতকরণ এলাকা গড়ে তোলার প্রাক্কালে মনে করা হয়েছিল। আমরা কর্মী নিয়োগের চিত্রে দেখতে পাই মোট ১৫টি শিল্প ইউনিটে অনুমোদনকৃত শ্রম শক্তির সংখ্যা ছিল ৩,৮২১ কিন্তু ১৯৮৩-৮৬ পর্যন্ত প্রকৃত শ্রম শক্তি ছিল ২,৬১৬ অর্থাৎ ব্যবধান ১,২১৩। ১৯৮৬-এর ৩১শে ডিসেম্বর মোট প্রকৃত শ্রম শক্তির আকার দাঁড়ায় ২,৭৭৭। অনুমানের ভিত্তিতে দেখা যায়, গড়ে প্রতিটি শিল্প ইউনিটে ২৭৪ জন করে শ্রমিক থাকার কথা কিন্তু ১৯৮৬ পর্যন্ত গড়ে ১৮৬ জন শ্রমিক ছিল ১৯৮৬ এর ৩১শে ডিসেম্বর পর্যন্ত প্রকৃত শ্রম শক্তির গড়ে দাঁড়ায় ১৮৫। ১৯৮৩-৮৬ এবং ১৯৮৬ এর ৩১শে ডিসেম্বর মোট শ্রম শক্তির বৃদ্ধি ৬.১৫%, এর মধ্যে 'এ' ক্যাটাগরীর শিল্প ইউনিটে বৃদ্ধি পেয়েছেন ১.৯৭%, 'বি' ক্যাটাগরীর শিল্প ইউনিটে বৃদ্ধি পেয়েছে ২.০% এবং 'সি' ক্যাটাগরীর শিল্প ইউনিটে বৃদ্ধি পেয়েছে ১৮.৬৬%।

অথচ পুজি বিনিয়োগ কাঠামোর সাথে তুলনা করলে দেখা যায়, সবচেয়ে বেশী বিনিয়োগ হচ্ছে 'এ' ক্যাটাগরী শিল্প ইউনিটগুলোতে (৯,৪৩০ হাজার ডলার), আর সবচেয়ে কম বিনিয়োগ হচ্ছে 'সি' ক্যাটাগরীর শিল্প ইউনিটগুলোতে (১,৪৫৮ হাজার ডলার)। অথচ আমরা দেখতে পাই কর্মী নিয়োগের ক্ষেত্রে 'সি' ইউনিটের শিল্প প্রতিষ্ঠানগুলো কর্মসংস্থান বৃদ্ধি ঘটাতে পেরেছে। আসলে কর্মসংস্থানের উল্লেখযোগ্য সুযোগ সুবিধা বাড়বে বলে যে ধারণা করা হয়েছিল তা বাস্তবে চিত্র হতাশ করে। আমরা দেখতে পাই ১৮-১-৮৭ ইং পর্যন্ত ই,পি, জেড এলাকায় প্রতিষ্ঠিত মোট শিল্প ইউনিটের সংখ্যা ১৬টি তার মধ্যে ৫টি 'এ' ক্যাটাগরীর, ৮টি 'বি' ক্যাটাগরীর এবং ৪টি 'সি' ক্যাটাগরীর।

প্রকল্প ব্যয়ের দিক থেকে দেখা যায় 'এ' ক্যাটাগরীর শিল্প ইউনিটগুলোতে মোট ব্যয়ের পরিমাণ হচ্ছে ৯,৪৩০ হাজার ডলার। তার মধ্যে পুজি কাঠামোর দিক থেকে দেখা যায়, ইকুইটি ৩,৬৩০ হাজার ডলার। দীর্ঘমেয়াদী ঋণ ৪,৩০০ হাজার ডলার এবং স্বল্পমেয়াদী ঋণ, ১,৫০০ হাজার ডলার। 'বি' ক্যাটাগরীর শিল্প ইউনিটগুলো মোট প্রকল্প ব্যয় স্থানীয় মুদ্রায় ১,০৭৯ হাজার ডলার এবং বৈদেশিক মুদ্রায় ৪,৪২১ হাজার ডলার অর্থাৎ মোট ৫,৫০০ হাজার ডলার, তার মধ্যে ইকুইটি ২,৫৮০ হাজার ডলার, দীর্ঘমেয়াদী ঋণ ২,৮২০ হাজার ডলার এবং স্বল্পমেয়াদী ঋণ ১০০ হাজার ডলার। 'সি' ক্যাটাগরীর ইউনিটগুলো মোট বিনিয়োগ পরিমাণ ১,৪৫৮ হাজার ডলার, তার মধ্যে ইকুইটি ১,০৫৫ হাজার ডলার,

দীর্ঘমেয়াদী ঋণ ৩৪৮ হাজার ডলার এবং স্বল্পমেয়াদী ঋণ ৫৫ হাজার ডলার। মোট স্থানীয় মূল্যমানে প্রকল্প ব্যয় ২,৫৩৭ হাজার ডলার এবং বৈদেশিক মূল্যমানে প্রকল্প ব্যয় ১৩,৮৫১ হাজার ডলার। মোট ১৬টি ইউনিট এ ১৬,৩৮৮ হাজার ডলার বিনিয়োগ অবস্থায় রয়েছে। যন্ত্রপাতি আমদানীর দিক থেকে দেখা যায়, 'এ' ক্যাটাগরীর শিল্প ইউনিটগুলো এ পর্যন্ত ৪,২৮৮ হাজার ডলার, 'বি' ক্যাটাগরীর শিল্প ইউনিটগুলো ২,৭০০ হাজার ডলার এবং 'সি' ক্যাটাগরীর শিল্প ইউনিটগুলো ৬৭৫ হাজার ডলার মূল্যের যন্ত্রপাতি আমদানী করছে। বিনিয়োগ এবং যন্ত্রপাতি আমদানীর দিক থেকে 'এ' ক্যাটাগরীর শিল্প প্রতিষ্ঠানগুলো প্রথম সারিতে অবস্থান করছে। এমনকি দীর্ঘমেয়াদী ঋণের পরিমাণও তাদেরই বেশী, অন্যদিকে 'সি' ক্যাটাগরীর শিল্প প্রতিষ্ঠানগুলো পুঁজি বিনিয়োগ এবং যন্ত্রপাতি আমদানীর দিক থেকে সর্বনিম্ন অবস্থায় অবস্থান করছে। তাদের দীর্ঘমেয়াদী ঋণের পরিমাণ অনেক কম। অথচ কর্মসংস্থানে দিক থেকে আমরা দেখতে পাই 'সি' ক্যাটাগরীর ইউনিটগুলোতে শ্রম শক্তির পরিমাণ বেশী। এ থেকে কি পরিষ্কার হয় না যে, এ ধরনের উন্নয়ন মডেল আমাদের দেশের কর্মসংস্থানে খুব একটা উল্লেখযোগ্য ভূমিকা রাখতে পারে না। তাই এ ধরনের উন্নয়ন মডেলের পেছনে দেশের লাখ লাখ টাকা খরচ করার আগে সচেতন পরীক্ষা-নিরীক্ষা করার প্রয়োজন ছিল।

প্রথম পঞ্চবার্ষিকী পরিকল্পনায় শেষ পর্যন্ত ৩ দ্বি-বার্ষিক পরিকল্পনার সময়ে বাংলাদেশে বিদেশী পুঁজি আকর্ষণ করার লক্ষ্যে আরো বেশ কিছু পদক্ষেপ নেয়া হয় যার প্রেক্ষাপটে ১৯৮০ সনে পাস হয় বিদেশী পুঁজি প্রবর্ধন এ সংরক্ষণ আইন। পরবর্তীতে বিদেশী পুঁজি বিনিয়োগকে ত্বরান্বিত করার জন্য ও বিশ্বব্যাংক অনুপ্রাণিত রপ্তানীমুখী শিল্পায়নের উন্নয়ন ধারার অংশ হিসাবে দেশে রপ্তানী প্রক্রিয়াজাতকরণ এলাকা সৃষ্টি সংক্রান্ত একটি আইন পাস হয়। সর্বোপরি ১৯৮২ সনে ঘোষিত হয় নতুন শিল্পনীতি যা কিনা বাংলাদেশে বিদেশী পুঁজি বিনিয়োগের পরিমাণ ও গতি বাড়ানোর লক্ষ্যে অর্থনৈতিক উৎসাহ প্রদানের কাঠামো সম্প্রসারিত করে বিভিন্ন ধরনের প্রতিষ্ঠানিক সংস্কারের মাধ্যমে বাংলাদেশ অবাধ বিদেশী পুঁজি বিকাশের সুযোগ সৃষ্টি করে। এই প্রক্রিয়া মূলতঃ শুরু হয় ১৯৭৫ সনের আগষ্ট মাসে রাজনৈতিক পট পরিবর্তনের পর। ই,পি,জেড প্রোটেকশন এন্ট-এ স্পষ্টভাবে উল্লেখ রয়েছে যে, বিদেশী পুঁজির নিশ্চয়তা বিধানের লক্ষ্যে অত্র এলকার শিল্প প্রতিষ্ঠানের ইউনিটে কোনো প্রকার ট্রেড ইউনিয়ন সংগঠন গড়ে তোলা যাবে না। কোন প্রকার শ্রমিক অসন্তোষ অথবা আন্দোলন করা চলবে না। প্রয়োজনবোধে বিশেষ প্রতিরক্ষার ব্যবস্থা নেয়ার কথা উল্লেখ রয়েছে। তবে সম্প্রতি চট্টগ্রামে প্রক্রিয়াজাতকরণ এলাকায় যৌথ সংগ্রাম কমিটির আন্দোলনের মুখে কর্তৃপক্ষ কোন কোন শিল্প ইউনিটে ট্রেড ইউনিয়ন গড়ে তোলার অনুমতি দিয়েছে কিন্তু কোন প্রকার রেজিস্ট্রেশন এখন পর্যন্ত দেয় নেই। উল্লেখ্য যেভাবে বাংলাদেশের ঢাকা-চট্টগ্রাম এবং খুলনায় রপ্তানী প্রক্রিয়াজাতকরণ এলাকা গড়ে তোলার প্রস্তাবনা রয়েছে তাতে ঢাকা ও খুলনার কথা বাদ দিলেও চট্টগ্রাম ই,পি,জেড-এর কথা বলা চলে যে, এর প্রতিষ্ঠার কারণে চট্টগ্রাম শহরের

চৌধুরী : পোশাক শিল্পের রাজনৈতিক অর্থনীতি

সামরিক নিরাপত্তার ব্যাপারটিও আজ হুমকির মুখে। অর্থাৎ শহরটি তার সামরিক গুরুত্ব অনেকাংশে হারিয়েছে। চেহারা দেখে মনে হয় পতেঙ্গা, ই,পি,জেড বাংলাদেশের মাঝে আরেকটি বিদেশী দেশের মতো।

৫। পোশাক শিল্পের অর্থনৈতিক চিত্র

সম্পূর্ণ ১০০ ভাগ রপ্তানী ভিত্তিতে বাংলাদেশের পোশাক শিল্প গড়ে উঠেছে। যোগাযোগ এবং অন্য কোন ব্যবসায় জটিলতা দেখা না দিলে গার্মেন্টস ফ্যাক্টরীতে যতটুকু উৎপন্ন হয় তার সবটুকুই রপ্তানী হয়ে যায়। অর্থাৎ আভ্যন্তরীণ বাজারে তৈরী পোশাকের কোন বাজার নেই বললেই চলে। আমাদের ১৯৮৪-৮৫ সনে তৈরী পোশাকের উৎপাদন এবং রপ্তানী বৃদ্ধি সবচেহাইতে বেশী ছিল (২৮৭.৭০%) এবং ১৯৮৩-৮৪ অর্থবছরে মোট উৎপাদন এবং রপ্তানী বৃদ্ধির পরিমাণ ছিল দ্বিতীয় স্থানে (২৩.৫৬%)। আন্তর্জাতিক কোটা আরোপের ফলে ১৯৮৫-৮৬ সনে হঠাৎ করে গার্মেন্টস সেক্টরে রপ্তানী বৃদ্ধি কমে যায়। ১৯৮৪-৮৫ সনে পোশাক রপ্তানীর প্রবৃদ্ধি বেড়ে যাবার ফলে বৃহৎ আকারের দক্ষ শ্রমিক পুরোনো প্রতিষ্ঠান ত্যাগ করে নতুন নতুন প্রতিষ্ঠানে যোগ দিতে থাকে। এ সময় উল্লেখযোগ্য মাত্রায় ঢাকা এবং চট্টগ্রাম শহরে গার্মেন্টস ইণ্ডাস্ট্রি গড়ে উঠেছিল। ফলে কর্মসংস্থান বৃদ্ধি পায় এবং অনেক অদক্ষ শ্রমিক ও নতুন-পুরোনো দু'ধরনের ইণ্ডাস্ট্রিতেই সুযোগ পেয়ে যায়। যুক্তরাষ্ট্র কর্তৃক কোটা আরোপের ফলে ১৯৮৫-৮৬ সনে তুলনামূলকভাবে ১৯৮৪-৮৫ এবং ১৯৮৩-৮৪ সনের চেয়ে কম রপ্তানী হয়ে থাকে। এই দু-তিন বছরের মধ্যে উৎপাদন এবং রপ্তানী দুটি যখন বাড়তে ছিল তখন আমাদের এই সেক্টরের শ্রমিকদের দক্ষতাও বেড়ে গিয়েছিল। আসলে উৎপাদন ক্ষমতা বাড়ার ফলে শ্রমিকদের কাজ করার সুযোগ অনেক বেড়ে যায়। ফলে কাজের মাধ্যমে কাজের দক্ষতাও বৃদ্ধি পেতে থাকে। কাজের সুবিধার্থে এ সময়ে বিভিন্ন ফ্যাক্টরী আভ্যন্তরীণ প্রশিক্ষণ কোর্সের ব্যবস্থা করেছিল। অপচলিত রপ্তানীজাত পণ্যদ্রব্যের মাঝে বাংলাদেশের পোশাক শিল্প গত তিন চার বছরের মাঝে একটি উল্লেখযোগ্য স্থান দখল করে নিয়েছিল। সার্বিক রপ্তানীর প্রবৃদ্ধির তুলনায় বাংলাদেশের পোশাক শিল্প রপ্তানী প্রবৃদ্ধির অনেক বেশী। ১৯৭৯-৮০ থেকে শুরু করে ১৯৮১-৮২ পর্যন্ত পোশাক শিল্পের পর্যায়েও মোট রপ্তানী উল্লেখযোগ্য অবদান রাখতে পেরেছে। তবে একথা নিঃসন্দেহে বলা চলে যে, ১৯৮২-৮৩ থেকে ১৯৮৪-৮৫ পর্যন্ত পোশাক শিল্পের যে প্রবৃদ্ধি ঘটে তা বিস্ময়কর। তবে ১৯৮৪-৮৫ সনের সবচেয়ে বেশী প্রবৃদ্ধি ঘটে। ১৯৮৫-৮৬ সনে তৈরী পোশাক রপ্তানী বিগত কয়েক বছর থেকে কম হলেও আমরা ১৯৮৪-৮৫ সনকে সূচক বর্ষ হিসাবে তুলনা করলে দেখতে পাই যদি আমরা প্রবৃদ্ধি হারের সাথে (২৯.৯১%) মোট উৎপাদন রপ্তানীর সাথে তুলনা করি এবং আমাদের সার্বিক উৎপাদনের ১৯৮৪-৮৫ সনের যাত্রা দাঁড়ায় ২১.৩৭%। তবে ১৯৮৫-৮৬ সনে পোশাক রপ্তানীর প্রবৃদ্ধি ১৯৮৪-৮৫ সনের তুলনায় অনেক কম ছিল। সাধারণ মূল্যমানে ১৯৮৫-৮৬ সনে রপ্তানীকৃত

তৈরী পোশাকের টাকার পরিমাণ একেবারেই কম ছিল না। বিষয়টি বাংলাদেশ থেকে রপ্তানীকৃত বছর ভিত্তিক তৈরী অংশগ্রহণ সারণি থেকে দেখার চেষ্টা করলে বুঝা যায়। যখন ১৯৮৪-৮৫ সনে প্রবৃদ্ধি ১২.৪৪% তখন ১৯৮৫-৮৬ সনের রপ্তানী প্রবৃদ্ধি ছিল ১৬.০৫%। ৪নং সারণী থেকে বিষয়টি আরো পরিষ্কার করে দেখা যায়।

সারণী-৪ : মোট অসনাতনী দ্রব্যের রপ্তানীতে বছর ভিত্তিক তৈরী পোশাকের অংশগ্রহণ

বছর	অসনাতনীদ্রব্যের মোট রপ্তানী মূল্য	তৈরী পোশাক রপ্তানীতে মোট আয়	অসনাতনীদ্রব্যের রপ্তানী মূল্য তৈরী পোশাকের অবদান (%)।
১৯৭৮-৭৯	২২৩৪.৪০	১.৬০	০.৭২
১৯৭৯-৮০	২৪৫১.২০	১০.১০	০.৪১
১৯৮০-৮১	৩০২৮.৪০	৫৩.০০	১.৭৫
১৯৮১-৮২	৩৯৪৮.৪০	১৪০.১০	৩.৫৫
১৯৮২-৮৩	৫০১১.৭০	২৫৫.২২	৫.০৯
১৯৮৩-৮৪	৬৬১৪.৯০	৭৭৪.৭৮	১১.৭১
১৯৮৪-৮৫	৮৬৪৭.৬০	৩০০৩.৮৫	৩৪.৭৪
১৯৮৫-৮৬	১১০২২.৩০	৩৯০২.২০	৩৫.৪০

সূত্রঃ রপ্তানী উন্নয়ন ব্যুরো, ঢাকা।

অপ্রচলিত পণ্য দ্রব্যের রপ্তানী আয়তনে তৈরী পোশাকের ১৯৭৮-৭৯ সনে যখন প্রবৃদ্ধির হার ০.৭২%, ১৯৮৫-৮৬ সনে তা বেড়ে ৩৫.৪০% দাঁড়ায়। এমনকি ১৯৮৩-৮৪ সনে অসনাতন দ্রব্যের রপ্তানী আয়তনে তৈরী পোশাকের অবস্থান ছিল ১১.৭১%। অনেকটা হঠাৎ করেই এই অবস্থা ১৯৮৪-৮৫ সনে গিয়ে দাঁড়ায় ৩৪.৭৪% এ এবং ১৯৮৫-৮৬ সনে গিয়ে দাঁড়ায় ৩৫.৪০%। মোট রপ্তানী আয়ের অসনাতন দ্রব্য সামগ্রীর অর্থনৈতিক অংশগ্রহণ পরিমাণ ছিল ৪৫.৩৩% এবং ৪৫.৩৩% এর মধ্যেই তৈরী পোশাক কর্তৃক আয়ের পরিমাণ ১৬.০৫% বাকী ২৯.২৮% অন্যান্য অসনাতন সামগ্রী কর্তৃক উপার্জিত।

বাংলাদেশের উৎপাদিত অধিকাংশ তৈরী পোশাকেরই ক্রেতা হচ্ছে মার্কিন যুক্তরাষ্ট্র। উৎপাদিত তৈরী পোশাকের শতকরা ৮০ ভাগ মার্কিন যুক্তরাষ্ট্রে রপ্তানী হয়ে থাকে। অন্য দুটি গুরুত্বপূর্ণ ক্রেতা হচ্ছে কানাডা এবং ইইসিভুক্ত দেশগুলো। আমরা সারণী-৫ থেকে বাংলাদেশী তৈরী পোশাকের বিশ্ব বাজারের অবস্থা দেখতে পাই। বাংলাদেশ এক্সপোর্ট প্রমোশন ব্যুরোর পরিসংখ্যানে দেখা যায় ১৯৮৩ থেকে ১৯৮৬ পর্যন্ত বাংলাদেশী পোশাক পৃথিবীর ২৬টি দেশে রপ্তানী হয়ে থাকে। বাংলাদেশ পরিসংখ্যান বর্ষ ১৯৮৪-৮৫ সংখ্যাতোও আমরা একই

চৌধুরী : পোশাক শিল্পের রাজনৈতিক অর্থনীতি

চিত্র দেখতে পাই। ১৯৮২-৮৩ থেকে ১৯৮৫-৮৬ পর্যন্ত গার্মেন্টস শিল্প প্রতিষ্ঠানসমূহের বিস্ফোরণ প্রবৃদ্ধির কালের চিত্র দেখতে পাই।

এটা অত্যন্ত লক্ষ্যণীয় যে মার্কিন যুক্তরাষ্ট্রে তৈরী পোশাকের শতকরা ৮০ ভাগ বাংলাদেশ দখল করে আছে। অর্থাৎ কেবলমাত্র দেশীয় অসনাতন দ্রব্য সামগ্রী রপ্তানীতেই নয় পাশাপাশি মার্কিন যুক্তরাষ্ট্রের পোশাক বাজারে শতকরা প্রায় ৬০ ভাগ দখল করে আছে বাংলাদেশী কাপড়। আমরা সারণী-৬ থেকে এই চিত্রটি দেখতে পাই। লক্ষ্যণীয় বিষয় যে, ১৯৮৩-৮৪ সনের মোট রপ্তানীর ১৬.৬১% বেড়ে গিয়ে ১৯৮৪-৮৫ সনে দাঁড়ায় ৫৯% এবং ১৯৮৫-৮৬ সনে দাঁড়ায় ৬১.৯৮%।

বাংলাদেশী রপ্তানী আয় ও উৎপাদনের আয়ের মাত্রা প্রায় একই থাকলেও মার্কিন যুক্তরাষ্ট্রে রপ্তানীকৃত পোশাকের আয় বহুগুণ বেড়ে যায়। শুধুমাত্র যুক্তরাষ্ট্রেই নয় কানাডাতেও আমাদের বাজার সম্প্রসারিত হতে থাকে। কিন্তু পাশাপাশি ইইসিভুক্ত দেশগুলো এবং অন্যান্য দেশগুলোও আমাদের তৈরী পোশাকের চাহিদা বাড়তে থাকে। আমার সারণী-৭ থেকে এর চিত্র দেখতে পাই। ১৯৮২-৮৩ সনে মার্কিন যুক্তরাষ্ট্রেই কেবল বাংলাদেশের তৈরী পোশাকের ৪৩ ভাগ রপ্তানী হতো। ১৯৮৩-৮৪ সনে এর হার বেড়ে যায় ৫৮.৩৭% এবং ১৯৮৪-৮৫ সনে এসে দাঁড়ায় প্রায় শতকরা ৮০ ভাগ এর কাছাকাছি। কানাডার অবস্থাও প্রায় একই রকম বলা চলে। তবে ইইসিভুক্ত দেশগুলো এবং অন্যান্য দেশগুলোতে আমাদের পোশাক রপ্তানীর পরিমাণ কমতে থাকে। ১৯৮২-৮৩ সনে ইইসিভুক্ত দেশগুলোতে বাংলাদেশী তৈরী পোশাকের ৪৭.২৩% রপ্তানী হতো। ১৯৮৩-৮৪ সনে এই পরিমাণ দাঁড়ায় ৩১.৪০%এ, ১৯৮৪-৮৫ সনে দাঁড়ায় ১১.২৭% এ এবং ১৯৮৫-৮৬ সনে দাঁড়ায় ৭.৭৭% এ।

সারণী-৫ : দেশ এবং বছর ভিত্তিক বাংলাদেশ থেকে রপ্তানীকৃত তৈরী পোশাকের পরিমাণ
০০০ হাজার টাকা

দেশের নাম	১৯৮২-৮৩	১৯৮৩-৮৪	১৯৮৪-৮৫	১৯৮৫-৮৬
মার্কিন যুক্তরাষ্ট্র	১০৯৭৫০ (৪৩.০০)	৪৫২২৭৭ (৫৮.৩৭)	২৪১৪৮৮৩ (৮০.৩৯)	৩১৮৬৪৪২ (৮১.৬৬)
কানাডা	৭৬ (০.০৩)	১৯৪৪০ (২.৫১)	১৩৬৫৬৫ (৪.৫৫)	২১৯৪১১ (৫.৬২)
জার্মানী	২১৮৩৭ (৮.৫৬)	৭৭২৯৩ (৯.৯৮)	১৪৪৩৩৫ (৪.৮১)	১৫২৫০২ (৪.০৯)
সুইডেন	১৬৮০৭ (৬.৫২)	৩৩৯৮৮ (৫.৩৯)	৩০১০৭ (১.০০)	১০২৪৫৪৮ (২.৬৮)
গ্রেট ব্রিটেন	১৩২৪৮ (৫.২১)	৫০৮২৫ (৬.৫৬)	৬৬৪৪৫ (২.২১)	৬৩৬৩৪ (১.৬৩)
ইটালী	১৫৮৮৭ (৬.২২)	১৪২৯০ (১.৮৪)	২২৪৮৮ (০.৭৫)	৪৫৮১৫ (১.১৭)
ফ্রান্স	৫৫৫৬৭ (২১.৭৭)	৮২৪৮৫ (১০.৬৫)	৮১৮৩০ (২.৭২)	২৮৯৬২ (০.৭৪)
সিঙ্গাপুর	৯৯৯ (০.৩৫)	১২৮৮০ (১.৬৬)	৫২৮৬৫ (১.৭৬)	২৭২৭৫ (০.৭০)
মালয়েশিয়া	-	-	-	১৩৬৫৬ (০.৩৫)
হংকং	২৫৪ (০.১০)	১৯৫২ (০.২৫)	৭০৩৮ (০.২৩)	১১৭৬১ (০.৩০)
নরওয়ে	-	১৯৮ (০.০৩)	-	১১০১৪ (০.২৮)
সুইজারল্যান্ড	১২৯৮ (০.৫১)	৩৬১ (০.০৫)	২০৫১০ (০.৬৮)	৭৩২৭ (০.১৯)
চায়না	-	-	-	৬০৫১ (০.১৬)
আরব আমিরাত	৩৮৩৭ (১.৫০)	৬১০১ (০.৭৯)	৩৪৯০ (০.১২)	৪৭৯২ (০.১২)
নেদারল্যান্ড	৭৯২ (০.৩১)	৩৩৫৯ (০.৪৩)	৮৫৯৪ (০.২৯)	৪৭১৯ (০.১২)
জাপান	১৪৪ (০.০৬)	-	-	২৮৯১ (০.০৮)
শ্রীলংকা	-	-	-	২৪০৯ (০.০৬)
ডেনমার্ক	১৭৮৬ (০.৭০)	৩৭৪০ (০.৪৮)	-	৮৭৮ (০.০২)
অস্ট্রেলিয়া	৮০৮ (০.৩২)	৯৮৭ (০.১৩)	-	৫২১ (০.০২)
বেনজিয়াম	১১২৬৪ (৪.৪১)	১১৭৪৬ (১.৫২)	১৩৬০৯ (০.৪৫)	৫৯০ (০.০২)
স্পেন	-	-	১০৯৫ (০.০৪)	-
হাঙ্গেরী	-	১১২০ (০.১৪)	-	-
দক্ষিণ আমেরিকা	-	১১১৬ (০.১৪)	-	-
ইন্দোনেশিয়া	-	৫২৫ (০.০৭)	-	-
সউদী আরব	-	১০৩ (০.০১)	-	-
আয়ারল্যান্ড	৯৩৪ (০.৩৬)	-	-	-
	২৫৫২১৮ (১০০)	৭৭৪৭৮৬ (১০০)	৩০০৩৮৫৬ (১০০)	৩৯০২২০২ (১০০)

দ্রষ্টব্য: বন্ধনীর মাঝে লিখিত সংখ্যাগুলো শতকরা হার নির্দেশ করে।

সূত্র: রপ্তানী উন্নয়ন ব্যুরো, ঢাকা। রপ্তানী পরিসংখ্যান ১৯৮৩-৮৪, ১৯৮৪-৮৫ এবং ১৯৮৫-৮৬।

চৌধুরী : পোশাক শিল্পের রাজনৈতিক অর্থনীতি

সারণী-৬ : বাংলাদেশ থেকে মার্কিন যুক্তরাষ্ট্র কর্তৃক মোট আমদানীতে তৈরী পোশাকের অবস্থান

(মিলিয়ন)

বৎসর	বাংলাদেশ থেকে মার্কিন যুক্তরাষ্ট্র রপ্তানী	মার্কিন যুক্তরাষ্ট্রে মোট তৈরী পোশাকের রপ্তানী	মোট রপ্তানীতে % হার (তৈরী পোশাকে)
১৯৮২-৮৩	১৮৫৬.২৮	১০৯.৭৫	৫.৯১
১৯৮৩-৮৪	২৭২৭.২৯	৪৫২.৭৫	১৬.৬১
১৯৮৪-৮৫	৪০৯২.৪৪	২৪১৪.৮৮	৫৯.০০
১৯৮৫-৮৬	৫১৪১.২১	৩১৩৬.৪৪	৬১.৯৮

সূত্র: রপ্তানী উন্নয়ন ব্যুরো, ঢাকা।

সারণী-৭ : ১৯৮২-৮৩ থেকে ১৯৮৫-৮৬ পর্যন্ত বিশ্বের বাজারে বাংলাদেশের তৈরী পোশাকের রপ্তানী চিত্র

	১৯৮২-৮৩	১৯৮৩-৮৪	১৯৮৪-৮৫	১৯৮৫-৮৬
ইউ.এস.এ	৪৩.০০%	৫৮.৩৭%	৮০.৩৯%	৮১.৬৬%
ইইসি	৪৭.২৩%	৩১.৪৬%	১১.২৭%	৭.৬৬%
কানাডা	০.০৩%	২.৫১%	৪.৫৫%	৫.৬২%
অন্যান্য	৯.৭৪%	৭.৬৬%	৩.৭৯%	৪.৯৫%
	১০০%	১০০%	১০০%	১০০%

সূত্র: রপ্তানী উন্নয়ন ব্যুরো, বাংলাদেশ।

অন্যান্য দেশগুলোতে ১৯৮২-৮৩ সালে বাংলাদেশী তৈরী পোশাকের ৯.৪৭% রপ্তানী হইত। ১৯৮৩-৮৪ সালে ৭.৬৬%, ১৯৮৪-৮৫ সালে ৩.৭৯% এবং ১৯৮৫-৮৬ সালে ৪.৯৫%। এখানেও ক্রমাগত হ্রাসের মাত্রাটিই দেখা যায়। মজার ব্যাপার হচ্ছে যে, মার্কিন যুক্তরাষ্ট্র কর্তৃক কোটা আরোপের সাথে সাথে বাংলাদেশী পোশাক শিল্প মার্কিন যুক্তরাষ্ট্র এবং কানাডার বাজার হারাইয়া পাশাপাশি ই ই সিভুক্ত দেশগুলোর বাজারও হারায়।

আমরা আমেরিকান শীপার্স রিপোর্ট থেকে বিভিন্ন দেশের আয়তন ভিত্তিক তৈরী পোশাকের রপ্তানীর প্রবৃদ্ধির হার লক্ষ্য করতে পারি। ১৯৮২ সন থেকে শুরু করে ১৯৮৬ সন পর্যন্ত তৈরী পোশাক রপ্তানী প্রবৃদ্ধির হার সারণী-৮ এ দেখান হয়েছে। এই সারণী থেকে কয়েকটি নির্বাচিত দেশের রপ্তানীকৃত তৈরী পোশাকের প্রবৃদ্ধি হারের তুলনামূলক চিত্র পাই। বাংলাদেশী যেসব আইটেমের উপর মার্কিন যুক্তরাষ্ট্রে কোটা আরোপ করেছে তার কোন সঠিক পরিসংখ্যান পাওয়া যায়নি। সারণী-৮ এ দেখা যায় ১৯৮৪ সন পর্যন্ত মার্কিন যুক্তরাষ্ট্রে এর আমদানীকৃত

ক্যাটাগরীর ৬৩৭, পৃথিবীর মোট ৪টি দেশ থেকে সরবরাহ করা হত। তবে বাংলাদেশের অবস্থান এতে কেমন ছিল তার কোন সঠিক চিত্র দেখা যায়নি। ১৯৮২ সাল থেকে '৮৩ সালের মধ্যে ক্যাটাগরী ৬৪১ এর বাৎসরিক রপ্তানী প্রবৃদ্ধি হার বেড়েছে ১৯.৩০%। এই একই আইটেমে সিংগাপুরের প্রবৃদ্ধির হার ছিল ৩২.০৮% এবং দক্ষিণ কোরিয়ার ছিল কেবলমাত্র ৪.৭৪%। ১৯৭৪ সনে মার্কিন বাজার চাহিদা ক্রমাঘয়ে প্রসারের ফলে বাংলাদেশী তৈরী পোশাকের প্রবৃদ্ধির হার ৬০৩.১৫% উন্নীত হয়। কিন্তু পাশাপাশি দেখতে পাই দক্ষিণ কোরিয়া, হংকং এবং শ্রীলংকার প্রবৃদ্ধির হার ঋনাত্মক দিকে ধাবিত হয়। শ্রীলংকার রপ্তানীর প্রবৃদ্ধির মাত্রা কমে যাওয়ার কারণ মূলতঃ তামিল গেরিলাদের আক্রমণ এবং সেই সময়ের শ্রীলংকার সার্বিক আর্থ-সামাজিক অবস্থার অস্থিরতা। অবশ্য দক্ষিণ কোরিয়া, হংকং এর কারণ কি একমাত্র কোটা ভিত্তিতে এর কারণ খুঁজে পাওয়া যাচ্ছে না। তবে ইইসি ভুক্ত দেশ এবং কানাডাতে এ দুই দেশের রপ্তানীর পরিমাণ প্রায় একই ছিল। ১৯৮৫-৮৬ সনে ক্যাটাগরী ৬৪১ এর রপ্তানীর প্রবৃদ্ধির হারের মাত্রা ছিল যথাক্রমে ১৭৩.৭৩% এবং ৫৯৩.৮২%।

যা ছিল ১৯৮৫ সালে দক্ষিণ কোরিয়ার প্রবৃদ্ধির মাত্রা ২২.৩৩% এবং ১৯৮৬ সালে সিংগাপুর এর প্রবৃদ্ধির মাত্রা ৪৫.৪১% তুলনায় অনেক বেশী ১৯৮৬ সনে ক্যাটাগরী ৬৪১ এ মার্কিন যুক্তরাষ্ট্রের বাজারে ৯.৩০% ছিল বাংলাদেশী পোশাকের। দ্বিতীয় স্থান ছিল দক্ষিণ কোরিয়ার (৯.৪১%)। ক্যাটাগরী ৬৪৫ এর জন্য ১৯৮২-৮৩ সালে বাংলাদেশের কোন পরিসংখ্যান না পাওয়াতে এর প্রবৃদ্ধির হার বের করা যায়নি। তবে ১৯৮৫ সনে ক্যাটাগরীর ৬৪৫ এর বাংলাদেশের জন্য প্রবৃদ্ধির হার ছিল ৫৯৯.৪৩%, ঠিক একই সময়ে শ্রীলংকার রপ্তানীর প্রবৃদ্ধির হার ছিল ১৮২.৭১%। অর্থাৎ এই সময়ে মার্কিন যুক্তরাষ্ট্রের পোশাকের বাজারে বাংলাদেশ এবং শ্রীলংকা ব্যতীত পৃথিবীর অন্যান্য দেশের সরবরাহের প্রবৃদ্ধির হার বলা যায় প্রায় ঋণাত্মক।

১৯৮৬ সনে কোটা আরোপের পরিপ্রেক্ষিতে ১৯৮৫ সনে প্রবৃদ্ধির হার ৫১৯.৪৩% এক ধাপ নীচে নেমে আসে (৩২.৬৯%) হংকং এর বেলায়ও ক্যাটাগরী ৬৪৫ এর ঋনাত্মক প্রবৃদ্ধি দেখা যায়। কিন্তু একই ক্যাটাগরীর জন্য শ্রীলংকার প্রবৃদ্ধির হার ছিল অনেক বেশী। কেবল মাত্র ১৯৮৫-৮৬ সনের জন্য ক্যাটাগরী ৬৪৬ এর মার্কিন যুক্তরাষ্ট্রের পোশাক বাজারে বাংলাদেশের অবস্থান পরিসংখ্যান পাওয়া গিয়েছে। ক্যাটাগরী ৬৪৬ এর ১৯৮৬ সনে মার্কিন বাজারে সবচেয়ে বেশী সরবরাহ হয়েছে বাংলাদেশ থেকে যাহার প্রবৃদ্ধির হার ছিল ৪১০.১৫%। একই ক্যাটাগরীর দ্বিতীয়তম স্থান ছিল সিংগাপুরের (৯.৪৩%)। বাংলাদেশ এবং সিংগাপুর ব্যতীত এই একই ক্যাটাগরীর বেলায় রপ্তানীর প্রবৃদ্ধির হার ছিল ঋনাত্মক। উল্লেখ্য যে ক্যাটাগরীর ৬৪৬ এর বাংলাদেশী চাহিদা মার্কিন যুক্তরাষ্ট্রের আমদানী বাজারের ১.০৬% দখল

করেছিল। ক্যাটাগরীর ৬৪৭, ৬৪৮ এবং ৩৩৬, এর কোন প্রকার পরিসংখ্যান ১৯৮৪ আগ পর্যন্ত পাওয়া যায়নি। তবে ১৯৮৫-৮৬-সাল পর্যন্ত এই তিনটি ক্যাটাগরীর বাংলাদেশী চাহিদা মার্কিন যুক্তরাষ্ট্রের আমদানী বাজারে উল্লেখযোগ্য স্থান দখল করেছিল, তবে ১৯৮৪-৮৫ সনে এসে ক্যাটাগরীর ৩৩৭ এর বাজার খুব একটা উল্লেখযোগ্য স্থান দখল করতে পারে। ১৯৮৬ সনের মার্কিন যুক্তরাষ্ট্রের আমদানী বাজারে ক্যাটাগরী ৬৪৭ এর অংশ ছিল ১.২৭%, ক্যাটাগরীর ৬৪৮ এর অংশ ছিল ৩.৬৫% এবং ক্যাটাগরী ৩৩৭ এর অংশ ছিল ২.৩৫%।

৬। পোশাক শিল্পের আন্তর্জাতিক রাজনীতির অন্যদিক

১৯৫০ সালে জাপান কর্তৃক কাপড় এবং পোশাক শিল্প রপ্তানী বৃদ্ধি পাওয়া এবং তৎপরিবর্তে হংকং, ভারত এবং পাকিস্তান কর্তৃক একই নীতি অনুসৃত হওয়ার ফলে মালটিফাইবার এ্যারেঞ্জমেন্টে (এম,এফ,এ) নামে সংগঠনটি গঠিত হয়নি। ১৯৬২ সালে লংটাম এ্যারেঞ্জমেন্ট নামে একটি সংস্থা গড়ে উঠে যার উদ্দেশ্য ছিল প্রতিটি দেশে বস্ত্র এবং পোশাক শিল্পের সাথে সংযুক্ত আমদানী ও রপ্তানী নিয়ন্ত্রণ করা। ১৯৭২ সালে ওয়ার্কিং পার্টি অব অন টেক্সটাইল নামে একটি সংগঠন প্রতিষ্ঠিত হয়। প্রতিষ্ঠার ইচ্ছন জোগায় জেনারেল এগ্রিমেন্ট অন টেরিফস এন্ড ট্রেড (গ্যাট)। তাদের উদ্দেশ্য ছিল বস্ত্র এবং পোশাক শিল্পের সমস্যাগুলোকে সমাধান করা। চরিত্রগতভাবে এই সংগঠনটি বিভিন্ন দেশের সরকারের সাথে পোশাক ও বস্ত্র শিল্প সংক্রান্ত দর কষাকষি চালিয়ে যায়। এই সংগঠনটিরই প্রায় ৫০টি সদস্যভুক্ত দেশ মালটি ফাইবার এ্যারেঞ্জমেন্ট নামে একটি সংগঠন ১৯৭৪ সালে প্রতিষ্ঠা করে। এম, এফ, এ, তার নীতিমালার যে উদ্দেশ্য ব্যক্ত করেছে তা হলো বস্ত্র এবং পোশাক শিল্প ব্যবসায়কে উৎসাহিত এবং প্রসারিত করা এবং পাশাপাশি এই ব্যবসায় সামগ্রিক সমস্যাবলীকে সুষ্ঠুভাবে আলাপ আলোচনার মাধ্যমে সমাধান করা। কোন দেশই যাতে এককভাবে কোন বাজার তৈরী করতে না পারে সেদিকে সংগঠনটি আন্তর্জাতিকভাবে বাজার নিয়ন্ত্রণ করে। এম, এফ, এ ১(৩) নীতিমালায় সুস্পষ্টভাবে বলা হয়েছে যে, এই সংগঠনটি তৃতীয় বিশ্বের অর্থনৈতিক এবং সামাজিক উন্নয়নে সম্ভাব্য সব রকমের সাহায্য সহযোগিতা দেবে। আমদানী এবং রপ্তানীকারক দেশগুলোর মাঝে পোশাক শিল্পের বিশেষ বিশেষ আইটেমের উপর দ্বিপাক্ষিকভাবে কোটা আরোপের ব্যবস্থা রয়েছে। এম, এফ, এ, ৩(৩) ধারায় আমদানীকারকদেশগুলো সম্পর্কে বলা হয়েছে যে, অনুন্নত রপ্তানীকারক দেশগুলোর সাথে পোশাক শিল্পে রপ্তানীর ব্যাপারে সম্ভাব্য সব দিক দিয়েই পোশাক আমদানীকারক দেশগুলোকে এমনভাবে আলোচনা চালাতে হবে যে, যাতে করে সমস্যার সমাধান হয়।

এম,এফ, এ ৩(৬) ধারায় উল্লেখ আছে যে আমদানীকারক দেশগুলো প্রয়োজনবোধে রপ্তানীকারক দেশগুলোর উপর সাময়িকভাবে রপ্তানীজাত পোশাকের উপর কোটা আরোপ

করতে পারে। তবে বিশেষ করে বাজার মাত্রার দিকে লক্ষ্য রেখেই এই ব্যবস্থা নেয়া যেতে পারে। যদি আমাদানীকারক দেশগুলো সাথে রপ্তানীকারক দেশগুলো আমাদানীর পরিমাণ বিষয়ক চুক্তি না হয় তাহলে এই ধরনের সমস্যা সমাধানের জন্য টেক্সটাইল সার্ভেইলেন্স বডি (টি এস বি) দায়িত্ব নেবে। এই সংগঠনটি এম,এফ,এ, কার্যবলী তদারক করে থাকে।

মার্কিন যুক্তরাষ্ট্র, ইউরোপীয়ান কমিউনিটি, কানাডা, আফ্রিকা, সুইডেন, ফিনল্যান্ড, নরওয়ে, সুইজারল্যান্ড এবং জাপান এই নয়টি দেশ, উন্নয়নশীল আটটি দেশের উপর (সারা পোশাক তৈরী করে) কোটা আরোপ করতে পারে। এর ফলে শিল্পায়িত দেশগুলোর ব্যবসা বাণিজ্যের তেমনটা ক্ষতি হয় না।

সত্যি কথা বলতে কি, এম,এফ,এ প্রতিষ্ঠিত হবার আগে পর্যন্ত মার্কিন যুক্তরাষ্ট্র এবং ইউরোপীয়ান কমিউনিটি দেশগুলো তৃতীয় বিশ্বের দেশগুলো থেকে তৈরী পোশাক বেশী আমদানী করতো। বাংলাদেশের পোশাক শিল্পের চালচিত্র বিশ্লেষণ করলে এম,এফ,এর আসল চরিত্রটি বোঝা যাবে। এম,এফ,এর নীতিমালায় দেখা যায়, শুধুমাত্র দুর্যোগের সময় কোটা আরোপ করা হয়ে থাকে। যা আসলে দেশীয় রপ্তানীজাত দ্রব্য উৎপাদনে ভীতি স্বরূপ।

এম,এফ,এ তার অনুসৃত নীতিমালায় দেখিয়েছে যে, স্বল্প আয়তনের পোশাক রপ্তানী করে এমন দেশের উপর কোটা আরোপ করা হবে না। কিন্তু বাংলাদেশের ঘটনা থেকে দেখা যায় মার্কিন যুক্তরাষ্ট্র এবং ইসি ভুক্ত দেশগুলো যথাক্রমে ০.৫% এবং ০.১% এরও কম আয়তনের পোশাক বাংলাদেশ থেকে আমদানী করে থাকে।

হংকং এর সাথে মার্কিন যুক্তরাষ্ট্রের অন্য একটি বাণিজ্য ব্যবস্থার বিষয়টি লক্ষ্যণীয়। বাংলাদেশের তুলনায় হংকং এবং ভারত যথাক্রমে ৩৮ এবং ৫ গুণ বেশী রপ্তানী করে। বাংলাদেশে যে দুইটি আইটেমের উপর মার্কিন যুক্তরাষ্ট্র কোটা আরোপ করেছে তা হলো শার্ট এবং জ্যাকেট। অথচ মার্কিন যুক্তরাষ্ট্র মোট চাহিদার ২.৫% কাপড় আমদানী করে বাংলাদেশ থেকে। শ্রীলংকার জ্যাকেট রপ্তানীর তুলনায় এই পরিমাণ ৬ গুণ কম, হংকং এর তুলনায় ১০ গুণ কম, এবং ভারতের তুলনায় ৫ গুণ কম। একই কথা ইউরোপীয়ান কমিউনিটিভুক্ত দেশগুলোর যেমন- ফ্রান্স এবং বৃটেনের ক্ষেত্রে বলা যায় বাংলাদেশ, ফ্রান্স এবং বৃটেনে যথাক্রমে ১.৩ মিলিয়ন পিস শার্ট এবং ১.২ মিলিয়ন পিস জ্যাকেট রপ্তানী করে থাকে। এই রপ্তানির পরিমাণ ১৯৮৪ সালের হিসাব মতে গৃহীত হয়। কিন্তু ভারত কেবলমাত্র ইউরোপীয়ান কমিউনিটি ভুক্ত দেশগুলোতে ১১ মিলিয়ন পিস শার্ট রপ্তানী করে। দক্ষিণ কোরিয়া ২৫ মিলিয়ন

পিস শাট, হংকং ৪৯ মিলিয়ন শাট এবং তাইওয়ান ৯ মিলিয়ন পিস শাট ইউরোপীয়ান কমিউনিটি দেশগুলোতে রপ্তানী করে।

তাহলে শুধু বাংলাদেশের উপর কেন এই অযাচিত কোটা আরোপ করা হলো? লক্ষ্যণীয় যে মার্কিন যুক্তরাষ্ট্র এবং ইউরোপীয়ান কমিউনিটি ভুক্ত দেশগুলো শুধু মাত্র বাংলাদেশের উপরই কোটা আরোপ করেনি। রপ্তানী কারণ প্রধান তিনটি দেশ যেমনঃ হংকং, দক্ষিণ কোরিয়া এবং তাইওয়ান এর উপরেও বাজার সংকোচনের নিমিত্তে কোটা আরোপ করেছে।

বর্তমানে যাদের নেতৃত্বে এম, এফ, এ পরিচালিত হচ্ছে তাদের অনেকেই কর্মকাণ্ডকে নতুন রূপ দিতে আগ্রহী নয়। এ থেকে দেখা যায় উন্নয়নশীল দেশগুলো এম, এফ, এতে অবস্থান করলেও উন্নত দেশগুলো থেকে অন্তর্ভুক্ত সদস্যদের কাছে থেকে তারা তেমন একটা সাহায্য সহযোগিতা পাচ্ছে না। উন্নত দেশগুলো কর্তৃক আরোপিত কোটার ব্যাপারে রপ্তানীকারক দেশগুলোর প্রচণ্ড ক্ষোভ রয়েছে। কোটা প্রবর্তনের ফলে ভোক্তাদের মূল্যের পরিমাণ বেড়ে গিয়েছে এবং আন্তর্জাতিক রপ্তানী বাজার মার খাচ্ছে। পাশাপাশি উন্নয়নশীল দেশগুলো প্রয়োজনীয় বৈদেশিক মুদ্রা অর্জনে বাধাগ্রস্ত হচ্ছে।

এত কিছু পরেও উন্নয়নশীল দেশগুলোর অনেকের মনেই এই ধারণা দেখা দিয়েছে যে, পাল্টা একটি সংগঠন সৃষ্টি না হওয়া পর্যন্ত এম, এফ, এ ভেংগে দেওয়া কি যুক্তিসংগত হবে? দূর প্রাচ্যের বেশ কিছু দেশ শ্রম বাজারে দালালী করে হয়ত বা উন্নয়নশীল অন্য কোন দেশে পোশাক প্রস্তুত করে আন্তর্জাতিক বাজারে রপ্তানী করবে। কিন্তু সামগ্রিকভাবে বিবেচনা করলে দেখা যায় এই ধরনের কর্মকাণ্ড তৃতীয় বিশ্বের দেশগুলোর উপর বুমেরাং হয়েই ফিরে আসবে।

৭। সমস্যা বালী

বাংলাদেশ তৈরী পোশাক শিল্পে অসংখ্য সমস্যা জর্জরিত

- ১। মার্কিন যুক্তরাষ্ট্রের কর্তৃক কোটা আরোপের ফলে বাংলাদেশের প্রায় ৬০ হাজার নারী শ্রমিক বেকার হয়ে পড়ে। ফলে সামাজিক অসন্তোষ এবং অর্থনৈতিক অনিশ্চয়তা দেখা দেয়। অনেক নারী শ্রমিক এখন পর্যন্ত বিকল্প অন্য কোন কর্মসংস্থান করতে পারেনি।
- ২। চট্টগ্রাম শহর থেকে যেসব নারী শ্রমিক ই,পি,জেড এলাকায় কাজ করতে যায় তাদের যাতায়াতের অসুবিধা অত্যন্ত প্রকট। তাদের উপর বিদেশী মালিকদের ভাড়া করা

লোকদের বিভিন্ন মাত্রায় অত্যাচার ও নির্যাতন চলে। ই, পি, জেড নারী শ্রমিকদের ভাষায় এই এলাকাটি একটি জেলখানা।

- ৩। চট্টগ্রাম ই, পি, জেড এলাকা শ্রমিক ইউনিয়নগুলিতে রাজনৈতিক যোগাযোগের তীব্রতা অন্তত কম বলে মনে হয়। অনেক ক্ষেত্রে নারী শ্রমিকদের সমস্যাকে বিষয়গত আলোচনায় না এনে কেবলমাত্র ইস্যু ভিত্তিক আলোচনায় আনা হয়। অর্থাৎ সারা দেশে নারী শ্রমিকদের ক্ষেত্রে একই অবস্থা চলছে।
- ৪। বিশেষ বিশেষ মুহূর্তে রাজনৈতিক সিদ্ধান্ত গ্রহণে বিলম্ব ঘটায় আন্দোলনের তীব্রতাকে জনসমক্ষে তুলে ধরতে অনেক ক্ষেত্রে ট্রেড ইউনিয়নের নেতারা সক্ষম হননি। তবে জাতীয় রাজনীতির অবস্থা যেখানে স্থবির সেখানে এককভাবে একটি অংশ থেকে সক্রিয়তা আশা করা যায় না। এর জন্য পুরো কাঠামোতে, পুরো প্রক্রিয়ায় একটি গতিশীলতার প্রয়োজন রয়েছে।
- ৫। মার্কিন যুক্তরাষ্ট্র, কানাডা এবং ইইসিভুক্ত দেশগুলো বাংলাদেশের তৈরী ১১৬টি আইটেমের উপর আমদানী চাহিদা জানিয়ে থাকে। কিন্তু বাংলাদেশ মাত্র ৪৪টি আইটেম উৎপাদন এবং রপ্তানী করে। তবে বাংলাদেশের অধিকাংশ গার্মেন্টস ইন্ডাস্ট্রি ২০ থেকে ২৫টি আইটেম অধিক মাত্রায় উৎপাদন করে। তাই আমদানী চাহিদাগত দিক থেকে দেখা যায় উৎপাদন করতে পারেনি।
- ৬। ব্যাংক টু ব্যাংক এলসির জন্য ১২০দিন সময় নির্ধারিত রয়েছে তা অনেক ক্ষেত্রেই গার্মেন্টস ইন্ডাস্ট্রির মালিকদের অসুবিধার কারণ হয়ে দাঁড়ায়। কারণ এই ১২০দিনের মধ্যে কাঁচামালকে চূড়ান্ত তৈরী পোশাকে রূপ দিতে গিয়ে অনেকগুলো স্তর অতিক্রম করতে হয়। ফলে কোন কোন সময় এই নির্ধারিত সময়ে কাজ শেষ করা সম্ভব হয় না। এ ছাড়া কাষ্টমস, বন্দর এবং অন্যান্য সরকারী জটিলতা তো রয়েছেই।
- ৭। এছাড়া অন্য আর একটি সমস্যা হলো সঠিক সময়ে তৈরী পোশাকের শিপম্যান্ট করা যেমন সঠিক সময়ে শিপমেন্ট করতে না পারলে ১২০দিনের মধ্যে যে ব্যাংক টু ব্যাংক এলসি করা হয় তাতে করে নির্দিষ্ট সময়ে চাহিদাকৃত দেশে মাল পাঠানো সম্ভব হয় না।
- ৮। বাংলাদেশের গার্মেন্টস ইন্ডাস্ট্রি ব্যবসায় সামরিক -বেসামরিক দুই ধরনের ব্যক্তিদেরই উপস্থিতি দেখা যায়। এছাড়া বিভিন্ন রাজনৈতিক দলের কিছু কিছু নেতা শ্রেণীর

লোকদেরও এই ইন্ডাস্ট্রির মধ্যমনি হিসাবে দেখা যায়। বিশেষ করে জামাতে ইসলামী গ্রুপ, আওয়ামীলীগ, জাতীয়তাবাদী দল, জাতীয় পার্টি এবং জাতীয় সমাজতান্ত্রিক দলের উপস্থিতি দেখা যায়। ফলে উৎপাদন গত দিক দিয়ে এই ত্রি-মুখি ব্যক্তিদের তেমন একটা ঐক্য দেখা যায় না। রাজনৈতিক দলের সমর্থককে কেন্দ্র করে আন্তর্জাতিক বাজার পাওয়ারও একটি চেষ্টা দেখা যায়। বাংলাদেশ গার্মেন্টস ম্যানুফ্যাকচারস্ এন্ড এক্সপোর্ট এসোসিয়েশন এর বিভিন্ন মুখী অংগন সামরিক বেসামরিক ব্যক্তিদের কোম্পলকে আরো সুষ্ঠুভাবে প্রতিফলিত করে। আসলে ফড়িয়া ব্যবসায়ীদের খপ্পরে পড়ে এই শিল্পসমূহের ক্ষতিসাধন হয়েছে।

- ৯। গার্মেন্টস ইন্ডাস্ট্রি প্রতিষ্ঠা ব্যাংক ঋন এবং অন্যান্য সরকারী সুযোগ সুবিধা পাওয়াকে কেন্দ্রকরে সামরিক বেসামরিক ব্যক্তিমালিকদের মাঝে কোম্পল দেখা যায়। অনেকগুলো ইন্ডাস্ট্রি অবসর প্রাপ্ত সামরিক এবং বেসামরিক ব্যবসায়ী ব্যক্তিদের যৌথ উদ্যোগে পরিচালিত হতে দেখা যায় এছাড়া বেসামরিক আমলা তন্ত্রের প্রভাবতো রয়েছেই।
- ১০। এছাড়াও আমরা আমাদের তৈরী পোশাকের চাহিদা ২৬টি দেশ ব্যতীত ৬ বৎসরে আর কোন নতুন দেশ বাজার তৈরী করতে পারিনি। ১৯৮৫-৮৬ সালে আন্তর্জাতিক বাজারে বাংলাদেশের পোশাকের বাজার সংকোচন হওয়ার ফলে মাত্র ২০টি দেশে তৈরী পোশাক রপ্তানী হয়। কোন দেশেই শতকরা হারের দিক থেকে তৈরী পোশাক রপ্তানীর পরিমাণ বাড়ানো সম্ভব হয়নি। অর্থাৎ সরকার বা তৈরী পোশাকের মালিক পক্ষ কারো পক্ষেই আন্তর্জাতিক বাজার সম্প্রসারণ করা সম্ভব হয়নি। পরিসংখ্যান থেকে দেখা যায়, দেশের তৈরী এই পোশাককে মোটা একটা চাহিদার জন্য বাংলাদেশকে মার্কিন যুক্তরাষ্ট্রের মত দেশের উপরে বেশী করে নির্ভর করতে হয়। অর্থাৎ সমান্তরাল কোন বাজার বাংলাদেশ তৈরী করতে পারেনি, দেশ ভিত্তিক সম্প্রসারণ খুব একটা বৃদ্ধি পায়নি।
- ১১। পৃথিবীর ১৬টি উন্নত দেশ পোশাক আমদানীর জন্য উন্নয়নশীল দেশগুলোকে রপ্তানীর মাত্রা বৃদ্ধির লক্ষে জি,এস,পি, (জেনারেলাইজড সিস্টেম অব প্রেফারেন্স) দিয়ে তাকে। কিন্তু মার্কিন যুক্তরাষ্ট্র বাংলাদেশকে আজও এমন কোন সুবিধা দেয়নি। এই ধরনের সুবিধা পেলে মার্কিন যুক্তরাষ্ট্রে বাংলাদেশের পোশাকের রপ্তানী বেড়ে যেত।
- ১২। দেশীয় কাপড়ের দাম অধিক বিধায় গার্মেন্টস ইন্ডাস্ট্রিগুলো বিদেশ থেকে কাপড় আমদানী করে। এছাড়া গুণগত দিক দিয়েও দেশীয় কাপড় উন্নত নয়। তাই আমদানী করমুক্ত হলে বাহির থেকে কাপড় আমদানী করা সম্ভব হবে এবং কিছুটা মূল্য

সংযোজন বৃদ্ধি ঘটতে পারে। যদি দেশীয় কাপড় গার্মেন্টস ইন্ডাস্ট্রিতে সরবরাহ করা যায় তাহলে বিশ্বের বাজারে বাংলাদেশী তৈরী পোশাকের মূল্য সংযোজন অধিক বেড়ে যেত।

- ১৩। পশ্চাত্মুখী সংযোগ সৃষ্টির জন্য যেসব তৈরী পোশাক শিল্প ইউনিট দেশীয় কাপড় ব্যবহার করবে তাদেরকে সরকার ১০০% রপ্তানী উন্নয়ন বেনিফিট দেওয়ার কথা ঘোষণা করছেন। যারা আমদানীকৃত কাপড় দিয়ে পোশাক তৈরী করবেন তাদেরকে ৪০% রপ্তানী উন্নয়ন বেনিফিট দেওয়া হবে। কিন্তু বাংলাদেশ পোশাক প্রস্তুত এবং রপ্তানীকারক এসোসিয়েশনের চাপে পড়ে সরকার ৪০কে ৭০% এ উন্নীত করেছেন। কিন্তু দেশী কাপড়ের জন্য যে ১০০% বেনিফিট ছিল তা উন্নীত করেননি। ফলে এক ধরনের বৈষম্য
- ১৪। বিদেশ থেকে ট্যানিং আইটেম আমদানী করা সময় সাপেক্ষ বলে নির্ধারিত ১২০ দিনের মাঝে পোশাক তৈরী এবং রপ্তানী সম্ভব হয়না। ফলে কন্ট্রাকট হারাতে হয়। পাশাপাশি তৈরী পোশাকের মূল্য সংযোজনও বেড়ে যায়। এর কোন বিকল্প ব্যবস্থা এখনও হাতে নেওয়া হয়নি।
- ১৫। আজ পর্যন্ত সরকার তৈরী পোশাক শিল্প সেক্টরের জন্য কোন প্রকার নীতিমালা প্রনয়ন করেননি। বিশেষ করে নারী শ্রমের উপর ভিত্তি করে যে ইন্ডাস্ট্রি গড়ে উঠেছে তার দিকে সরকারের দৃষ্টি দেওয়া উচিত ছিল। এমনকি নারী শ্রমিকদের জন্য বিশেষ করে যে স্বল্প সংখ্যক শ্রমিক কাজ করে সর্বাধিক বৈদেশিক মুদ্রা অর্জন করেছে তাদের জন্য সরকার কোন ব্যবস্থা হাতে নেয়নি।
- ১৬। এই শিল্প সেক্টরের জন্য ব্যাংক ফাইন্যান্স ফ্রেডিট সুবিধাদি সরকার খুব একটা ভালভাবে ব্যবস্থা করতে পারেননি। ব্যাংক ফাইন্যান্স এর ব্যাপারে সুষ্ঠু কোন নীতিমালা বা বাণিজ্যিক ব্যাংক সমূহের মাঝে আভ্যন্তরীণ কোন যোগাযোগও এ ব্যাপারে গড়ে উঠেনি। উল্লেখ্য যে টাউট প্রকৃতির অনেক ব্যবসায়ী ইন্ডাস্ট্রি করার নাম করে ব্যাংক থেকে লোন নিয়ে আজ পর্যন্ত শোধ দেয়নি। এর জন্য একটি তদন্ত কমিটি একান্ত
- ১৭। দেশের নারী শ্রমিকদের কাঠামোগত পরিবর্তনের জন্য সরকারের কোন সুষ্ঠু নীতিমালা নেই। ফলে পুরো ব্যাপারটাই একটি হতাশাব্যাঞ্জক অবস্থায় এসে দাঁড়িয়েছে।

৮। সমস্যা নিরসনে প্রস্তাবিত পদক্ষেপসমূহ

পুঞ্জিবাদী দেশ এবং বহুজাতিক সংস্থাগুলির সরাসরি যোগসাজসের মাধ্যমে সরকারী চক্রায়ায় ১৯৮৪ সাল পর্যন্ত বাংলাদেশী পোশাক শিল্পের দ্রুত বৃদ্ধি ঘটলেও সম্প্রতি মার্কিন যুক্তরাষ্ট্র কর্তৃক আরোপিত কোটা বাংলাদেশের এই শিল্পের অগ্রগতি, উৎপাদন, কর্মসংস্থান, বৈদেশিক মুদ্রা অর্জন, অর্থনৈতিক উন্নয়ন, এবং অন্যান্য দিকের উপর বাধা আরোপ করেছে। গার্মেন্টস শিল্প প্রতিষ্ঠানগুলিতে ঋণ দিয়ে এবং বহুজাতিক সংস্থার সাথে হাত মিলিয়ে বাংলাদেশের সরকার একটি পর্যায় পর্যন্ত বাংলাদেশের গার্মেন্টস শিল্পকে বিকাশ এবং সম্প্রসারণের দিকে এগিয়ে নিলেও সম্প্রতি আয়োজিত কোটার ফলে সরকারের পক্ষে এই শিল্প প্রতিষ্ঠানকে আর এগিয়ে নেওয়া সম্ভব হচ্ছে না। গার্মেন্টস শিল্পের সাম্প্রতিক সংকটকে মোকাবেলা করার জন্য সরকারকে নিম্নোক্ত সুপারিশসমূহ বিবেচনায় রাখা দরকার।

- ১। বাংলাদেশ সরকারকে নিজেদের বাজার প্রসারণের জন্য আন্তর্জাতিক শক্তিসমূহের উপর চাপ প্রয়োগ করতে হবে। আন্তর্জাতিক ফোরামে এই ব্যাপারে বিতর্কের সৃষ্টি করা যেতে পারে।
- ২। প্রয়োজনবোধে জাপান এবং অন্যান্য উন্নত দেশগুলোর সাথে সাব-কন্টাকটিং উপায়ে উৎপাদনের কথা ভাবা যেতে পারে।
- ৩। প্রয়োজনবোধে সার্কভুক্ত দেশগুলো এক সাথে এ ব্যাপারে আন্তর্জাতিক বাজারে নিয়ন্ত্রকদের উপর চাপ প্রয়োগ করতে পারে।
- ৪। বহিঃবাণিজ্যের পরিধি বাড়ানোর লক্ষ্যে গার্মেন্টস ইন্ডাস্ট্রির কর্মকর্তাদের মধ্যে উদ্যোগী ভূমিকা নেওয়া উচিত দক্ষতা এবং কর্মতৎপরতা দিয়ে আন্তর্জাতিক বাজারে সুনাম অর্জনের চেষ্টা চালানো। এ ব্যাপারে সরকারকে বিভিন্ন নীতিমালা প্রনয়ন শিল্প উদ্যোগীদের সহযোগিতা দিতে হবে।
- ৫। রপ্তানী উন্নয়ন ব্যুরো বহিঃবাণিজ্যের পরিধি প্রসারণের সক্রিয় ভূমিকা পালন করতে পারে। যে নির্ধারিত সময়ের মাঝে পোশাক রপ্তানী করতে হয়, সেই সময়ে যে সমস্ত আন্তর্জাতিক সমস্যার উদ্ভব হয় যেমন ব্যাংকিং সুবিধা, শ্রমিক নিয়োগ, ইত্যাদির জন্য আগে থেকেই মালিক পক্ষ এবং সরকারকে সচেতন হতে হবে। এবং প্রয়োজনবোধে এই জরুরী সময়ের জন্য একটি আলাদা বেতন কাঠামো নীতিমালা প্রনয়ণ করা যেতে পারে। শীপমেন্ট সুবিধা, আমদানী রপ্তানী সুবিধা, বনডেড ওয়ার হউজের সুবিধা ইত্যাদি বিষয়ে সরকার সক্রিয় ভূমিকা নিতে সচেষ্ট হবে। তাহলে জটিলতা অধিকাংশই এড়ানো যাবে।

- ৬। সরকার গার্মেন্টস শিল্প সেক্টরের জন্য সব বিষয় বিবেচনা রেখে সার্বিক নীতিমালা প্রনয়ণ করা জরুরী। বিশেষ করে বাংলাদেশে মেয়েরা বৈদেশিক মুদ্রা অর্জনের ক্ষেত্রে যে উল্লেখযোগ্য ভূমিকা রাখতে পেরেছে তার কথা বিবেচনা করে আরো বেশী কর্মসংস্থান সৃষ্টির লক্ষ্যে দেশীয় সেক্টরকে চাংগা করার পাশাপাশি সহযোগিতার ভিত্তিতে কিভাবে রপ্তানী সেক্টর উন্নতির দিকে যেতে পারে সেই সব বিবেচনা করে সরকার এই শিল্পে নিয়োজিত নারী শ্রমিকদের জন্য একটি বেতন কাঠামোসহ জাতীয় পরিকল্পনা প্রণয়ন করতে পারে। তাহলে কর্মসংস্থানের একটি নতুন সেক্টর গড়ে উঠার সম্ভাবনা অবধারিত।
- ৭। ৯০ দিন বা তার বেশী সময় যে কোন শ্রমিক-কর্মচারী কোন শিল্প প্রতিষ্ঠানে কাজ করলে তাহাদের সকলকে স্থায়ী নিয়োগপত্র ডুম্ব্লিকেট সার্ভিস বুক, পরিচয় পত্র দিতে হবে। দৈনিক কাজের সময় ৮ঘন্টা করতে হবে, আইনানুযায়ী দৈনিক ২ ঘন্টা এবং সাপ্তাহিক সর্বোচ্চ ১২ ঘন্টার বেশী সময় জোর করে ওভারটাইম কাজ করানো বন্ধ করতে হবে। বিশেষ করে নারী শ্রমিকদেরকে রাত্রি বেলায় ওভারটাইম কাজে বাধ্য করার প্রবণতা রোধ করতে এবং ওভারটাইম কাজের মুজুরী স্বাভাবিক সময়ের মুজুরীর দিগুণ হওয়া বাঞ্ছনীয়।

গ্রন্থপঞ্জী

১. নায়াস দীপকঃ ট্রান্সন্যাশনাল কর্পোরেশনস এণ্ড একপোর্ট, ইকোনমিক জার্নাল, মার্চ, ১৯৭৮
২. পরিকল্পনা কমিশনঃ দ্বিতীয় পাঁচশালা পরিকল্পনা, ১৯৮০-৮৫, বাংলাদেশ সরকার, ঢাকা, ১৯৮০

FINANCING MICRO-INDUSTRIES IN ENGINEERING AND METALFABRICATION SECTOR: SOME POLICY IMPLICATIONS

A STUDY OF DHOLAIKHAL AND TIPU SULTAN ROAD ENTERPRISES

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1. INTRODUCTION

One of the basic attributes of the structural adjustment which the manufacturing sector of Bangladesh is presently undergoing, relates to the phenomenal upsurge of the engineering and metal fabricating microindustries. Despite significant dearth of current knowledge about the sector, the perceptible degree of entrepreneurial dynamism demonstrated by these units is increasingly gaining recognition on behalf of the researchers, policy makers and donors and concerned section of the public.

The potential of the small engineering and metal-working units obviously lies in the realisation of the considerable backward and forward linkages which they exhibit, particularly by strengthening existing linkages with the agricultural sector through developing indigenous production capacities for agricultural machineries and by establishing durable linkages with their large scale counterparts through subcontracting programmes. Because of the variety of their products and services engineering and metal fabricating micro units are normally able to provide efficient import substitution and thus save substantially the scarce foreign resources of the country. Whilst metalworking micro-industries sector is ideally suited for the transfer of improved technology, opportunities exist for developing labour intensive metal fabrication shops. Thanks to their universal nature of productive activities, the sector has great potentiality for diversification. Moreover, it is a sector that further employment, locational and skill acquisition objectives.

However, the sector comprising of these engineering and metal fabricating microenterprises has the intrinsic problem of its almost total

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dependence on imported raw materials, which results into high cost of production. Thus, although an ample and growing demand exists for a wide variety of engineering goods, these high costs make it difficult for the present and domestic producers to compete effectively with imported engineering products, some of which are lightly taxed whilst others come under variety of trade and donor agreement. But there are reasons to believe that these small engineering and metal-working units are starving for capital in addition to many other external and internal constraints. Due to the high turnover of these units and rather high capitalisation value in the current context of inadequate development of institutional financial sector to cater to the needs of the small enterprises, these firms have to resort to informal sector for meeting their financial requirements at considerable high rate of interest. Lack of finance forces the entrepreneurs to use second hand machines, inferior methods of production and inefficient techniques of procurement and marketing. On the other hand this problem in fact is so acute and extensive that all other problems, whether of inadequacy of raw material or shortage of power, labour or marketing turn out to be in ultimate analysis a problem of finance. It has been revealed in a study that institution of proper financial assistance policy in this sector, ensuring increased inflow of resources, will bring increased returns to scale, enhance allocative efficiency, promote domestic resource mobilisation and subserve the equity objectives.

In this context, the present paper starts with reviewing the perception of financial constraint of the entrepreneurs of these engineering and metal-fabricating micro-units located in the most important growth centre of the sector viz. Dholiakhali and Tipu Sultan Road of Dhaka city and then goes on to examining the modes of financing their various requirements¹. Assessing the financial viability of these frontier enterprises, the paper attempts to formulate some financial policy implications with a perspective to attain an optimal equilibrium within the present financial regime.

11. DATA AND METHODOLOGY

Data and information used in the present paper are primarily derived from a special sample survey randomly selected 60 small engineering and metal-working units situated in Dholaikhal and Tipu Sultan Road

1. For the period 1970-85 the rate of growth of the units in the area has been estimated by the author to be 15.5%, which is significantly above the same of the small manufacturing sector of the country during the corresponding period.

carried out in early 1987². However, out of the 60 administered questionnaires, 9 schedules could not be processed due to incomplete or inconsistent answers. The sample survey results were significantly complemented by a number of conversational interviews with knowledgeable informants ((BSCIC officials, office bearers of local entrepreneurs' association, other major actors of the sector besides the entrepreneurs, etc.).

III. ENTREPRENEURS' PERCEPTIONS ABOUT THEIR CONSTRAINTS.

For a capital-scarce country like Bangladesh, efficient use of capital is an issue of overriding importance. To this end, level of utilisation of already installed production capacity is one of the appropriate measures of efficient use of capital. On the other hand the average share of idle capacity on the total technically possible production capacity of the surveyed units has been found to be very high (more than 60%). In that case, instead of asking the respondent entrepreneurs to enlist their problems (in order of importance), during the survey they were requested to mention the factors (in descending order of importance) limiting higher level of utilisation of capacity in their firms.

Several factors have bearing on the rate of capacity utilisation, which include, technological requirement, market condition, resources of the firms (particularly working & capital), government policy, etc. Notions of the entrepreneurs regarding the unsatisfactory state of capacity utilisation presented in Table 1 reveals that inadequacy of working capital has been identified by more than majority (58.8%) of the units as the single most important factor and it figures significantly (31.3%) as the second most important factor. More than one fourth of the respondents deemed lack of demand for the goods and services of the units has contributed most to keeping installed capacity idle. Amongst the inputs, unavailability of skilled labour appeared to be a matter of more concern (9.8%) than raw material constraint (3.9%). However, skilled labour shortage figured prominently (37.2%) as the single most important second factor.

2. According to a BSCIC survey of 1985, there were a total number of 519 units in Dholaikhal of which 100 were manufacturing, 42 repairing and servicing, 118 scarp reconditioning and 158 scarp trading units. The number of units in Tipu Sultan Road as per this survey was 68. BSCIC enumeration covered basically the units registered with them and thus potentially left out numerous informal enterprises. Moreover, since this listing has not been updated since, these figures under-reflect the size of the sector in the survey area.

Interestingly, one of the respondents (classified under 'others') mentioned 'inability to expand capacity is hampering his rate of capacity utilisation' as his most important problem, i.e. addition of another set of particular machine would have enhanced the rate of utilisation of existing technological facilities.

As it appears from the Table, on the whole, the entrepreneurs largely associate their constraints, in the process of operation, to supply related issues, amongst which working capital need is predominantly important. At the same time concern relating demand aspect is quite discernible. Whilst, relatively small firms were quite univocal about working capital need, the large firms voiced concern about sluggish demand.

During the discussions with respondents it was revealed that though the entrepreneurs perceive both fixed and working capital to be their major initial constraints, lack of funds for meeting working capital requirement happens to be their primary concern. When the respondents were asked to indicate the stage of production cycle where financial assistance will be most beneficial, an overwhelming majority of the firms (80%) mentioned it to be the pro-production stage i.e. finance is mostly needed to cover the expenditures necessary to a job order into operation (See Table 2). 12% of the respondents maintained that financial assistance would be most fruitful if it can finance the expenditures relating to market promotion and maintaining stock of produced goods. Whilst finance is no problem for the entrepreneurs when a job is already in the production process, a section of the entrepreneurs pointed out that support to sustain recurring expenditures at the beginning of each month (overhead costs, wages, etc.) will most appreciated.

TABLE-1 : Perceptions of the Entrepreneurs Regarding Factors Affecting Capacity Utilisation

	First Most Important		Second Most Important	
	Factor		Factor	
	No. of Units	%	No. of Units	%
1. Lack of work	13	25.5	14	27.5
2. Inadequate working capital	30	58.8	16	31.3
3. Raw material constraint	2	3.9	1	2.0
4. Unavailability of skilled labour	5	9.8	19	37.2
5. Others	1	2.0	1	2.0
	51	100	51	100

TABLE-2 : Perception of the Entrepreneurs About the Stage of Production Cycle When the Financial Assistance will be Most Beneficial

Stage	Number of units	%
1. Procurement and organisation		
Production	40	80
2. Actual production process		
	1	2
3. Marketing and maintaining stock	6	12
4. Recurring expenditure		
	50*	100

* One respondent, mentioned that he has need of any financial assistance at any stage.

TABLE -3 : Perception of the Entrepreneurs Regarding the Duration for Which Financial Assistance is Required

Time period	Number of units	%
Upto 1 month	23	46
Upto 6 months	13	26
Upto 12 months	8	16
More than 12 months	6	12
	50	100

Analysing Table 3, where the perceptions of entrepreneurs regarding the duration for which financial assistance is required has been presented, it becomes quite clear that these entrepreneurs expect is short term credit for sustaining the operation of the units. Whilst 46% of the respondents indicated that duration for which financial assistance to be provided may be less than a month, only 12% reckoned that it should be for more than a year.

Evidence provided in the foregoing paragraphs prompt us to conclude that even when the entrepreneurs of the small engineering and metal-fabrication sector are somehow able to gather the initial venture capital, but many of them fail to grow and sustain their production because of lack of adequate flow of credit to meet short-term operating expenses.

IV. FINANCING OF INITIAL CAPITAL

The first requirement of capital faced by the entrepreneurs is the initial capital or start-up capital. The total amount of capital invested by the respondent entrepreneurs to establish the units or to acquire effective

possession of them has been estimated to be TK. 58,43,000, which means the average size of initial investment per enterprise is approximately TK. 1,14,600.

TABLE-4 : Distribution of Enterprises by Size of Initial Investment

Range of Initial Capital (Tk)	No. of Units	%
Upto 50,000	17	33.3
50,000-1,00,000	14	27.5
1,00,000-2,00,000	12	23.5
2,00,000 and above	8	15.7
	51	100

There exist variations among the initial capital per enterprise invested at various points of time. There are enterprises with relatively modest investment of Tk.20-25 thousand at the one end and Tk.300-350 thousand at the other. Distribution of enterprises by their size of initial investment (after adjusting the figures of various years for inflation) reveals that the number of units in various size groups secularly decreases with the increase of the range. Thus, 33.3% enterprises belong to single most important group of units having as initial investment to the maximum of Tk.50,000, whilst 15.7% of the units belong to the upper bound range of Tk.2,00,000 and above.

Having established a notion about the size of initial capital of the micro units in the engineering and metal-working sector, it becomes important to generate some idea about the pattern of financing of this form of capital. As Table 5 exposes that whilst own capital of the entrepreneurs had been the main source of financing the startup capital (63.6%), borrowed capital also contributed significantly (36.4%). By own capital it has been meant here, resources generated by the entrepreneurs himself through sale of assets, savings, accumulation from other business, etc.³. The main sources of borrowed initial have been found to be friends (16.5%), relatives (12.3%) and financial institutions (5.1%). Under the head of 'others', the respondents basically included shares of the business partners, if any.

3. It was felt during the discussions with entrepreneurs, that they could hardly distinguish the relative contribution of various sources of their own resources, more so, when the mobilisation of these internal resources took place quite a long time back. As a result, due to the absence of reliable figures, information on breakdown of own capital could not be provided.

TABLE -5 : Financing of Initial Capital by Sources

Sources	Amount	%
I. Own Capital	37,15,000	63.6
II. Borrowed Capital	21,28,000	36.4
Friends	9,67,000	16.5
Relatives	7,16,000	12.3
Bank	3,00,000	5.1
Money-lender	10,000	0.2
Others	1,35,000	2.3
III. Total Initial Capital	58,43,000	100

Analysing the Table 4, quite number of aspects can not escape our attention. Firstly, the insignificant contribution of institutional sources in financing start-up venture capital in the sector. Secondly, friends and relatives, as in other sectors, here also together provide the bulk of the borrowed capital (79.1%) and an important portion of the total initial capital (28.8%). However, it has been shown elsewhere that 'friends and relatives' as sources of informal finance do not necessarily mean lending of capital free cost. Thirdly, the role of professional money-lenders (except in one case) appears to be totally absent. One obvious inference which can be drawn from this is that usury capital has not yet penetrated into the sector or has been totally squeezed out. However, evidences indicate that the above inference is not true. In that case it may be explained by the fact that the professional money-lenders are not so keen to finance the venture capital due to the risk factor involved, even when they have an opportunity to charge high rates for the money lent or they remain concealed under other forms of informal lending. Fourthly, it is quite evident, the entrepreneurs have to primarily rely on their own internal resources for financing start-up capital as against the external sources, including both formal and informal.

The above made observations are quite consistent with resources of the country and the occupational background of the entrepreneurs. The infrequent use of loans as a source of initial capital funds by the entrepreneurs is basically explained by the paucity of loanable funds resulting from under-developed and segmented nature of the capital market, high cost attached to such funds, and knowledge and information gap facing the borrower about possible sources of loans.

In our analysis no functional relation was found between the size of initial capital and pattern of financing. Nevertheless, there were attempts

on behalf of the respondents of 'larger' micro-units to ascribe their initial investment to borrowed sources (which may be a deliberate attempt to conceal their previous incomes).

V. FINANCING RAW MATERIAL PROCUREMENT

Although quite often the necessary raw materials are provided by the customers and/or financed by the advances paid by the customers. Raw materials are mainly procured by the small engineering and metal-working enterprises from the wholesalers and retailers (depending upon the size of procurement), situated in and around Dhaka City. However, it was also established during the survey that a significant portion of the units (29 units or 56.9% of the units) purchase a part of their raw material on credit or on deferred payment. Table 6 presents the extent of use of credit in procurement by number of units. According to the table, whilst 43% of the units do not make any use of credit purchase. 29.4% and 21.6% of the units can resort to credit to finance upto 25% and 50% of their raw material procurement respectively. Only 5.9% of the respondents mentioned they can take advantage of credit purchase to cover more than 50% of their procurement expenditure.

Taking into consideration the frequency at which procurement is done by the units and stability of the seller-buyer relationship it may be suggested that use of credit for financing procurement in the sector is not so wide even though 57% of the units are making use of it in various extent.

Table-6: Distribution of Enterprises According to the Share of Credit and/or Deferred Payment in Raw Material Procurement

% of Raw Material Procured on Credit and/or Deferred Payment	No. of Units	% of Units
Nil	22	43.1
Below 25%	15	29.4
26%-50%	11	21.6
Above 50%	3	5.9
	51	100

However when one considers the raw material suppliers' input to the working capital, the importance of credit purchase of raw materials

becomes more noticeable. The total amount of debt of the sample units to the raw material suppliers (and to an insignificant extent to the machinery and equipment dealers) has been found to be Tk. 14,43,850 which is 36.7% of the total current assets of the enterprises.

VI. FINANCING OF EXPANSION CAPITAL

Out of 51 responding units, 45 units mentioned to expanding their business during the last five year period (1981-85). In view of the constraints, inhibiting fuller realisation of the potentials of the sector, and the fact that a big section of the enterprises have only been established in 1980's, the finding that 80% of the units have expanded their business through additional investment of recent past only underscores the vitality of the sector. Total amount of expansion capital invested during the said period in the sample units has been estimated to be Tk. 53,26,300 i.e. Tk. 1,18,462 on average per enterprise.⁴

Table 7 presenting distribution of units by various levels of investment in expansion capital with amount exposes the 35.6% of the units accounts for 66.6% of the total invested expansion capital. These enterprise exclusively belong to the group of relatively 'large' small engineering and metal-working firms having higher level of capitalisation and employment. Moreover, the ratio of expansion capital to value added is higher in this group of firms than the same of the rest of the units in the sector.

Table-7 : Distribution of Units by Levels and Amounts of Expansion Capital Investment During 1981-86.

Range of Expansion Capital (Tk.)	Units		Investment in the Range Amount	Average Per %	Investment Enterprise in the Range.
	No.	%			
Upto 50,000	18	40.0	8,69,800	16.3	48,322
50,000-1,00,000	11	24.4	9,10,000	17.1	82,727
1,00,000-2,00,000	8	17.8	13,85,000	26.0	1,73,125
2,00,000 and above	8	17.8	21,66,000	40.6	2,70,750
	45	100	53,30,800	100	1,18,462

4. By the term 'expansion capital' in the present context we mean capital invested for acquiring new fixed assets and as well as for supplementing working capital. Appreciating that the respondents may not be able to recall precisely the amount at investment under specific heads we deemed it will be more appropriate to ask about investment for expansion of the enterprise in general. However, what was more relevant for our purpose is to study each of the loan incidence (formal and informal) with respect to its source and use.

The contributions of different sources of funds in various ranges of expansion capital investment have been depicted in Table 8. The table shows that in overall financing of expansion capital, informal sector loan appears to be single most important (27.8%) source, closely followed by refinancing through profit (26.4%).⁵ The contribution of the institutional loan is also quite pronounced (23.1%) in the total investment figure. Moreover, we find the relative role of various sources of financing are significantly different for various ranges of expansion capital investment.

According to Table 8, the engineering and metal-working micro-enterprises belonging to smaller investment group (upto Tk. 1,00,000) had to depend on informal sector credits to the extent of about 55% to finance the expansion of their business. The contribution of institutional finance is minimal in the oversaid investment groups (a little more than 4%). Whereas in the larger investment ranges (Tk. 1,00,000 and above), informal credits account for 14-15% only of the total investment in the ranges, and institutional loans about 30% of the same. On the other hand the proportion of reinvested profit is maximum (34.6%) in the highest investment range. Moreover, the share of fund from own sources (profit, sale of property, and other own sources) is also higher for the firms having bigger investment (it is 40% for the units with less than Tk. 1,00,000 investment). In other words, the units belonging to bigger investment range (which are incidentally the more capital intensive enterprises with bigger scale of operation) generate more investible surplus and capable of mobilising relatively more resources from internal sources. Thus amongst the sample small engineering and metal-working units two distinctive trends can be identified with respect to financing of expansion capital. Whilst for the small investment groups, in the structure of sources of financing of expansion capital 'informal credit—own resources' set dominates, in the case of larger investment group the set is 'own resources—institutional finance.

The above findings have important implications. Firstly, for the relatively smaller units of the sector informal credit is the predominant contributor to the financing of expansion and these units remain almost out of the coverage of the operations of institutional finance. When these units come up with significant amount of their own resources, they had to supplement their own capital with costlier credit. Secondly, whatever institutional credit

⁵ Refinancing through profit in this case means reinvestment of savings, generated in the small engineering and metalworking firms. Reinvestment of savings from other sources of income are included in 'other own sources'.

TABLE-8 Proportion of Expansion Capital Contributed by Various Sources of Funds

Range of Expansion Capital (Taka)	Profit		Sale of Property		Other own sources		Institutional loan		Informal sector Loan		Total Investment in the Range.
Below 50,000	20,88,000 (24.0)	38,000 (4.3)	1,05,000 (12.1)	45,000 (5.2)	4,73,000 (54.4)	8,69,800 (100.0)					
50,000-1,00,000	2,00,000 (22.0)	50,000 (5.5)	1,00,000 (12.1)	50,000 (5.5)	5,00,000 (54.9)	9,10,000 (100.0)					
1,00,000-2,00,000	2,50,000 (18.1)	5,55,000 (40.1)	1,00,000 (7.2)	2,70,000 (19.4)	2,10,000 (15.2)	13,75,000 (100.0)					
2,00,000 and above	7,50,000 (34.6)	-	2,50,000 (11.5)	8,66,000 (40.0)	3,00,000 (13.9)	1,66,000 (100.0)					
Total	14,08,800 (26.4)	8,43,000 (12.1)	5,65,000 (10.6)	12,31,000 (23.1)	14,83,000 (27.8)	53,30,800 (100.0)					

Note: Figures in the parenthesis denote percentage of row total.

has been disbursed in the small engineering and metal-working sector, it appears only the relatively larger units have benefitted from it. But for these units, internal resources remain to be the major sources of expansion capital funding.

Some observations can also be made if we compare the pattern of financing expansion capital with that of initial capital. First of all, it was found that the share of own capital is higher in initial capital (64%) than that of in expansion capital (50%). Secondly, the contribution of the institutional finance is less in start-up capital (5%) as against the expansion capital (23%). Thirdly, the informal sector loans account almost equally for financing expansion capital (28%) and financing initial venture capital (29%). However, it has been discussed elsewhere that the relative role of various sources of informal loans are significantly different in these two types of cases.

VII. FINANCING OF WORKING CAPITAL

According to the perceptions of more than majority of the entrepreneurs (59%), the main reason for the existence of unused capacity in the sector is the shortage of working capital. It may be testified that lack of sufficient working funds is the most significant factor that puts the engineering and metal-working micro-enterprises (particularly the 'smaller' units) in a conspicuously disadvantageous position. Other factors do aggravate their problems but they assume a secondary role.

The composition of gross working capital (i.e. current assets) is made of inventories, debtors and sundry current assets such as cash in hand/bank, advance deposits, etc. The capital structure-wise break-up of this item in its various constituents is given in Table 9. As we see inventories (stock of raw material and finished goods, work in progress etc.) comprise more than 77% of the current assets. promotions of holding of raw materials and finished goods has been found to be affected by the financial resources of the entrepreneurs or more precicely by the scale of operation of the units. Significant unrealised amount of account of already delivered goods and services (about 18%) and small amount of cash in hand and/or bank (only 4.7%)⁶ express the weak base and precarious liquidity position of the enterprises.

⁶ It is suspected that the respondent entrepreneurs to some extent understated the liquid amount at their disposal for meeting current expenses.

Table-9 : Composition of Gross Working Capital of the Sample Units.

Item	Value (Tk.)	% of current asset.
Inventories	+ 30,38,576	77.3
Cash in hand/bank	+ 1,84,751	4.7
Amount receiveable	+ 7,07,557	17.9
<u>Current asset</u>	<u>39,30,875</u>	<u>100.0</u>
Raw materials received on credit	-14,43,850	36.7
Advance received from the customers	+ 4,70,450	8.3
Own working capital	29,57,475	75.2

However, when the two important sources of financing working capital of the simple units are considered, we find share of suppliers credit (raw material) in the current assets is 36.7% and advance received from the customers contributed 8.3% only. Abstracting from other sources of external borrowing and accounting for the trade credits and production advances received by the enterprises, it was found that the own working capital of the same units is a little more than 75% of the current assets. It is noteworthy that the quantum of credit and advances granted to the units stands greater in comparison to the quantum of credit allowed by them to their customers.

But significant share of trade credit does not reflect the adequacy of working capital, mereso at the low level of customer's contribution. Obviously under such circumstances the units have to resort to borrowing from other external sources particularly from the informal sector to meet running and recurring expenditures.

The analysis of working capital structure reveals its fragile composition, inadequate liquidity and considerable dependence on trade credit and production advance. It is noticed that a positive association exists between these features with the scale of operation, i.e. smaller the firm, weaker the working capital structure is.

VIII FINANCING OF OUTPUT DISPOSAL

Marketing of output happens to be a very important factor which influences the production and determines the efficiency of operations of an enterprise. It is often argued, because of smallness in the scale of operation, poor financial position, competition from imported goods and large industry products and inadequate infrastructural facilities marketing may often become a leading constraint of development. Whilst these general propositions are also true for the engineering and metal-fabrication micro-enterprises some distinctive features of the sector regarding output disposal need to be pointed out.

The small engineering units situated in Dholaikhal and Tipu Sultan Road cater mainly to the local need but have a major market outside the capital, covering the rest of the country. The marketing practices of these units may be classified broadly under the following three heads:

- (i) catering (small) individual orders;
- (ii) Wholesale order supply;
- (iii) subcontracting;⁷

We know that the sector is predominantly service oriented. Those units which are engaged only in servicing they usually cater individual orders, placed directly by the customers and they usually depend on the local market. The units having production and assembling facilities along with servicing can take advantage of the wholesale orders and work as subcontractors of large industries. This group of units have markets of greater geographical coverage (particularly those involved in subcontracting). Table 10 gives the distribution of enterprises by their major marketing outlets. Preponderance of the units doing small job work is explained by the fact that though many of the units are involved in supplying wholesale orders and, occasionally, subcontracting these do not happen to be their main marketing practice.

Consequently, the small engineering enterprises do not have any marketing wing of their own which dispense with ready goods, as and when approached by the customers. In that case the output marketing

7. Subcontractor means a firm which contracts to do work for another company. The works include production of unique components and services which are incorporated in products manufactured by the subcontractor and furnishing standard components such as nuts and bolts, bearings, standard auxiliaries and supplies.

strategy centress not around disposal of ready goods and services but around finding appropriate work orders. It may be recalled 25.5% of the responding units mentioned sluggish demand as the main factor inhibiting fuller utilisation of their existing capacity.

TABLE-10 : Distribution of Units by Major Marketing Outlets

Major Outlet	No. of Units	%
Catering individual orders	33	65.0
Wholesale order supply	12	23.4
Subcontracting	6	11.6
	51	100.0

In that case it may appear that problem of financing output of small engineering workshops, if there is sufficient effective demand for the goods and services provided by these enterprises, is essentially problem of financing production. And as we have discussed earlier, whilst a significant proportion of the production cost is covered by the advances paid by the customers, 80% of the respondent entrepreneurs have indicated that the necessity of financial assistance is most acute at the preproduction phase. At the same time, 12% of the proprietors of the responding units mentioned that financial support will be most appreciated if it is targetted for financing marketing and maintaining stocks (both raw material and ready goods).

The Liquidity position of the small engineering units becomes vulnerable when they are sometimes required to sell on credit which involves problems of delayed payment and defaults. During the survey it was found that 32% of the sample enterprises were found to sell on credit or had unrealised amount for already delivered goods or services. And for those who had such pending payments to their credit, 18% of their current asset or 23.9% of the own working capital, i.e. Tk. 7,07,537 constituted that amount. Although the entrepreneurs ruled out the possibilities of default, it was reported that repayment delay in these kinds of transaction is very high particularly in the case of supplying government orders.

IX. ANALYSIS OF FINANCIAL RATIOS

To assess the overall financial status and strength of the small engineering and metal-working enterprises, we have analysed three important financial indices viz. current ratio, liquidity ratio and proprietary-ability ratio.

Current ratio (CR) is a measure of liquidity of a firm, i.e. ability to pay short term creditors and reflects adequacy of working capital. This is the ratio of current assets to current liabilities, i.e.

$$CR = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

where current assets mean sum of the values of stores and spares, stock in trade (raw materials, finished goods, work in progress), sundry debtors, cash balances at hand, loans and advances, and current liabilities mean acceptances, sundry creditors, interest accrued and other liabilities and provisions.

The current ratio of the sample units on average has been found to be 1.65 indicating that the current assets of the units are only little more than 1.5 times the current liabilities. Obviously, it is an expression of a very modest financial situation as in ideal case CR should figure between 2.5 and 3.0. Thus the estimated OR of the macro-enterprises reveal that their strength of working capital and their solvency in regard to current operation are bordering on the margin.

Current asset ratio is usually discussed along with liquidity ratio (LR) which is a more severe test for liquidity as here strictly. Liquid assets are considered and it more precisely expresses the adequacy of working capital. LR is worked out as follows,

$$LR = \frac{\text{Cash, Immediately Realisable Good, Debtors Loan and Advances Considered Good}}{\text{Current Liabilities}}$$

The average LR for the responding units has been estimated to be 0.68 which expresses their stringent financial position. The sample engineering units can mitigate their immediate liabilities to the extent of 68% by the quick assets at their disposal. The LR and CR decline noticeably with decrease in scale of operation (in terms of value added) indicating more vulnerable liquidity position of the smaller units of the sector. Considerable frequent purchase of raw material mentioned earlier, results from strained liquidity position. The CR and LR of the metal-working micro-units confirm the assertion of entrepreneurs and our foregoing analysis that the small engineering and metal-working sector (more so the 'smaller' among the 'small') are facing financial difficulties to liquid resources constraint.

Under the circumstances it becomes necessary to evaluate the prospect of the sector in terms of long term financial strength, index of

which happens to be proprietary-liability ratio (PLR). PLR is worked out as

$$PLR = \frac{\text{Net Worth}}{\text{Total Liabilities}}$$

Where net worth means present value of assets minus all liabilities and total liabilities include both current and long-term liabilities. PLR is also an expression of extent of entrepreneur's own investment and the extent of borrowed funds.

The average value of PLR has been estimated to be 1.83. It means that the share of the entrepreneurs to the total assets of the sample unit is about 65% and the level of total indebtedness of the units to various forms of creditors is around 35%. Higher the PLR, the more comfortable is the position of the creditors because it means they can be called up to suffer losses only if the losses are very high. On the other hand, a higher PLR than CR may be interpreted as the sample units are better endowed financially in long term sense in comparison to meet its current liabilities.

The low liquidity ratio does not contradict high rate of profit as we have seen significant portion of profit is being used for refinancing of investment. The entrepreneurs attempt to compensate the inadequacy of their working capital by accelerating its turnover. Concomitantly, it appears the entrepreneurs in their attempt to optimize resource allocation and minimise cost of borrowing are investing their own funds relatively more in fixed assets which in turn is enhancing their credit worthiness in the credit market.

On the whole, the operational financial position of the small engineering and metal-working units can not be termed anything better than modest, although, there indications that the long term financial position is quite prospective provided proper arrangements can be made for fresh capital inflow to the sector for easing the present operational financial difficulties.

Significant reliance of the small engineering and metal-working sector's entrepreneurs on internal sources in financing initial capital requirements and on reinvestment of profits in financing expansion capital reflects reasonable rates of return accrued to them from their enterprises. But internal financing through reinvestment of profits, sale of property, and other own sources is hardly enough to meet their purpose because of insignificant retained earnings, high consumption of profits, ever

increasing production cost, considerable underutilisation of production capacity, repayment delays, etc. In such a situation limited use of external funds by the entrepreneurs is not a matter of choice, but a consequence of their restricted access to such funds following particularly from formal credit market. As a consequence, the small entrepreneurs of metal-fabricating sector are left with no other alternative but to fall back on informal sector lenders, even though loans obtained from them are inadequate and bear high interest rates.

Under the circumstances, the growth and expansion of the micro-industries of engineering and metal-working sector of Bangladesh, particularly during their initial stages is likely to be extremely difficult unless arrangements are made to ensure adequate flow of institutional credits to the sector, which may remain a far cry unless the formal credit market is consciously developed to suit the circumstances and geared to meet the specific needs of the enterprises. Along with this, it may not be possible and/or desirable to avoid altogether financing by informal financial intermediaries at the present state of affairs. Given a low rate of savings, general paucity of investible funds, underdeveloped nature of banking system, informal sector lenders have a significant role to play in mobilising resources and investing them efficiently.

X. CONCLUDING REMARKS: DEMAND FOR CREDIT AND DEVELOPING A MODALITY FOR FINANCING MICRO-INDUSTRIES OF ENGINEERING AND METAL-FABRICATING SECTOR

Demand for credit in the small engineering sector arises from two broad sources, viz. demand for new venture capital and demand for expansion capital. The two main components of the latter happen to be funds necessary for balancing, modernisation, renovation and new acquisition of fixed assets, and funds necessary for meeting working capital need.

It was beyond the scope of the present paper to estimate the effective demand for start-up capital for setting up new units in the sector. Similarly, though our survey indicates that investment in the line of restructuring of the fixed assets of a considerable number of units would have perceptibly enhanced the economic viability of the sector, our study did not attempt to generate any indicator to capture the demand for funds on this account. On the other hand, the study revealed that the effective rate of utilisation of already installed production capacity is very modest (around 40%) and inadequacy of working capital has been identified by more than majority of the respondents (around 60%) as the factor responsible for an idle capacity of such magnitude.

Under the circumstances, to have at minimum estimate of demand for credit in the sector, we may estimate the volume of capital that will be necessary at least to utilise existing productive assets at a reasonable level. Thus if we assume that an effective rate of 85% is a technically feasible level of capacity utilisation and there is sufficient effective demand for goods and services provided by the small engineering units, then the supplementary amount of funds necessary to meet the working capital need of the sector of the country as a whole (with the units presently, having on an average, a working capital to the tune of TK. 77,000) would be TK. 392.7 million (on the basis of 1982 BSCIC estimate of number of units in the sector). But on the basis of the more recent estimates of number of units (1985), available for certain areas, the supplementary working capital requirement for the existing 2000 units of Dhaka district and 587 units of Dholaikhal and Tipu Sultan Road areas would amount to TK. 327.5 million and TK. 96 million respectively.

Thus, in the backdrop of such an assessment of the potential working capital requirement, the amount earmarked by BSCIC-NCBs for disbursement amongst the units of the small engineering sector in Dholaikhal and Jinjira (TK. 50 million) appears to quite modest. On the other hand, the estimate about the size of the informal credit market indicates that, till the moment it is being able to only partially meet the potential capital demand of the concerned units. Under the circumstances, to satisfactorily neutralize the demand-supply gap of credit, it becomes necessary to increase the quantity and improve the quality of institutional finance. But what is possibly no less important is channel innovative efforts to muster and develop the nonconventional (but may be traditional) sources of finance and diversify the choices of the borrowers.

Our study revealed that the relative shares of informal credits do not significantly vary with respect to financing of venture capital and running capital, but the relative shares of informal credit cut across the size of the units and scale of operation. The enhanced role of informal finance in relatively smaller units in the micro-industries of Dholaikhal and Tipu Sultan Road is explained by these units severely restricted access to the institutional sources. Due to their magnitude of dependence on the informal credit market, the smaller amongst the smalls have to compromise with the more stringent offers of informal lending practices. A close scrutiny of the pattern and terms of borrowing reveals, that the entrepreneurs are predominantly in need of short term, small size loans taking the form of bridge financing. Given the intricacies involved in such types of loan operations it should be the effort of the institutional sector to

offer services in this respect more economically and efficiently, and not discriminating the small borrowers. Given the situation, so as to evenly distribute the benefits of credit market operation the first thing which is to be advocated is redirection of the flow of institutional funds in favour of smaller units (having a fixed asset investment upto Tk. 2,00,000, working capital upto Tk. 50,000 and a credit demand limit of Tk. 1,00,000). Secondly, restructuring of the loan packages by attaching importance of disbursement of small loans with relatively smaller repayment period (may be one year).⁸ This would have not only improved the economic viability of the smaller units but also enhanced their bargaining capacity in informal credit market to which they will have to resort to meet their excess credit demand.

When we consider the forms of developing informal credit market for the small engineering sector, it may be mentioned that the bulk of the informal credit funds was provided by the small engineering enterprise owner themselves. Given the rate of return from the investment in the sector one of the viable methods of resource mobilisation for the engineering and metal-working micro-units would have been organisation of Savings and Loan Associations of the entrepreneurs, whose economic function would be to obtain savings (deposits) from the members and invest the funds financing small engineering workshops (giving preference to the members).⁹ Emergency of such savings and credit unions would have possibly effectively squeezed the role of relatively exploitative lending practices in the informal credit market.

On the other hand, we also found that savings and accumulations generated in other spheres of economy have been used to finance small engineering units. In order to tap these resources and augment the inflow of fresh funds, setting up of indigenous finance company(ies) may be considered. This type of finance companies will be an intermediary (usually a partnership firm or in rare case private or public limited company) set up for making profit from the business of lending money

8. In this regard it will be of special interest to observe the modalities of financing of the envisaged Small Scale Industry Bank.

9. This form of organisation should be differentiated from Chit Fund system (rotating credit arrangement), which is not always profitable for the depositors and where it is often run by the traders who use the funds to meet their own working capital need and where the funds are frequently used to for non-productive purposes.

raised by ways of subscribed capital or borrowing. The finance companies may perform many of the bank functions such as bill discounting, collection of remittances, maintain deposits, offer security, etc. It is reckoned that establishment of such companies would not only rationalise the interest rate structure in the informal credit market of the small engineering and metal-fabrication sector, but also broaden the opportunity of efficient allocation of funds and dissolve the segmental barriers existing in the credit market.

These financial innovations would be able to rationalise transaction costs of loan operations, reduce the default risk, minimise the monopoly profit and narrow the interest rate differentials in the credit market. However, systematic development of these forms of financial intermediation presupposes that they would be built into the general macro-framework of the monetary and fiscal policies of the Bangladesh Bank and GOB.

CHOICE OF TECHNIQUE AND SOURCE OF INDUSTRIAL FINANCE: THE CASE OF STEEL REROLLING INDUSTRY

NAIMUDDIN CHOWDHURY*

SECTION 1

A STATEMENT OF THE PROBLEM, RESEARCH HYPOTHESES, METHODOLOGY

Economists typically model decisions of firms maximizing present value or profit subject to resource constraints, technology, and prices. Institutional considerations are usually neglected. Government regulation, rationing, behavioral stereotypes, personal connections, and ownership form may be introduced as additional constraints, or modifications of prices and objectives. Yet in many economies, particularly those in which government intervention is selective and variable, it is not clear that the effect of policy can be approximated with price effects or simple constraints. Rent seeking activities within the framework of regulation or public resource allocation may distort the behavior of the regulated firms or the recipients of publicly disbursed resources in complex ways.

In this paper we examine detailed data for 57 firms in the Bangladesh steel re-rolling sector to see how interaction with the financial system affects efficiency. We investigate variation in technical choice and efficiency—measured using frontier production functions as well as rate of return—to see how source of finance, ownership, and various characteristics of the owner affect this choice. We conclude that performance is indeed significantly related to institutional structure, as we expected. In particular, firms which are financed by the government development banks are less likely to use locally procured machinery, and are likely to be less efficient and less profitable. Access to short term working capital, in contrast, improves performance. Firms which are incorporated as private limited companies are out performed by other firms. Firms whose owners have many other enterprises are likely to perform more poorly than firms with owners less stretched, but owner experience, while important for obtaining commercial bank loans, does not affect performance. Younger firms outperform older firms in this very young industry.

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SIGNIFICANCE OF THE PROBLEM

Ever since the debate of the 1950's in the pages of the Quarterly Journal of Economics culminating in the influential monograph written by Sen in 1960 [1], the study of choice of technique in industry within developing countries has generated sustained interest. In countries with few natural resources but with a severe problem of poverty and unemployment, such as Bangladesh, the choice of technique in modern industry must be judged to be even more important than it would otherwise be. This is because governments in these countries, as elsewhere within the developing world, consciously have directed investment, both public and private, into modern industry, and because the order of magnitude of the investment has been relatively large so that frequently there has been a sizeable potential for labour absorption by modern industry. In practice, however, the contributions to employment of industrialization within developing economies too often have been discouraging [2]. Because of complex combination of forces, capital and import intensive techniques frequently have been preferred to labour intensive ones [3,4,5,6,7].

The anti-employment bias in entrepreneurial behaviour has been investigated within both national and international contexts [8,9,10,11,12,13]. Reasons suggested for it include: (a) an ad hoc regime of prices for the primary inputs labour and capital, which by artificially raising the relative costs of the former, puts a premium on an excessive use of capital; (b) superiority of the output attainable with "best practice" techniques (in terms of more consistent, controllable output quality [14]. (c) more advantageous properties of machine-paced operations which in part neutralise constraints arising from shortage of skilled supervisory labour, as also from possible strains in industrial relations; and, finally, (d) the absence of competitive pressure in the product market which makes it both desirable and viable to import 'developed country' technique lock, stock and barrel, secure in the knowledge that conditions of near monopoly would permit both high profits and the quiet life. [15,16].

Discovery of the mechanisms which account for choice of technique, can make a significant contribution to the design of policy. The need for productive employment in Bangladesh cannot be emphasized too strongly. If the selected technology is far from optimal (in the sense of failing to maximize net social returns) and is capital using too, research should seek to explain this waste, in the hope of providing means for its

correction. If an output employment trade-off exists, its dimensions too should be explored.

In Bangladesh, government has actively promoted industrial investment. One of the principal instruments it has relied on is credit, disbursed through industrial development banks and nationalized commercial banks. Our thesis is that industrial long term credit has done more than relax a few of liquidity constraints of entrepreneurs. Special features of credit allocation in Bangladesh—politicization of the process, side payments to bankers and machinery importers, over valuation of owner's equity, over invoicing of machinery imports, and poor repayment record of borrowers—have made the pursuit and allocation of credit an enterprise with its own organization. These features of the credit system bias the choice of technique. Because much of the credit is foreign aid, tied to foreign purchases, and because transfer of funds and side payments are often effected through international transactions, there is a bias toward the use of expensive imported equipment.

In the steel rerolling sector, another set of options face the entrepreneur. From the ship-breaking industry (which reduces old ships to scrap metal and parts), not only the basic input of steel rerolling can be obtained, but also capital equipment: rollers are cut from ships' drive shafts, electric motors are salvaged and rebuilt from freight moving gear.

RESEARCH HYPOTHESES

Our principal hypothesis is that choice of technique in Bangladesh is linked to source of finance. We expected to find that aided projects are likely to use imported equipment more intensively than projects financed without long term loans. We expected this pro-capital, pro-import bias to undermine economic performance. Three explanations for this expected relationship which we boil down to two formal hypotheses—appeal to us.

a) Relative factor prices differ with the source of finance. Since finance capital is available at relatively low cost to those who have access to aid, entrepreneurs with such access treat capital as relatively more abundant than those who have no such access.

b) Entrepreneurs with access to aid may take part of their windfall in the form of the non-pecuniary benefit of a "quiet life", by using relatively costly but trouble free technology. This hypothesis is a variation on L.J. White's analysis of technical choice in Pakistan [15]. White assumes that

technology which is more capital intensive is likely to make fewer demands on the owner. If we assume further that the owner will take part of the grant equivalent of subsidized finance as increased private profit and part as reduced effort, then access to aid implies the choice of more capital intensive technology. (However, private profits and economic returns may not have a one-to-one correspondence to each other).

c) Entrepreneurs in aid-financed projects may be under pressure to acquire certain types of machinery. Unlike hypotheses (a) and (b) in which owners are assumed to make their own choices, we assume here that the owner faces a bundled option: aid donors, bankers, indentors all have interests which the owner must accommodate or he will lose the aid. This is most clear, but not confined, to the case of tied aid. Particularly where rent seeking is common, various concessions to interests of those with power or influence may be expected. Thus the technology adopted when aid finances a project may not represent the choice of the owner if he were simply offered finance and sent to market.

These three hypotheses may be combined into two which will be the focus of our formal analysis: the relative price hypothesis (a) implies that all producers, regardless of source of finance, are minimizing costs over a production function with only two arguments, capital and labour. Therefore the source of finance should have no effect on technical efficiency; all producers are equally likely to be on an isoquant of the production frontier, though not on the same point on it. The other two hypotheses (b) and (c) imply that producers are not minimizing costs in terms of their capital-labour choice. Rather, the producers either are not permitted to choose a cost-minimizing input mix (hypothesis c), or they are maximizing utility in a framework in which their effort enters as a third argument into the production function. Thus the relative price hypothesis implies technically efficient but economically inefficient production in aid-financed projects, while the other two hypotheses imply technical inefficiency in such projects.

METHODOLOGY

We want to answer three questions about the steel re-rolling industry:

1. Is there much variation in choice of technique?
2. Is there much variation in technical efficiency?
3. Is variation in technique and efficiency systematic? In particular, is source of finance a significant explanatory variable?

Our central tool in addressing these issues is the frontier production function. Following Aigner [17], we assume that variation in output associated with given inputs derives from two sources. A symmetric error term (v) is due to uncontrollable random events such as luck, weather, or measurement and reporting errors. This is assumed to be distributed IID $N(0, s_v^2)$. In addition to the stochastic term, is another (u) which represents controllable deviation from maximum potential output. The u term is always negative, since it represents inefficiency.

The advantage of this stochastic frontier production function over a deterministic one (in which all firms produce as or below potential level) is three fold. First the computational problems have been solved and standard packages exist for estimation. Second, the statistical properties of the estimated coefficients are known. Third, the method is not as sensitive to outliers as programming techniques, which fit an envelope over all points.

A principal disadvantage of the stochastic frontier production function relative to deterministic versions is that one no longer can assume to know the efficiency of individual firms. The noise introduced by the " v " error interferes with measurement. Nevertheless, since the mean of the symmetric error term is zero, any systematic differences in distance from the frontier still can be attributed to differences in technical efficiency.¹ So if aided firms are less efficient as a group than non-aided firms, we may draw conclusions.

In addition to the technical inefficiency of firms, we have looked at two other indexes of performance. These are total factor productivity and economic profitability. Factor productivity is simply the annual value added divided by the flow of factor services. We assume that the flow of services equals the wage bill plus ten per cent of the value of land plus twenty per cent of the value of working capital and imported capital goods plus twenty five per cent of the value of local capital goods. The difference in rental rates on local and foreign capital goods reflects differences in depreciation. Profitability is value added less the costs of labour, land and depreciation (profit); divided by the value of fixed and working capital.

1. Traditionally, following Farrell, technical efficiency is measured as the ratio of actual to potential output.

Return to owners' equity is profit, less debt service costs, divided by the value of capital and land, less loans.²

All three of these indexes measure rates of return to the enterprise. The total factor productivity measures output per unit of total input. Profitability is the rate of return to capital. The return to owners equity measures the owner's own gain relative to his net contribution of capital and land. Total factor productivity is very similar in conception to the Farrell index. Both measure actual value added relative to a weighted sum of inputs. In this case, although the weighting schemes are quite different (and the Farrell index is much more costly to construct) the indexes give very similar results. In fact, the frontier production function index of performance, profitability, and total factor productivity have pairwise correlation coefficients above 0.95.

Our empirical work consisted of the following series of exercises. First we looked at input proportions to see whether these depend on scale, ownership, and financial characteristics. Then we looked at efficiency/rates of return to see whether these depend on scale, ownerships, financial characteristics and input proportions. In the first exercise we used ordinary least squares. In the second, we used interactive techniques to measure technical efficiency, and two stage least squares to analyse source of inefficiency.

Our data all are newly gathered. Field officers visited each of a sample of 66 steel rerolling firms operating in Bangladesh, and representative of the underlying technological diversity in the SRI. Nine firms which are not yet in full operation were dropped from the sample, leaving us with the population of 57 active semi-automatic and manual steel rerolling operations in Bangladesh. Each firm was visited, repeatedly if necessary, to obtain information on inputs and outputs (including stocks) capital, labour, financing and owner characteristics.

HOW WERE VARIABLES MEASURED ?

It suffices for present purposes to outline how capital and financial values were measured.

2. If owners are not servicing their debts, we understate the return to their equity.

Land values were measured in terms of resale prices. Buildings were dealt with in terms of replacement costs. Costs of each major class of buildings were first separately measured, and then added to yield totals. Similarly, costs of plant and equipment were measured in terms of replacement costs, by class of equipment, and then aggregated to yield totals. Working capital was measured as the sum of four components, namely raw material stocks on the day of survey, work-in-progress at the same time, finished goods stocks, and stocks of other stores and spare. Intensity of utilization of plant was measured by days operated in the last year preceding the survey. The variable was measured by netting out holidays and the number of days lost due to plant shut-down from 365. gross output was measured by the products of the intensity of utilization and revenue earned from output produced per day. Value added was arrived at by subtracting the sum of raw materials and all other intermediate costs from Gross output. The financial variables were foreign currency long-term loans from DFIs, foreign currency long-term loans from commercial banks, local currency long-term loans from commercial banks and, finally, working capital loan from commercial banks. Finally, entrepreneurs were asked if they were satisfied with their equipment: we set up a dummy variable in this regard.

SECTION II

STEEL RE-ROLLING INDUSTRY IN BANGLADESH

ORIGIN OF STEEL RE-ROLLING IN BANGLADESH (BD)

Steel re-rolling industry (SRI) is typically a component of the larger steel industry in any country, and its principal function lies in using steel sheets, billets or plates. It transforms the latter, after due processes in terms of cutting and shearing, into steel rods, flat bars, angles, etc. The basic technology of SRI, even in the developed market economies, remains rather simple, in the sense that manufacturing precision and a high degree of consistency in product characteristics are not as important as it is in certain other areas of steel manufacturing, e.g. stainless steel or steel alloy making. Partly as a result of this, the products of SRI tend to be used in certain, but not all, branches of civil engineering works, particularly construction of course, construction happens to be a significant part of gross fixed capital formation (GFCF) in any country. According to Sir W.A. Lewis, land and buildings typically account for about three-fifths of investment in developing countries [Lewis, 1955]. It seems proper that construction would account for about half, if not more, of such a proportion. In Bangladesh (BD), products of SRI have been observed in sample

surveys to account for no less than 20% of construction costs in residential investment in 1976/77. The forces making for the relatively rapid inception of the SRI in BD succeeded an onset of the acceleration of the rate of GFCF in BD in the 1970s.³

Observers familiar with Bangladesh's economic history know that 1972-75 has been a period of a combination of reconstruction of a war-ravaged economy, and experimentation with socialist-type industrial policy that beget mixed results, and a lack of economic stability, both monetary and real, both domestic and international. The rate of increase in real GFCF during the period was torpid. From 1975-76, however, a conscious attempt was made to reverse the direction of policy. Gradual liberalisation of the evolution of the 'formal' sector in industry, trade and finance was the key-word in the ten years or so after 1975. This was accompanied by a significant increase in the rate of real foreign assistance to BD. Consequently, the rate of GFCF increased from less than 4% during the early 1970s to something of the order of 10-12% in the late 1970s. Besides, quite autonomously, the government (GOB) decided to give a fillip to construction, within municipalities, of multi-storied buildings via the provision on liberal basis of concessionary loans beginning from 1978. Also, infrastructure building activities have been reprioritised. Thirdly, one of the growth areas of lending by the Development Finance Institutions (DFIs) after 1976 was coastal and inland shipping. This development brought about an unprecedented exposure by Bangladesh business to the prevailing conditions in shipping abroad. As it happened, world shipping ran into tremendous over-capacity just when demand for building materials in Bangladesh looked set for significant growth. The availability of hundreds of tons of steel sheets from old ships bought at crashing prices, coupled with preferential duty treatment, released one of the most effective constraints to a rapid expansion of SRI in Bangladesh from 1977-78 onwards. The industry is basically a creature of the late seventies, and arose as if from nothing to service a demand that was more properly seen as a result of policy changes than of evolutionary economic behavior of agents. As we shall see below, the particular circumstance involving the emergence of ship-breaking as an alternative source of raw

3. Also, because a good deal of the output of this industry used, at least up to 1985, slip across border to India, the outlook of the growth of GFCF in the several eastern states of India that are contiguous to Bangladesh may also have been of consequence to its inception.

materials (alternative to mainly imported steel billets) for the SRI has had interesting implications for the choices confronting entrepreneurs as regards equipment to install.

WHO ARE THE ENTREPRENEURS IN SRI ?

In raising this question, we are of course primarily interested in the following aspects: what is the general character of business exposure on the part of the sample of entrepreneurs at hand ? In particular, besides being engaged in SR manufacturing, are they also engaged in certain other aspects of steel products trade, like wholesale in SRI products, or in construction business ? How much of prior experience, not necessarily of a highly technical nature, do they bring to bear upon their career as manufacturers of steel products ? When were these enterprises in fact set up, and how recent are they ? What is the form of business organization chosen by these entrepreneurs ?

We intend to measure the extent of general business exposure by the number of business enterprises other than the one engaged in SR manufacture in which the sample entrepreneurs have a controlling interest. It is found that 32 out of 57 entrepreneurs, or about 56%, have a majority interest in 3 or more other business establishments. There is not a single entrepreneur that is giving his undivided attention to his re-rolling concern. The entrepreneurs therefore demonstrate a clear preference for being diversified as distinct for specialized.

To a certain extent, the character of diversification takes its cues from the fact that the entrepreneur also happens to be a steel re-roller. The evidence is that 35 out of 57 (or 61.4%), entrepreneurs have at least one other business establishment dealing in steel products. Frequently, steel re-rolling units were set up by ship-breakers motivated by the fact that there are a great many parts and components on a ship that, after due processing by engineering workshops and foundries, can service running re-rolling units. Such processing skills are fairly largely available within Bangladesh (see below for examples). Ship-breakers' main function of course is to wholesale a wide variety of useful metals (steel, brass, copper), used electrical equipment on board (motors, refrigerators, boilers, water pumps, etc.). The latter variety are marketed after making them serviceable, when necessary, again by using indigenous repair skills.

The evidence suggests that a significantly large proportion of the entrepreneurs on the sample have entered the industry in the not-too-distant past: 34 out of 57 of the sample enterprises, or 60%, were established between 1981 and 1985. This suggests that the sample is basically a young one. Another 15 enterprises (26%) were established between 1976-1980.

Finally, a dominant majority of the enterprises (67%), are formed as private limited companies, which are limited liability entities with up to 50 shareholders and a maximum of 10 directors. Ten out of the fifty-seven enterprises (18%) are sole proprietorships. The remainder are either public limited quoted companies, or registered partnerships etc., each with very small shares in the sample.

WHAT CHOICES DO ENTREPRENEURS FACE

This is a paper about the effect of source of finance on the choice of technology and, via the latter, on the efficiency of production. The choices of importance in the present context related to finance and technology (i.e. equipment). Regarding the choices regarding the source of long-term investment finance, one of the first things to note is that the stock market is at a nascent stage of development in BD. Hence mobilization through capital issue is an option that really exists for a very small minority of agents in any industry, let alone a very young one. Accordingly, we find that only 4, (or 6.7%), of the sample enterprises are quoted companies. The real choice is therefore between debt finance and internal finance of capital investment.

There are two major sources of long-term debt finance for industrial establishments in BD, namely the DFIs and the commercial banks. The DFIs are basically government-owned specialized financial institutions, whose lending, denominated largely in foreign currency, is underwritten by foreign project assistance. Rates of interest on such loans have ranged between 12-14%, maturities between 10 and 15 years. Repayment starts to become liable in the year following the commissioning of the plant, as certified by DFI engineers. The loan package preferred by DFIs has usually been perceived by entrepreneurs to be lucrative qua deals, as diversion of purchasing power in foreign exchange to overseas bank account via import over-invoicing is possible and easy to get away with. It has been observed at times that DFI-financed enterprises imported practically useless paraphernalia by way of plant and equipment, thus dictating poor production performance and, from the outset, hopeless

prospects for timely repayment. Recent publications of Bangladesh Institute of Development Studies (BIDS) have dwelt on dismal repayment performance of the 2 major DFI's (Sobhan and Mahmood, 1984). There were 8 (or 13.5%) DFI-financed enterprises on the present sample.

The second source of long-term debt finance comprises commercial banks. Such assistance comes in two components, the foreign currency and the local.

As for internal finance, of course, entrepreneurs can rely on either profit plough-back or transfusion of funds mobilized through divestiture. The chief distinction between debt and internal finance appears to lie in that, because of tax treatment of interest and profit, the latter is frequently more expensive to service. That is, enumerating equity participants at a given rate presupposes a higher pre-tax rate of return relative to a debt participant.

An attempt was made to explain success to obtain long-term debt finance. The variables which may, on a priori grounds, be supposed to promote the changes of success are the form of private limited liability ownership (OWN), number of sister business organization (SIS) (which may correspond to broadness of the basis of the sample enterprises), whether any sister organization is involved in non-manufacturing activities in steel products (SSB), extent of prior experience in steel-related matters (YEXP) and age of the present enterprises (AGE). The explanation achieved of the proportion of capital employed in the enterprise (i.e. cost of building plus fixed capital) financed by the DFIs turned out to be very poor, with none of the posited variables being significant:

$$DFI = 12.7 + 2.29 OWN - 0.91 SIS - 1.55 SSB - 0.37 YEXP$$

$$\begin{array}{cccccc} (0.9) & (0.4) & & (0.4) & (0.3) & (0.8) \\ -0.026 AGE & & & & & R^2 = 0.05 \end{array}$$

Similar poor results were obtained when the regress and was NCBF, i.e. proportion of fixed capital financed, in foreign currency, by nationalized and other commercial banks. The thesis suggests itself that the proportionate importance enjoyed by foreign aid resources in meeting long-term capital needs of setting up capacity in SRI in Bangladesh has very little if any, basis in the standard type of criteria that hard-nosed

that there has always remained and still remains deep reservations as to the capability of the local engineering industry. Indenters and representatives in BD of foreign equipment suppliers try their utmost to promote such perceptions. Enterprises that utilize funds from DFIs or commercial banks tend to choose imported equipments, as is borne out by examining the following regression equation INDI as the regressand:

$$\text{INDI} = 53.9 - 0.0007 \text{ VAY} - 0.562 \text{ DFI} - 0.524 \text{ NCBF} + 0.026 \text{ NST} + 14.14 \text{ OWN} \\ (4.7) \quad (1.1) \quad (2.68) \quad (4.47) \quad (0.6) \quad (1.85) \\ -2.05 \text{ SIS} - 0.166 \text{ YEXP} - 1.94 \text{ AGE} \quad R^2 = 0.40 \\ (0.65) \quad (0.35) \quad (3.0)$$

Where INDI= Extent of Bangladeshi-made equipment to total plant and machinery.

VAY= output scale.

NST= Working capital loan from commercial banks.

AGE= No. of years since enterprise was set up.

The equation basically says that entrepreneurs bestowed with financial help from DFI and commercial banks in longterm loans help themselves with imported equipments. The same is true for entrepreneurs who have been set up some time back. This is consistent with the fact that the marked increase in the capability of the local engineering industry is itself a recent phenomenon. Except for NST and OWN, every other variable dictates reducing indigenization.

SECTION III FURTHER EVIDENCE

In this section are presented the central findings of this paper. It may be useful at the very outset to catalogue the various variables, both dependent and otherwise. The following definitions are used in the paper, and hence should be touched upon:

FPRD = Total factor productivity (annual value added divided by the flow of factor services)

PFT = Economic return at the establishment level (implying economic as distinct from financial valuation)

RESID = Residuals from an estimated stochastic production frontier

FRLRTT = Farrell's index of efficiency

OWN = An ownership dummy equal to 1 if the establishment is owned by a private limited company, and 0 otherwise

YEST = Year of the establishment of the unit

- AGE = No. of years since establishment of unit
SIS = No. of sister businesses to the establishments
KLRATI = Capital-Labour ratio
LRATIO = The ratio of blue-collared workers to total workforce
YEXP = No. of years of prior industrial exposure of the entrepreneurs in the unit
INDI = % of Bangladeshi content in total stock of plant and machinery
DFI = % of the fixed cost of the unit represented by long term loans extended by any development finance institutions (DFI) to the project
ANTIND = One minus INDI
NCBF = % investment accounted for by debt denominated in foreign currency by national commercial banks (e.g. Agrani, Janata, etc.)
DFNCBF = Overall foreign currency debt by DFIs and national commercial banks
VAD = Daily output capacity of the unit, in 1984/85 prices
DAYS = No. of days the unit worked during 1984/85 (This was meant to represent the intensity-of yuse. Because load shedding, strikes can in part cause shut-down of plants, we shall subsequently treat this variable to be exogenous
DSISB = A Dummy variable taking value of 1 if the entrepreneur of the SRI (e.g. a construction firm, a wholesale outlet selling mild steel products).
VAY = Output scale (= yearly value added)
VAY2 = $VAY * VAY$

Table 1 presents sample means and standard deviations of various variables subsequently used in the paper. We may wish to make the following observations about the basic character of the sample. First, average establishment on the sample requires a large amount of capital, namely Tk. 14.8 million or more. Of this amount, 38% is represented by plant and machinery, while another 12.3% is accounted for by building. Capital-output ration on average is estimated at 2.43, with value added being estimated at Tk. 6.09 million. Work-force per establishment is estimated at 58. Value added per person year is estimated at Tk. 105086. Wage bill per establishment is Tk. 1004 thousand. Wage earning per production worker thus came to Tk. 21092 per year or 1758 per month.

On average, about 25% of expenditure on plant and machinery is on indigenous technology. Long-term loans denominated in foreign currency are found to account for about 17.5% in the sample overall. (For the 21

establishments that have contracted any amount of foreign currency loan, the percentage is 48%). Total factor productivity for the representative establishment is estimated at 43.8%. The industry appears to have enjoyed attractive profits. That many entrepreneurs in the industry seem content to throw their lots into depending on institutional loans against a backdrop of the loss of efficiency and profitability that such a behaviour implies is understandable in the light of this fact.

Table - I : Selected Characteristics of the Sample

Variable name	Mean value	Standard deviation	Coefficient of variation (%)
<u>Capital</u>			
Land	3883	4491	115.7
Building	1818	734	40.4
Machinery	5678	7234	127.4
Working capital	3443	2084	60.5
Production worker (Nos.)	47.6	24.2	50.8
Non-production worker (Nos.)	10.4	6.6	63.5
VAY	6095.0	4968	81.5
SIS	2.92	-	-
AGE	6.26	6.35	1.01
INDI(%)	24.8	33.5	135.1
DFI(%)	5.5	17.4	316.4
NCBF (%)	12.0	20.8	173.3
NST(%)	47.8	37.3	78.0
FPRD	1.75	0.77	44.0
PFT	0.438	0.271	61.9
Debt	8528	7693	90.2
Equity	6293	8841	140.5
DAYS (Nos.)	209	62	29.7
KLRATI	1956	794	40.6
DFNCBF(%)	17.5	25.5	145.7
YEXP (Nos.)	8.2	8.9	108.5

Source: Sample Survey Data, 1984/85.

EXPLAINING CAPITAL-LABOUR RATIO OF MECHANISATION⁴

Table 2 presents OLS regression results explaining estimated capital to-labour ratios. We particularly want to relate factor proportions to financial characteristics on the one hand, and technological characteristics on the other. The following observations are prompted by these results. First, larger establishments have settled for higher degrees

Table-2 Explaining KLRATI in Steel Re-rolling Industry

Independent variables	Regressand is KLRATI				
	1085	1123	1013	1285	1274
Constant	1085 (4.6)	1123 (4.5)	1013 (4.1)	1285 (5.3)	1274 (4.7)
VAY	0.073 (4.05)(4.7)	0.085 (4.46)	0.079 (4.2)(4.6)	0.073	0.078
INDI	-	-	-	-5.41 (2.2)	-5.46 (1.99)
AGE	47.65 (3.6)	47.6 (3.5)	49.13 (3.7)	39.9 (3.04)	40.35 (2.96)
SIS	11.2 (.16)	-5.86 (.08)	9.24 (.13)	2.57 (.04)	-3.21 (.05)
OWN	-43.9 (.26)	6.25 (.03)	3.11 (.02)	7.75 (.45)	109.2 (.63)
YEXP	6.6 (.65)	0.42 (.04)	3.07 (.31)	5.06 (.52)	2.04 (.21)
DFI	9.64 (2.14)	-	-	6.75	-
NCBF	-	2.28 (.61)	-	-	-
DFNCBF	-	-	5.75 (1.92)	2.58	-
\bar{R}^2	0.52	0.48	0.51	0.56	-
D-W	1.67	1.43	1.37	1.45	-

4. Following Sen [8] we equate capital-labour ratio with mechanisation.

of mechanisation, the VAY coefficient being highly significant⁵. Second, younger establishments have opted for lower levels of mechanisation. Third, and quite to the point, DFI has a significant positive coefficient on KLRATI function. In contrast, INDI has a significant negative coefficient. While, therefore, an increasing share of DFI loans in total project costs leads to higher mechanisation, increasing indigenous content of fixed investment in plant and machinery have a significant opposite effect. This intuitively acceptable.

Project loans denominated in foreign currency may likely be associated with a high grant element in sphere of a certain nominal rate of interest payable thereon. The implicit subsidisation of capital (relative to labour) naturally stimulates demand for more capital. On the other hand, establishments having a higher indigenous content in plant/machinery operate from a position of a considerable degree of entrepreneurial acumen and expertise. They have a certain degree of knack, born out of previous experience of the industry, that informs choices made, especially of equipment.

Table III presents some of the determinants of ANTIND, which represents the foreign component of investment in plant and equipment. Younger establishments have lower foreign content than older ones. Proprietorships and partnerships have greater foreign content in plant/machinery than private limited companies. Most important, DFI loans significantly directly promote import-intensive investment in plant and machinery.

EXPLAINING TOTAL FACTOR PRODUCTIVITY

Table IV presents OLS regression coefficients pertaining to FPRD. The following conclusions may be noted. First in all the specification of the FPRD function, scale of output of the unit is a significant of the FPRD function, scale of output of the unit is a significant direct influence. A quadratic term defined on VAY has everywhere a significant coefficient,

5. An alternative interpretation is not accepted here, namely that establishments begin their lives small and relatively undifferentiated in terms of capital labour ratio. As they grow, they invest in labour-saving machinery. (In other words, establishments on the growth track go for capital deepening). This is not accepted because, as the following regression result shows, VAY has nothing to do with age of the establishment.

$$\begin{aligned} \text{VAY} = & -3538C + 65.74 \text{ YEXP} - 154.7^{**} + 4.22^* \text{ KLRATI} + \\ & (1.9) \quad (.86) \quad (1.5) \quad (5.0) \\ & 1475.5 \text{ DSISB} + 6.9 \text{ INDI} + 7.1 \text{ NST} \quad R^2 = .33 \\ & (1.08) \quad (.4) \quad (1.0) \end{aligned}$$

In fact, older establishments tend to have smaller scale of output.

thus suggesting that excessively large scale of output is a victim of significant diseconomies. Second, while INDI has a highly significant positive coefficient on FPRD function, ANTIND has as is to be expected a significant negative sign. The clear upshot is that, at least in steel re-rolling industry, import dependence does not result in greater economic profitability. Quite the contrary appears to be the case. Indigenous content in equipment generates higher economic rates of return. Third, DFI has a insignificant positive coefficient on FPRD function. Fourth, KLRATI everywhere has a significant but negative effect on FPRD. This is a paradox. Its explanation may be as follows. The difference between high and low capital-labour ratio in this industry is frequently a matter of investing in imported machinery on the part of credit-leveraged establishments, while more cost-effective indigenous options frequently existed. Note that KLRATI has a significant negative effect on FPRD in spite of having a very significant positive effect upon VAY, while the latter, as we have seen, significantly positively affects FPRD.

Fifth, limited company dummy has a significant negative coefficient. This means that partnerships/proprietorships have higher total rates of returns. Sixth, the choice of steel billets at the expense of ship scrap as the staple of re-rolling has a highly significant negative effect on FPRD. Note that, while steel billets are procured either from the Chittagong Steel Mills Ltd. or through imports, ship scrap is locally available. The survey revealed that billet using units frequently were the less experienced of the lot than those sustained by ship scraps. Certain locally fabricated plate cutting processes exist, but these are outwardly crude. Entrepreneurs whose previous careers have been less rooted in the intricacies of iron/ and steel business reject these as not sufficiently sophisticated. Yet, in trained hands these devices could become cost saving and labour using devices. This, to a large degree is the difference between those that use billets and ship scraps for the key raw materials. (Such differential productivity performance could persist year-after-year, if entrepreneurs did not work out their rates of return using economic bases for valuation, as here). Seventh, while the degree of long-term loan (from the DFI's for example) have negatively affected factor productivity, short-term credit from commercial banks (NST) has a positive effect. This means that the degree of provision of working capital requirements is always favourable to the achievement of efficiency.

The degree of explanation of each of the estimated equation is quite good.

Table 3 : Explaining Import Content of Technology (ANTIND) in Bangladesh Steel Re-rolling industry

Independent variables	Regressand is ANTIND			
Constant	-36.2 (2.8)	-40.8 (3.19)	-48.6 (4.0)	-32.9
DFI	0.53 (2.25)			
NCBF		0.55 (2.81)		
DFNCBF			0.61 (4.2)	0.52 (3.2)
AGE	1.43 (1.98)	1.61 (2.27)	1.64 (2.5)	
SIS	1.18 (.31)	0.54 (.15)	1.28 (.37)	
OWN	-22.76 (2.50)	-19.2 (2.15)	-19.96 (2.43)	
YEXP	0.140 (.22)	-0.38 (.64)	-0.18 (.33)	
DSISB	4.89 (0.45)	12.49 (1.15)	12.4 (1.25)	
\bar{R}_a^2	0.18	0.22	0.33	0.14
D-W	1.63	1.75	(1.85)	1.64

Source: Sample survey data.

Table-4 : Explaining Total Factor Productivity in Bangladesh Steel Rolling Industry, 1984/85

Regressand is FPRD; OLS method				
Variables				
Constant	1.418 (6.6)	1.34 (6.67)	1.23 (5.7)	1.23 (5.2)
VAY	0.00024 (6.95)	0.00023 (7.2)	0.00024 (7.6)	0.00023 (7.9)
VAY2	-3.676D-09	-3.371D-09 (2.78)	-3.809D-09 (3.24)	-3.622D-09 (3.2)
DFI	0.00108 (.33)	-3.933D-05 (.01)		
AGE	0.01 (.88)		0.008 (.76)	
OWN	-0.147 (1.33)		-0.224 (2.08)	
DBLT	-0.714 (4.35)	-0.59 (4.2)	-0.56 (3.7)	-0.49 (3.6)
NST	+0.0014 (2.12)	+0.001 (2.1)	0.0011 (1.84)	+0.0011 (2.0)
KLRATI	-0.00023 (2.65)	-0.00029 (2.85)	-0.0002 (2.45)	-0.00026 (2.67)
SIS	-0.051 (1.13)	-0.041 (.93)	-0.055 (1.3)	0.035 (.83)
DSISB	-0.152 (1.24)		-0.086 (.73)	
INDI			+0.0044 (2.53)	+0.0036 (2.2)
\bar{R}^2	0.79	0.78	0.81	0.80
D-W	1.82	1.72	1.89	1.74

Note: FPRD is measured in percentage terms.

Table V presents the OLS regression coefficients of the estimated profitability (PFT) function. It suffices our present purposes to flag the fact that more mechanised establishments are penalised. Capital labour ratio has everywhere a significant negative coefficient on the PFT function. This implies that in this industry, a relatively large degree of freedom of choice exists in the selection of plant and equipment. Using expensive, imported equipment does not pay as much as taking advantage of available and

cost effective indigenous equipment. Debt finance thus promotes inappropriate choice of techniques. When DBLT is not posited in the equation, DFI which has been earlier seen to significantly increase levels of mechanisation has a negative coefficient on its own account. (When however, DBLT is posited in the equation, it has a highly significant negative effect on PFT that, perhaps due to strong pair-wise correlation between DFI and PFT, DFI pales into insignificance. The coefficient sign still remains negative). In contrast, INDI has a significant positive coefficient on the PFT function. Even controlling for the effect of INDI, DBLT and KLRATI each returns significant negative coefficients. Again, the degree of explanation achieved by each of the specifications is quite adequate.

Table-5 : Explaining Profitability (PFT) in Bangladesh Steel Re-rolling Industry, 1984/85

	(OLS method)		
C	+11.29 (1.4)	+6.21 (.75)	+10.72 (1.6)
VAY	+7.654D-05 (6.21)	+8.304D-05 (5.8)	+7.745D-05 (7.07)
VAY2	-1.080D-09 (2.36)	-1.156D-09 (2.16)	-1.180D-09 (2.88)
DFI	-9.181D-05 (.07)	-0.0022 (1.68)	
OWN	-0.0511 (1.22)	-0.014 (.31)	-0.089 (2.32)
YEST	-0.0053 (1.34)	0.0033 (.80)	-0.0052 (1.55)
KLRATI	-0.00012 (2.89)	0.00020 (4.51)	-9.674D-05 (2.54)
PRATIO	-0.026 (.35)	-0.01078 (.12)	-0.037 (.54)
DBLT	-0.267 (4.38)		-0.2145 (4.08)
INDI			+0.0021 (3.4)
R ²	0.75	0.65	0.68
D-W	2.16	2.27	2.09

In sum, both debt and mechanisation variables are to the disadvantage of both factor productivity and profitability. The use of indigenous

equipment, on the other hand, is to their advantage. The clear implication is that debt as a source of industrial finance has led to both technical inefficiencies and lower rates of returns. Technical inefficiency is measured by residuals from an estimated production frontier.

Table VI presents the OLS regression coefficients of these residual (RESID). In this table, the regressand is estimated residual which may range from a negative (with large absolute value) to zero. The closer the observed output level is to the estimated frontier, the smaller the absolute value of RESID, which is to say, the larger the overall value. This is because, with a negative sign being prefixed, the closer a number is to zero the larger its value is. The closer an actual output is to the frontier, the lower is the technical inefficiency.

The results of Table VI show first, scale of output, INDI and youth of the establishments help a movement closer to the frontier, (we note that younger establishments were also more indigenised relative to older establishments). On the other hand, reliance on DFI loans, the use of steel billets and excessive mechanisation breed technical inefficiency.

PERFORMANCE VERSUS FOREIGN-CURRENCY LOANS FROM NCBS

So far, we have examined the relationship between incidence of foreign-aid debt and productivity, controlling for other variables. Is the relationship under examination the same in cases involving the use of foreign-currency loans from NCBS, not DFIs? If the character and magnitudes of the debt coefficient remains the same in such a case, one could claim a greater degree of generality in favour of the results. The results of Table VII show that such a generality may indeed be claimed in favour of these results. They show that foreign-currency debt variable everywhere has a negative sign on the FPRD function; that negative coefficient is significant when DFNCBF—the incidence of foreign-currency loan, whether from the DFIs or the NCBS. The coefficient signs on the other variables remain the same as before. We conclude, therefore, that the use of long-term debt in financing plant and machinery biases the level of mechanisation upward, with unfavourable results for factor productivity, economic rate of return and technical efficiency. In contrast, own-financed establishments employ more of indigenous equipment and perform better in each of those terms. Not also that the provision of short-term credit (for working capital support) favourably affects economic performance.

Table - 6 : Explaining Residuals from the Production Frontier in Steel Re-rolling Industry in Bangladesh.

Independent variables	RESID	RESID	RESID
Consultant	-44.8 (1.94)	-33.0 (2.1)	-29.78 (2.28)
VAY	0.00022 (7.53)	0.00021 (9.6)	0.00021 (9.8)
VAY2	-4.391D-09 (4.34)	-4.242D-09 (5.08)	-4.302D-09 (5.42)
DFI	-0.0034 (1.44)	-0.0012 (.56)	
INDI			+0.0032 (2.86)
OWN	0.01497 (.18)		-0.094 (1.26)
YEST	0.0221 (2.89)	0.0156 (2.08)	-0.0145 (2.2)
KLRATI	0.00037 (4.9)	0.00031 (4.1)	0.00028 (3.74)
SIS	0.00026 (.07)		
DSISB	0.038 (.38)		
YEXP	-0.0047 (.77)		
DBLT		-0.227 (2.07)	-0.175 (1.72)
ANTIND			
R ²	0.78	0.81	0.83
D-W	2.30	2.11	2.09

SOME FURTHER CONSIDERATIONS.

The OLS results presented so far have one limitation. Both independent variables that consistently return significant coefficients there are themselves significantly affected by certain other variables in the equations estimated. For example, as we have already seen, KLRATI is significantly affected by either DFI or NCBF. Similarly, VAY is affected by

AGE. These considerations imply that OLS coefficients may represent the outcome of joint influences on the function at hand. An unscrambling of the individual effect(s) is in order. In the absence of such unscrambling, claiming unique causalities between particular variables is not a defensible procedure. Two-stage least-squares (2SLS) method has been utilised here to secure the separation of the joint influences. Before presenting the results of this exercise, one assumption is made explicit.

AGE, SIS, OWN, DSISB, NST, DFI, DFNCBF, VAD, DAYS have been assumed to be instrumental or exogeneous variables in this exercise. As the 2SLS, goes, in the first stage of the regression, the dependent variable, FPRD for example, is regressed on these variables. Residuals from the function thus fitted are calculated. These are deemed to have been purged of any influence of all of the above variables. These estimated residuals are then regression of what are assumed to be independent variables, for example VAY, VAY2, DBLT and KLRATI. In effect, therefore, the results of the 2SLS regressions reported hereinafter show the individual effect of these last four variables on FPRD, having unscrambled the possibly joint effect of a miscellany of ownership, historical, entrepreneurial, capacity and intensity-of-use variables

Is this justified to use DAYS and NST as exogenous? Of course, in theory, working capital bank-finance ought to be an endogenous variable in an annual model, such as this one. In practice, however, the second half of 1984/85 has been a year of very tight monetary policy and credit ceilings on banks to restrict its growth to 18% (while in the preceding year, the growth rate was 42%). In the face of the ensuing credit rationing, the degree of accommodation of working capital was no longer totally a matter of endogenous management. As regards DAYS, again in theory number of days ought to be endogenous. However, the industry is located in major cities, where trade unions are active. In an annual model, the number of days of work is also influenced by the incidence of seasonal migration of worker to the countryside. While, therefore, the number of workers is a decision variable, the number of days on which the minimum required workforce will work can not wholly be taken to be an endogenous variable.

Table – 7 : Explaining Factor Productivity using other Measures of Long-term Debt, Steel Re-rolling Industry, 1984/85

Independent Variables	Regressand is Factor Productivity			
Constant	1.46 (7.0)	1.45 (6.9)	1.57 (7.15)	1.54 (7.2)
VAY	+0.00025 (7.5)	0.00025 (7.3)	0.00023 (6.2)	0.0024 (6.4)
VAY2	-4.047D-09 (3.3)	-4.111D-09 (3.25)	-3.052D-09 (2.2)	-3.290D-09 (2.38)
NCBF	-0.0038 (1.7)		-0.0029 (1.07)	
OWN	-0.158 (1.5)	-0.139 (1.3)	-0.069 (.56)	-0.53 (.45)
AGE	0.009 (.85)	0.0066 (.58)	-0.016 (1.35)	-0.018 (1.56)
NST	0.0013 (2.16)	0.0013 (2.0)	0.0018 (1.63)	0.00104 (1.45)
DBLT	-0.707 (4.8)	-0.651 (4.2)		
KLRATI	-0.00026 (2.6)	-0.00027 (2.57)	-0.0005 (4.7)	-0.00047 (4.37)
SIS	-0.058 (1.33)	-0.062 (1.4)		
DSISB	-0.186 (1.5)	-0.175 (1.44)		
DFNCBF		-0.0027 (1.3)		-0.0039 (1.68)
\bar{R}^2	0.80	0.80	0.71	0.72
D-W	1.75	1.87	2.29	2.23

Source: Sample survey data.

The results of Table VIII show that, after the individual effects of exogenous variables are neutralised, KLRATI returns a significant negative coefficient, while VAY returns a significant positive coefficient.

Chowdhury : Steel Rerolling Industry

The implication is clear: that capital-labour ratios militate against factor productivity, while scale of output promotes it.

Table – 8 : Two-stage Least-Squares Regression Coefficients of Factor Productivity Functions

Independent variables	Regressand is FPRD				
Constant	1.98 (4.8)	1.96 (4.39)	2.12 (5.2)	1.85 (3.82)	1.97 (4.16)
VAY	0.00028 (4.43)	0.00028 (4.36)	0.00026 (4.2)	0.00026 (3.6)	0.00024 (3.07)
VAY2	-3.555D-09 (1.3)	-3.443D-09 (1.18)	-2.661D-09 (.96)	-3.172D-09 (1.14)	-2.017D-09 (0.72)
KLRATI	-0.00088 (4.67)	-0.00086 (4.23)	-0.00093 (4.85)	-0.00074 (1.94)	-0.00074 (1.83)
DBLT			(.40)	-0.16 (.51)	-0.232
R ²	0.65	0.65	0.63	0.70	0.70
D-W	1.73	1.76	1.68	0.42	0.42
SEE	0.46	0.45	0.47	1.77	1.70

Note: The instruments used in the equations in cols. (2) thru (6) are AGE, OWN, SIS, DSISB, DFNCBF, VAD, DAYS and NST.

Source: Sample survey data.

For ready reference, OLS regression coefficients of FPRD on these four independent variables alone (and a constant term) are presented below.

$$\begin{aligned}
 \text{FPRD} = & 1.40 + 0.00023 \text{ VAY} - 3.063\text{D-}09 \text{ VAY2} - 0.00032 \text{ KLRATI} \\
 & (7.9) \quad (7.5) \quad \quad \quad (3.14) \\
 & -0.573 \text{ DBLT} \quad R^{-2} = 0.78 \quad \quad \quad \text{D-W} = 1.87 \\
 & (4.24)
 \end{aligned}$$

As far as the output scale and capital labour ratio are concerned, the same inferences may properly be made from OLS as well as 2SLS regressions. (Notably, this also means that even where aid-funded projects loans or those using foreign-currency loans from commercial banks not available, beyond a certain limit, mechanisation becomes counter-productive).

2SLS regression results focusing on the other versions of the dependent variable are not presented here, for reasons of brevity. We

have satisfied ourselves that the results remain substantively the same as regards the focal concerns of this paper. Output scale and mechanisation are returned with a significantly positive and negative coefficient, respectively, on either PFT or RESID functions.

In terms of the two formal hypotheses postulated earlier, the following conclusions may be reached. First, there are both allocative and technical efficiencies on this sample, but both types of inefficiencies are greater for establishments established through long-term debt than for establishments that otherwise finance their fixed capital requirements. The evidence for greater technical inefficiency of long-term-loan aided projects has been posited earlier on. That for greater allocative inefficiency is suggested in the connection between use of long-term debt and capital-labour ratio on the one hand, and the strong inverse causality between the latter and factor productivity. As such, we may reject the relative price hypothesis. We may instead conclude that establishments that can negotiate "access" to subsidised long-term credit (incorporating a certain but frequently sizeable degree of grant element) select (or are constrained to select) techniques of production exhibiting relatively high levels of mechanisation relative to establishments not thus aided. In this process, aided projects demonstrate a greater degree of inability to minimise costs than other projects, even controlling for a number of plausible explanatory variables.

APPENDIX-1 : Correlation Matrix of Independent Variable

	VAY	AGE	KLRATI	SIS	DSISB	DFE	OWN	NCBF	DFNCBF	NST
VAY	0.67	0.28	0.64	0.28	0.36	0.14	-0.22	-0.02	0.08	.18
AGE		1.0	0.52	0.26	0.29	-0.10	-0.05	-0.08	-0.13	0.36
KLRATI			1.0	0.24	0.23	-0.14	0.02	0.17	0.04	
SIS				1.0	0.26	-0.10	-0.31	-0.05	-0.11	0.20
DSISB					1.0	-0.11	-0.03	-0.17	-0.21	0.40
DFI						1.0	0.07	-0.12	0.58	-0.21
OWN							1.0	-0.09	-0.03	-0.06
NCBF								1.0	0.73	-0.09
DFNCBF									1.0	-0.22
NST										1.00

Source: Sample survey data.

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WHITHER PRIVATE SECTOR INDUSTRIAL DEVELOPMENT

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1. THE THEME OF THE PAPER

This paper attempts to analyse the nature and implications of the industrial policies that have been pursued in Bangladesh beginning from Pakistan period till to-day. It is the central theme of the study that the philosophy of industrial development policy is the reflection of political, social and cultural factors. Industrial policy is a collection of varied response to the different kind of political responsibility imposed on Government through circumstances and requirements [1; 32-52]. As such the response of the governments towards industrial policy varied according to the political character of the party in power from time to time. The much vaunted rapid industrialisation in Pakistani period specially in Ayub regime did not produce economic growth with perceptible impact on the standard of living of the general people and could not help economic development in the right direction in the then East Pakistan (now Bangladesh). The present emphasis on private sector for rapid industrialisation has not and would not help economic emancipation of the people.

2. THE PROBLEM

The contribution of industry towards Gross Domestic Product is rather poor. It was 8.2% in 1969-70 [2; 387]. From 1972-73 it either remained constant or some times went down. For instance it was found 10.4% in 1974-75, 9.8% in 1977-78, 10.7% in 1979-80, 10.1% in 1982-83, 10% in 1984-85 and 9.8% in 1985-86 as per computation based on data given in the Economic Survey 1986-87 [3; 560-1]. This growth trend compared with rising labour force is a threat to our existence. For it is estimated that by 1990 about 50 lac people will enter into employment market and we shall not be able to employ more than 1/4th of this new labour force to agriculture sector. Thus World Bank in its report titled "Economic Trends and Development Administration" warned that three-quarters of the expected increase in the country's work force would need to be employed in sectors other than crops production over the coming years if the incomes per head of the poorest part of the population are not to decline creating rural violence.

Bangladesh is one of the poorest countries of the globe. It has been an exploited area for a long time. The wealth of Bengal attracted the greedy eyes of the British East India Company in 18th century. For 190 years British ruled the country and exploited to the utmost. At this stage came the independence from British rule under Pakistan. But the west Pakistanis soon started treating East Pakistan as her colony and milked her dry during twenty three years that followed [4;73]. The liberation in 1971 brought with it the ray of hope to shape their future and placed responsibility on the government to plan exploitation free society and improve the lot of the people. The proclamation of independence as to "ensure for the people of Bangladesh equality, human dignity and social justice" worked as the foundation of this pious hope. Moreover, as a developing country Bangladesh shares aspirations of economic development with all other countries specially with LDCs which are inhabited with large population who are victims of abjected poverty. This in turn warrants that the economic policy of the country be pragmatic and beneficial to the people at large. Thus like other developing countries it places a major hope of finding a solution to the problem of poverty and over population through industrialisation. But no advocacy as an answer can be made honestly without frankly admitting the fact that, industrialisation alone and itself, is often overrated as a means to achieve economic progress. However, industrial development has a necessary and, ultimately a large role to play in almost any sound development programme [5; 5].

To ensure industrial development in desired direction, state intervention was found utmost essential. Even the proponents of free market development strategy assumes that Government intervention in certain degree is necessary. For instance, Clepham writes" the real free market alternative for developing countries today (is) not, for instance, the capitalist laissez-fair system, but the modern or evolve from the market economy in which the state has numerous planning and control functions [6; 13]. Syed has further elaborated the background of government direct intervention in the industrial field in the following words, "The concept of attaining maximum efficiency in any economy rests on the pillar of pareto optimality. The conditions of pareto optimality are met in a simple world of perfect competition. The real world, however, is not simple world and there is divergence from pareto optimum in all the sectors. In order to

correct such divergence, government intervention is required. This intervention by the government is thus directed at regulating the divergence from the pareto optimum. And this represent the 'second best' solution for achievement of maximum economic efficiency. But the concept of maximum efficiency tends to ignore the question of distribution of income. Thus in the real world of to-day the primary objective is the attainment of maximum welfare rather than maximum efficiency. In attaining this goal government intervention is even more purposeful, for now the second best solution also has to take into account the additional divergence between private benefits/costs" and social benefits/costs" [7]. In fact, there is hardly any country in the world where public enterprises in the economic field are found not in existence not to speak of the socialist countries where it is the natural economic phenomenon. In the context of mixed economy people who favour greater role of private sector assert that private industrial development, to the extent that is possible, generally offers the prospect of maximum economic gain to a developing country. They argue that through seeking to increase private profit they also increase nation's income through efficient use of resources. But this desirable coincidence of interest does not always exist. Private businessmen are often unmindful of the national economic interest [5; 50]. Moreover, private industry is also accused of being a means of creating maldistribution of national income. In fact if the rewards of private owners of industry is very great, a wealthy class of industrialists may grow up to such an extent that it constitutes a negation of democratic objective of greater economic equality. Further, there are instances in mixed economy that private sectors seek or are given chance to dominate in various profit making opportunities for itself and resist the encroachment of state capital on its territory. Thus private profit increases and strengthen the hands of monopoly capital. Such monopoly capital wants the state to remain dependent on tax revenue and thus fiscally weak to reduce the possibility that popular government would reorder the allocation of material resources [8; 157]. It may be mentioned here that Keynes favoured private sector for accumulative saving propensity and pointed out that like bees they save and accumulate no less to the advantage of whole community because they themselves held narrower ends in prospect. But the conditions in less developed countries in the mid-20th century is very much different. Such an acquisitive class willing to accumulate and risk their capital in expectation of future gains is conspicuously absent. The European analogy of 18th and 19th century is thus inapplicable to the case of Pakistan or for the matter to any underdeveloped country in regard to development strategy [9; 116]. V.K.R.V. Rao in such a context has rightly pointed out that the upper class

who acquire a surplus in many instances neither use it for productive purpose nor are interested in entrepreneurial activities [6;15]. Bronfenbrenner observed that these incomes are largely absorbed in luxuriant consumption; that when invested, a substantial part of this investment cannot be properly called developmental [9; 117]. Instances are not few where accumulated surplus of private domestic industrialist find their way to foreign banks. In such a context developing countries need to be cautious while endeavouring to develop a country through maximum emphasis on private sectors. It is heartening to note that since 1970s the new development objectives related to more equitable income distribution, elimination of poverty along with rapid economic growth. This was a right step. For in developing countries the role of government in industrialization should be a part of an overall development responsibility to accelerate growth and ensure equity [10; 7].

But the industrial policy and pattern of industrialization in Bangladesh since Pakistani period seems to have undermined the importance of equity for the sake of accelerated industrial growth. The policy led to concentration of economic power to a few hands and the pattern of industrialization was not beneficial to the economy. In Pakistani period government favoured private sector development, seemingly on the ground that private sector ensure better utilization of resources but this strategy led to maldistribution of resources and could not produce desired socio-economic result. After independence, the trend of socio-political thinking led to the formulation of an industrial policy which relegated private sector in the background with the responsibility of developing small-scale industry and public sector came to prominence. The trend received set back since 1975 on the ground that public enterprises are inefficient and that privatisation would lead to accelerated growth. In such a case an assessment of industrial policies since Pakistani period till today may reveal the truth behind those assumptions, through exploring the impact of the policy measures. The present paper is an attempt to that direction.

3. OBJECTIVES OF THE STUDY.

Against the background of the problem stated above the main objectives of the study are as follows:

- i) To examine the industrial policies of the Pakistani period and the philosophy and strategies behind those policies.
- ii) To evaluate the impact of the policy measures on the overall development of the country.

- iii) To assess the background of nationalisation policy of the government of Bangladesh and its impact.
- iv) To ascertain the causes of reversal of the policy and the consequences.

4. METHOD OF STUDY

The study is based on secondary data. An extensive study on the writings and research works relevant to industrial policy of Pakistan and Bangladesh period was done perusal of various publications of the government and relevant agencies such as Five Year Plans, Annual Development Plans, Economic Surveys, Bangladesh Bank Annual Reports etc. were also made to collect necessary data.

For the purpose of analysis the study has been divided into three sections as follows:

- i) Pakistan period from 1947 to 1971.
- ii) Bangladesh period from 1972 to 1974.
- iii) Bangladesh period from 1975 to to-date.

5. FINDINGS AND ANALYSIS

A) INDUSTRIAL POLICY DURING PAKISTANI PERIOD

The movement of Pakistan was led by an elite of Muslim landlords, traders, urban elites [11; 69]. The success of the movement in 1947 conferred power on these elites who in collaboration with bureaucratic elites framed development and industrial policy that was pursued till emergence of Bangladesh in 1971 as an independent country.

The country got first industrial policy statement from Md. Ali Jinnah, the first Governor General of Pakistan while addressing the Karachi Chamber of Commerce and Industry in early 1948 when he declared that "I would like to call to your particular attention the keen desire of the government of Pakistan to associate industrial initiative and private enterprise at every stage of industrialisation". This was the outline of industrial policy that followed in the years to come.

The first Industrial Policy Statement published on September 1948 confined public sector in arms and ammunition, generation of hydroelectric power, manufacture and operation of railway, telephone,

telegraphs and wireless equipment and declared that free play of private sector will be given to other fields subject to certain constraints and conditions [12]. This policy also reserved the right to initiate itself development of particular industries where private sector is not forthcoming. As a result, Pakistan Industrial Development Corporation (PIDC) was established in 1950 through PIDC Act which, however, began functioning in 1952 [13; 21]. It was the first vehicle of direct government setting up of industries and was more appropriate for Bangladesh where private initiative was lacking. The country entered into plan periods from 1955. In the First Five Year Plan (1955-60) the government sought to crystallise the state policy towards private enterprise. It praised private sector development and ensured continuous support which the planners hoped will develop leadership, talent, innovation and invention [14]. With accession of power by General Ayub Khan in 1958 a new vigour was empiored to the private entrepreneurs when he declared his "full support and protection"[15; 178] to them. This new regime announced new Industrial Policy in 1959 which inter alia pronounced that main reliance for industrial development would continue to be placed on private sector for which active help will come forward. The ideological orientation and philosophy of the Second Five Year Plan 1960-65 was similar to that of pre-plan and first five year plan. It assured maximum encouragement and help to private sector and placed its reliance on private sector in the words that "the creative energies of the people can be harnessed to the need of development if policies of economic liberalism are pursued. However, it further pointed out that government would directly participate in enterprise development where private capital will not forthcoming. The Third Plan (1965-70) showed a bit difference in attitude wherein basis philosophy remained same as early but an advocacy for disposal and broad based ownership was emphasized in the background of alarming concentration of wealth in a few hands. Against this background the Draft Fourth Five Year Plan (1970-75) recognised the compulsion of new development strategy different from that of placing maximum reliance on private sector for acclerate growth. It was recommended in the plan that the cost of industrialisation need to be measured in terms of maldistribution of income, concentration of ownership and economic power and growing social tension.

THE STRATEGIES AND THEIR EFFECTS

Based on the philosophy of reliance on private sector for industrial development various incentives in the form of tarrif protection tax concession and higher degree of inequality of income were adopted as

the important strategies by the government. Soligo and Stern have shown that for a large number of industries net subsidies received through tariff protection exceeded the total value added [16; 259]. Moreover, this tariff protection were offered to a great extent for consumer goods industry, some of whom were nonessentials too, rather than intermediate and capital goods industry which are considered vital for sound industrial base. Power [17; 199-200] Khan [18; 208-/231] and Radhu [19;527-551] substantiated this fact in their respective studies. As a result of this policy prices of many manufactured goods went up because limited number of imported consumer goods could enter the market on competitive basis. It had detrimental impact on consumer interest. Industrialists were offered a number of tax concessions in the form of various depreciation allowances and tax-holiday. They were also given foreign exchange below market price and cheap credit through domestic credit institutions [21; 86]. In fact industrial enterprises made money and enjoyed prosperity even when they were inefficient and wasteful in production and distribution of their goods. They have been nurtured and provided with props.

Over and above these incentives, the pioneering role of PIDC/EPIDC also helped the growth and development of private industrialists. PIDC/EPIDC's reliance was that of providing entrepreneurial support rather than entrepreneurial substitution. Its character committed it to set up industries where private capital was hesitant to venture and then to disinvest its holding as and when private capital came forward. In such a situation its policy helped West Pakistani bourgeois who had liquid capital to associate themselves with PIDC/EPIDC's joint venture. Moreover, techniques of getting loan and import facilities were such that by over valuing machineries by 7.5 per cent the owner could meet most of his share of equity in the venture and acquire control of Rs.20 million project without paying a single rupee from his pocket. Moreover, the disinvestment policy of EPIDC initially also helped West Pakistani capitalists who purchased these disinvested units. These private buyers financed their purchase not by their accumulated savings but by cheap bank credit to which they had oligopolistic banking system. It is amazing that such easy credit was not available directly to the public sector Industrial Development Corporation. Thus the West Pakistani private sector was given chance to flourish in East Pakistan at the cost of government initiatives. However, in this connection it may be noted that PIDC/EPIDC's investment pattern was reverse than that of the private investors, for upto 1968, 81.89 per cent of its investment went for capital goods/heavy industries [22; 39-40].

The philosophy and strategies developed and chosen by the political elites coming from upper class people, landlords, businessmen and bureaucratic elites having close link with businessmen and industrial elites, based on functional inequality, created a small number of capitalist barons. The policies adopted helped businessmen and industrialists to derive an annual return of 100 per cent [23; 36] and in many cases several hundred per cent over their investment in a year. A number of scholars like Rehman Sobhan, G.F. Papanek, Mahbub-ul-Haq, Lawrence J. White, vividly described the pattern of such heavy concentration of wealth in a few hands. Even M. Shoaeb, one of the Finance Minister of Pakistan, in his budget (1965-66) speech recognised this and stated that "there is a growing discontent in the country about increasing concentration of income, wealth and economic power in the hands of a relatively few."

However, the strategies followed had one good side. The pace of industrial development in the large and medium sector was rapid. But at the same time it is noticeable that growth in East Pakistan and the overall development in small scale enterprises were rather slow. Following table shows the picture in this regard.

Percentage share of manufacturing output in Gross Domestic Product and Gross Regional output.

	1949-50	1959-60	1969-70
<u>Pakistan</u>			
Manufacturing/GDP	5.8	9.4	12.0
Large Scale/GDP	1.0	5.0	8.0
Small Scale/GDP	4.8	4.0	3.2
<u>East Pakistan</u>			
M/GRP	3.8	6.1	8.4
L/GRP	.5	2.7	5.4
S/GRP	3.3	3.4	3.0
<u>West Pakistan</u>			
M/GRP	7.9	12.3	15.8
L/GRP	2.2	7.0	12.0
S/GRP	5.7	5.3	3.8

Source: [24;8]

But in a nutshell the strategy was a failure. Because it made neither perceptible impact on the standard of living of the general people nor did lead the industrial progress in the right direction giving strong base for take off through heavy and basic industries. The policy led to undesirable concentration wealth in the hands of industrialists and Z.A. Bhutto in this context pointed out that a new industrial class so grown out of state patronage unabashedly plundered the national wealth [25]. In last analysis cost of industrialisation and subsidies there to come from agriculture, industrial labour and general mass as a whole. The alternative strategy of developing small scale enterprises would, in fact, lessen the inequality and inflationary condition to a great extent.

B) INDUSTRIAL POLICY IN BANGLADESH 1971-74.

From British period till today industry remained a minor sector in the economy of Bangladesh for various historical and circumstantial reasons. Traditionally she lacked indigenous entrepreneurial class. In Pakistani period large portion of foreign and allocations and financial assistance of the centrally sponsored financial institutions went to West Pakistan and industrialists of that regions. The resultant entrepreneurial vacuum is indicated from the fact that 21 per cent of its industrial establishments, 27 per cent of trading houses and 75 per cent of bank organisations were owned and controlled by non-locals. As a result of independence the non-local enterprises were abandoned by their owners. The immediate task before the government was to take charge of abandoned units and thus on 3rd January, 1972 Acting President's Order No.1 was proclaimed to take charge of abandoned enterprises. By this Act 784 industrial units were vested in the government. The extension of public ownership to the abandoned units provided an occasion for serious consideration of the electoral pledges given by the ruling party that the heavy and basic industries would be nationalized [26; 219]. The nationalisation policy came under discussion and after a several rounds of discussion between planning commission and the Ministry of Industries, the Cabinet decided about nationalisation policy. Thus on 26th March 1972, Sheikh Mujibur Rahman, the then Prime Minister of Bangladesh announced that "having regard to objective realities of our society, the old social order must be demolished in order to lay the foundation of new society". To this end he declared that "the following sectors of the economy stands nationalised with immediate order....(3) jute mills, (4) Textile mills, (5) Sugar mills...(7) all abandoned and absentee owners' properties with fixed assets valued at taka 1.5 million or above." As a result of this nationalisation policy 86

per cent of the total industrial assets came under government control. This included 60 per cent of the industries managed by EPIDC, 25 per cent of the abandoned industries and 15 per cent of the industries belonging to Bangladeshi industrialists. The nationalisation policy is thus seen to have touched very little over the Bangladeshi entrepreneurs compared to total size of nationalised sector. However, through this policy the share of public sector increased to 86 per cent compared to 36 per cent of pre-liberation period. In January 1973, the Industrial Investment Policy for 1972-73 was announced. This policy recognised limited role of private sector to play within the planned frame work. The role of private sector was restricted to small and medium sized industrial units with fixed asset not exceeding taka 25 lakh. It restricted foreign invest too allowable only in collaboration with public sector. The policy placed moratorium on nationalisation of enterprises for ten years with assets less than 2.5 million taka. But strangely in 1974, within $2\frac{1}{2}$ years of independence, the party in power brought a radical change in industrial policy. The industrial policy of 1974 declared that to increase investment and activities in the private sector the maximum ceiling of investment in private sector industrial units is raised to taka 3 crores from taka 25 lack. Foreign investment in collaboration with public and private sector was also encouraged. The period of moratorium increased to 15 years from 10 years. The First Five Year Plan 1973-78 spelled out the industrial strategy for greater public sector role and limited the role of private sector and thus stated that the aim was to secure ascendancy of the public sector while leaving small and cottage industry largely to private sector. It further pointed out that state and cooperative enterprises are to play increasingly dominating role leaving retail trade primarily in the hands of private traders. [27; 6].

STRATEGIES AND IMPACT

In the context of post-independence situation the strategy of industrial development assigned a key role to private sector for the development of small-scale industries. Industries Division and Bangladesh Small Scale Industries Corporation were assigned the task of providing promotional facilities and state financing institutions were assigned the task of providing financial facilities for the development of small scale industries. During the period 1972-73 to 1974-75 private sector response to the policy measures was not discouraging considering the state of economy of that period which will be revealed from the following table.

Private investment in industry

Financing Agencies	Application Received	Sanctioned	Average unit size	
BSIC	428	21	TK.	1.4 million
BSB	440	36		1.2 "
BSRS	27	7		1.7 "
DG.Industries	24	14		.03 "
	912	78		

It is thus seen that investors were not discouraged by the policy. What was required was the pre-application consultant service (which could reduce rejection of application of technical ground) and liberal attitude of the financing authorities with an stress on supervised loan scheme.

For management of nationalised enterprises 'public corporation' form was chosen and on 26th March 1972 10 sector corporation were created through the Bangladesh Industrial Enterprises (Nationalisation) Order 1972 to which another corporation was added in September of the same year making a total of 11 sector corporations. The corporations were entrusted with the responsibilities of controlling, coordinating and supervising the enterprises placed under them. But the crux of the problem was that the objectives of the sector corporation and the enterprises were not clearly spelled out and that the relationship between different tiers of management i.e. corporation and enterprises, and the corporation and the ministries were not logically and clearly settled and given through policy pronouncement or Rules of Business. In the absence of rules of business all powers relating to the operations of public enterprises vested in the Government to be delegated to the corporations at the discretion of the government. Thus adequate autonomy at corporation level and its further delegation to enterprise level hindered abinitio which adversely affected the performance of public sector enterprises. Further the coming of independence witnessed critical shortage of skilled persons to run the enterprises. There was no socialist cadre too to take charge of the management of the enterprises. Nationalization policy was announced first and then search for institutional arrangement was sought. Under such a context pointed out that the planning authorities put the cart before the horse [28; 148].

Nationalization scheme was a logical step in post-independence scenerio. Although this step was termed as a step to socialism yet the party in power did not explain as to what they meant by socialist pattern [29; 99]. In fact the party in power (Awami League) was not a socialist party. The Awami League because of composition of various groups supporting it, represented what like Professor Kalecki had called "the intermediate regime", as against the rule of large-scale industrialists and landlords, it was a regime of lower middle class. Thus it was not unnatural that the programme of socialist transmission, as they called it, received a set-back due to waning of influence of socialist in the Awami League [30; 83]. The revision of industrial policy in 1974 to some extent was the result of revival of forces of capitalist within the Awami League. Bureaucrats were the ready source of counsel to those bourgeoisie and party members inimical of state policy regarding real and imagined failure of the state sector. The flood crisis of 1974 had a significant impact on revision of industrial policy. Following this phase of crisis, the Bangladesh Government responded to western Donors' pressure on not just on investment policy but on agreeing to an aid consortium which it had rejected earlier and subsequently such pressure played a vital role in changing the philosophy of development strategy relevant to industrialisation.

Within such constraints the public sector enterprises were recovering well to take off stage. Contrary to misleading propaganda it did not fail to an alarming state rather their performance was to some extent satisfactory although not praiseworthy. For instances, Rehman Sobhan cited a production index report prepared by World Bank which showed that by 1973-74 production in many enterprises already recovered to 1969-70 levels [31; 276]. Appendix I shows the production of major industrial commodities of public sector enterprises which also confirms the statement. But it was time and again observed that some vested quarters portrayed the picture of public sector in twisted form and cried loudly about financial loss being incurred. In fact many of the problems of public enterprises were man made and instead of taking steps to solve them additional problems were created. Further, it may be noted that the performance of public enterprises cannot be judged solely and absolutely on the basis of profit. Moreover, the regime's poor performance was to largely blamed by some others on its strategy of economic planning which was linked to corrupt and inefficient management in the nationalized and public sector. The hectic campaign in fact eroded support of a significant portion of general mass from the principle of socialist economic planning or public sector. Curiously enough both the pro-Chinese left and capitalist

right started advocating free enterprise to boost production and arrest inflationary trend.

INDUSTRIAL POLICY IN BANGLADESH: 1975

A reversal of industrial policy since the assassination of Sheikh Mujibur Rahman paved the revival of private sector with its full vigour. The Military regime of General Ziaur Rahman brought fundamental change in the approach of the government towards public and private sector. Addressing the Chamber of Commerce and Industries in Dhaka Ziaur Rahman categorically stated that "the Government is ready to extend all possible support to private sector for utilizing the full potential of private entrepreneurs. The revised Investment policy announced in December 1975 raised the ceiling of private investment from taka 3 crores to taka 10 crores, both foreign and local collaborators were allowed to participate with public sector to set up industries within certain conditions. The provision of 15 years moratorium on nationalization was withdrawn. Further the policy change also aimed to abbreviate the size of public sector and correspondingly expand the functions of private sector and as such decision was taken to disinvest public sector enterprises which are comparatively small in size, located in remote places and unprofitable [32; 25]. Thus disinvestment process started from 1976 and till 1982 a total of 116 units of public sector corporations were disinvested/denationalised. It was further seen that of the units disinvested during this period about 32 per cent were profitable ones. In post'82 period this trend of disinvesting the profitable enterprises increased further [33; 7]. Opportunities were given to the merchant class, who acquired black money through creating scarcity in the markets for goods and licencing system (popularly called brief case business, to make their black money white through purchase of disinvested units. A special provision in Income-tax Act provided further scope to make black money white through declaring savings with a payment of nominal tax. The Two Year Plan 1978-80 emphasized the role of private sector and stressed that it would be stimulated especially in the export and agro-based industries. It is further striking to observe that the Second Five Year Plan 1980-85 did not indicate detail strategy for nationalised sector like FFYP rather stated in general term that public sector has come to play a dominant role ... private sector has been historically dependent on the support of public sector.

In line with these policy measures various incentives were also provided to private sector. A review of the lending operations of financial institutions showed that by 1976-77 private sector was getting edge over

public sector. For instance Bangladesh Shilpa Bank sanctioned 90 per cent of its loan to private sector in 1976-77 compared to 17 per cent in 1974-75. Investment Corporation of Bangladesh was set up in 1976 to provide institution support to stock exchange and to provide bridge financing to private sector.

Meanwhile, assassination of General Ziaur Rahman and ultimate take over of power by General H.M. Ershad in March 1982 further strengthened the hand of private sector. The new industrial policy was announced in 1982 which inter alia provided for expansion of manufacturing sector with increased participations of private sector. The role of public sector went to the background. The policy confined the role of public sector in further to the establishment of basic heavy and strategic industry. Ershad regime further announced an Industrial policy in 1986 wherein the objective of the industrial policies were sought to be achieved through increased emphasis on private sector and expanding small and cottage industries as a priority sector. The Third Five Year Plan 1985-90 recognised that private sector has historical role to play and advocated for reduced direct interference with the economy. It assured that government would play catalytic role in providing basic services to the private sector.

STRATEGIES AND IMPACT

The above policies undertaken after 1975 clearly indicates that the development strategy was designed to encourage the private entrepreneurs. The strategies adopted during these period clearly resembles to those of Pakistani period. The entrepreneurs were given foreign exchange at less than market value through import licensing, and capital at a cheaper rate of interest through credit institutions. They obtain industrial capital goods and raw materials cheaper because of the provisions of low tariffs. They are protected from external competition through protective devices. They are offered further subsidies in power, water, transport, training etc. The tax system is also favourable. Moreover, BSB and BSRS have also diverted their funds to private sector and have stopped giving loan to public sector although repayment performance of public sector is better compared to private sector. For instance, as per Bangladesh Economic Survey 1986-87 the outstanding over due loan of BSB and BSRS as from public and private sector as on 30.6.87 stood at 4.72 and 282.36 and 56.70 and 458.30 crores taka respectively. That is 98 per cent over due loan of BSB and 89 per cent of BSRS lie with private sector. It reveals that private sector is robbing peoples' money through facilities provided through state mechanism. Moreover, Export Processing Zone in Chittagong has been established to attract foreign capital.

Considerable volume of foreign credit funded by World Bank and Asian Development Bank is being channelized to private sector development. The provision of aid finance to support development of capitalism in Bangladesh has become an important demonstration of the use of aid in the service of ideology [34; 197]. In the ultimate analysis the result of these strategies leading the country to pre-independence position. For instances foreign assistance/aid in the industrial sector mostly goes to build import substituted enterprises like that of Pakistan period. But without building capital goods industry the industrial base will remain weak. Loan diverted to private sector is increasing the wealth of the industrialists. Moreover, the industrialists are not repaying the loan of public sector financial institution rather building their empire. As a result the public sector development banks (BSB and BSRS) were facing liquidity crisis. Even the donors have threatened to stop financing these institutions if their recovery measures are not strengthened. But the political pressure is vitiating the recovery steps taken by these institutions. Newspapers provide sample examples of private sector enterprises/institutions grown at the cost of public sector financial institutions' resources. A number of cover stories appeared in weeklies on this matter.

The interest for development of private sector and their aid compulsion is reflected in the character and aspirations of political leaders and local growing bourgeoisie. From early 1985 the role of bureaucratic elites became important. In fact bureaucratic elites are responsible for development strategy. Bureaucratic elites of Bangladesh are decedent of their Pakistani counterparts and most of them hold the philosophy of their predecessor with regard to development strategy. Vacuum of democratic political institutions to run the state on behalf of the toiling mass has given rise to this state affairs.

Post'75 reversal trend in industrial policy seemed to have developed under the following assumptions:

- i) Public sector enterprises are inefficient by nature.
- ii) Private enterprises are almost always efficient.
- iii) Private sector provides opportunity for accelerated industrial growth.

In the countries outside totally socialised system public enterprises are mainly the outcome of sheer necessity. It is found to develop heavy and basic industries i.e. the sectors where private enterprises do not come forward (for their long gestation period of poor rate of return), to develop backward region, to curb private sector monopoly, to take over sick enterprises overall interest of the economy etc. In such a case their

performance cannot and should not be measured through financial profit only. A system of total performance measurement based on multiple criteria is best suited. Moreover, research have revealed that there is nothing specially inherent in the inefficiency of public enterprises and efficiency in private enterprises. A recent survey in Bangladesh conducted over disinvested and denationalised industries revealed mixed trend in the performance. It revealed that the production of 54% the reporting samples registered improvement and 48% registered fall. For 54% of the reported sample real sales increased and for 35% it decreased. Out of 24 reported sample (some did not furnish data) 4 enterprises turned losses into profit, 2 raised profits, 2 cut down earlier losses, 4 which were profitable became lossing, 7 raised the level of losses further and 5 were closed down. For 29% of the enterprises employment level has risen and for 71% it has fallen. Thus it is seen that search for Alauddin's lamp in private enterprises is a vain exercise. There is nothing inherent virtue in private enterprises. Efficiency or otherwise is factor both for private and public sector enterprises depending mostly on environment. In this connection it can be pointed out that the problem of inefficiency in public enterprises is basically of environment and the chief reason is the government's interference in day to day management. The causes of inefficiencies are to be identified and attacked rather than privatisation of public enterprises. As to the accelerate growth the question that arises is industrialisation for whom? The new Nation (Dhaka) in an editorial on December 29, 1986 posed this question too. It said "Is it for the benefit of a minority industrialists under the cover of a sheltered market at the cost of consumer?" It further pointed out "we have consistently advocated the policy of disinvestment and strong private sector ... our support to this policy does not mean a few owners of disinvested industries or industrialists will create monopoly position in the name of private sector. We always tried to spell out the danger of undue protectionism. ..." In fact what has been seen is that the privatisation and enthusiastic support to private sector created monopoly position and the lot of the general people through industrialisation has not improved.

6. POLICY IMPLICATIONS

i) The economic scenario makes it imperative for Bangladesh to go clearly with equitable distribution of wealth in contrast to classified development strategy. For this we should go back not to the strategy of Pakistani period but to post-independence 1972-73 strategy wherein responsibility for development of small and cottage industry was assigned to private sector. In fact there is limit to the creation of employment

opportunity in large scale capital intensive industry and crop sector. Development of small and cottage industry in planned way with supervised credit seems to be right answer to solve the problem of absorbing increasing labour force in Bangladesh. This is not to deny the role of private sector in economic development further but to keep them under control so that they cannot grow into exploiting class.

ii) Stop privatisation. However, it is not the intention to convey misleading message that all is well with public sector enterprises. Rather what is emphasized is that privatisation has not improved the productivity and overall national profitability. None has the right to provide opportunity to a few so-called industrialists to create their empire at the cost of general mass. Status quo may be maintained for enterprises which have been disinvested and running well not to cause further chaos. But those enterprises for which purchase price have not been paid till now may be taken back. Economic protection should not go to that extent which protect inefficiency at the cost of state exchequer. At the same time steps should be taken to increase efficiencies of public sector through identifying and solving the problems. They should be given sufficient autonomy under properly drawn rules of business and their performance be judged according to Total Performance Measurement System. Efficient management be rewarded and inefficient and corrupt management be punished.

iii) Attempt should be made to lessen aid dependency. This is necessary because the donors will pursue the role of friendly persuader to re-shape the policy of the client country to conform to the ideological preconceptions and policy orientation of donors which may not be worth while for recipient country like Bangladesh to follow. In fact privatisation policy in Bangladesh has not developed in the context of economic benefit rather it was a political choice of the rulers under pressure from donors. Political and bureaucratic elites found their interest merged and attempted for policy reversal. This was found not conducive for Bangladesh.

In the context of welfare strategy of the government of Bangladesh the saving efforts needs to be broadened. The performance to choose capital formation and income inequality strategy synonymous is not helpful for Bangladesh. According to Harry Jhonson there is a strong possibility of the savings rate increasing as a result of re-distribution of incomes from the rich to power.

Planners of Bangladesh can put it into test sincerely with requisite environmental support. Moreover, improvement of the conditions of poor through this re-distribution policy likely to result labour productivity and improve the growth rate of the economy. The strategy of broad based small scale industrial development is further likely to take care of distribution aspect of development strategy.

Appendix-1 : Production of major industrial commodities (public sector)

Products	Unit	1969-70	1973-74	1975-76	1982-83	1985-86*
1. Jute goods	000 tons	560	500	485	570	280
2. Yarn	000 bales	266	231	222	201	109
3. Cloth	lac Yds.	599	793	760	435	407
4. Paper	000 Tons	30	24	18	26	43
5. News print	"	44	26	20	31	57
6. Oil products	"	16	16	13	24	10
7. Food products.	"	8	33	36	16	2
8. Sugar	"	94	88	88	181	82
9. Fertilizers	"	100	289	286	383	911
10. Chemicals	"	4	2	3	5	7
11. Glass sheet	000 sq.mts.	5	5	5	9	91
12. Iron & Steel	" M.T.	176	281	293	127	105

Sources: Bangladesh Bank Bulletin, December 1975, Economic Trends, December 1975 and Bangladesh Economic Survey, 1985-86

* Excluding disinvested enterprises.

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PRICING POLICY IN THE TRANSPORT SECTOR: THE CASE OF BANGLADESH RAILWAY

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1. INTRODUCTION

There is a great deal of controversy as to the pricing policy in the transport sector. Although theoretically a number of guiding principles in this regard can be suggested, in view of their limitations and shortcomings only a few is found to be pursued in practice. The issue of pricing in the transport sector is also subject to criticism with regard to their justification in developing economy which is structurally different from the developed ones. Pricing policy which is suitable for developed economy may not be so in developing economy and vice versa. However, despite limitations associated with each principle, some of these principles are found to be applied. The major principles in this context are cost of service principle, value of service principle, equal mileage rate principle, telescopic rate principle, principle of differential charging or charging what the traffic will bear and principle of zonal charging [14; 40-54]. It may be said in this respect that no single principle is the best principle. If an existing rate does not suit, it must be changed. "No matter how thoroughly conditions are studied before a new rate is made the result of the application of the former rate must be gathered promptly and in detail and if the outcome as shown by past experience has not been satisfactory the rate must be changed in the light of facts" [9; 102]. It is also suggested that prices of transport should reflect cost of providing services. While low prices are preferred to high prices, low prices should have an economic meaning. To charge an artificially low price for a commodity the production of which incurs a high resource-cost or to charge an artificially high price for a commodity the production of which incurs a low resource cost is to promote a wasteful use of economic resources. For this reason pricing policy which ignores costs are to be regarded with suspicion. In the circumstances, where alternative transport facilities are being provided by the same or different transport undertaking, the prices of transport will influence the choice of transport users. If these prices do not reflect relative costs, there will be no means of ensuring that the choice made by the transport user will favour the one which incurs least resource

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Hence, if transport services in the aggregate are to be provided with the minimum expenditure of scarce economic resources it is necessary for the prices of particular transport to reflect costs incurred [12;14]. By this, it is endeavoured to mean that a transport undertaking has to cover its total cost¹ by the revenue which it earns. Although from the point of view of dispersion of industries the principle of pricing transport on the basis of cost is criticised, there is valid reasons for pricing transport service to reflect cost of providing that service [12; 157]. By this we mean that the prices charged to traffic units carried on any transport service should be fixed with the object of bringing in a 'basic'² revenue in respect of each round trip operated and a 'supplementary'³ revenue equal to the cost of replacing the existing resources. If this object is achieved then the continuance of the transport service in its existing form is economically worthwhile. If it is not achieved then the additional revenue which can be obtained over and above the 'basic' revenue relevant to each round trip operated provides the indication of the extent to which existing fixed resources should be replaced. In consideration of such complicated issues in the pricing of public utilities like transport service, this paper attempts an analysis of the pricing of transport services provided by the Bangladesh railway. The discussion has been presented in six section. Sections 1 is the introductory one while Section 2 presents some theoretical issues regarding the pricing of transport services. Section 3 traces the historical background of the fare and rate structure in the railway since the British rule in India while Section 4 focuses on the existing fares and rate structure in Bangladesh. Section 5 highlights the salient features of the present pricing policy. Section 6 contains some policy recommendations in this respect.

2. SOME THEORETICAL CONSIDERATIONS

It is found that the principle of 'what the traffic will bear' or the principle of differential charging has been adopted by nearly all the railways of the world [14; 54]. It may be relevant to mention that the principle of 'what the traffic will bear' is often regarded as being at variance with a system of

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1. Total cost of the railway in this respect may be functionally represented as: total cost = $a + bX$ where X is the ton-mile of freight per mile of transport facility [13;215].
 2. Revenue which covers variable cost of operating a round trip including the variable terminal cost of that round trip is referred to as the 'Basic' revenue.
 3. Revenue over and above the 'basic' revenue is described as the 'Supplementary' Revenue [12;157-8].

pricing based on costs. But in fact, charging what the traffic will bear and charging on a cost basis are not mutually exclusive [12; 164].

It is to be mentioned that the phrase charging what the traffic will bear can assume two meanings. First, it may mean that prices are to be fixed in such a way that in respect of each traffic carried the maximum revenue is obtained regardless of the particular costs involved. By this interpretation it is meant that no traffic should be charged a lower rate or fare when it will bear a higher rate or fare [12; 164]. Second, it may mean that no traffic should be charged a price which it will not bear when, at a lower price, the traffic would be prepared to move: always providing that this lower price will cover the particular costs incurred by the movement of the traffic. When interpreted within a cost framework, the principle of charging what the traffic will bear indicates how an indivisible cost can be spread over different traffics with the minimum of discouragement to actual and potential users. Such a method of pricing is one way of covering the costs of indivisible variable resources and also of (fixed) resources which are capable of being worked at varying degrees of intensity with no corresponding variation in economic cost.

Pricing of any transport service on the basis of cost incurred in providing the services often invokes the controversy whether the pricing should be based on marginal or total cost of providing the service. It is historically found that except in an extremely limited number of countries the pricing on total cost recovery basis rather than marginal cost is more or less pursued. In all practical purposes, however, total cost recovery has been considered in relation to pricing of transport in developing economies because in the developed economy, substitution in the form of competition between a mature rail system and a growing industry of high way transport dominates the transport scene. On the other hand, complementarity or necessity of added transport of some kind is the basic attribute of the process of development. In the former case marginal analyses must dominate while in the latter the important consideration is the recovery of total cost [13; 222-3]. Thus, instead of going deep into the controversy related to marginal cost pricing and total cost recovery pricing we consider the latter as a reasonable fair criterion for pricing transport service in a developing economy like Bangladesh. In the light of the above, an attempt has been made in this paper to review the pricing policy of rail transport in Bangladesh.

3. HISTORICAL BACKGROUND OF FARES AND RATES

Pricing policy of the railway sector of Bangladesh dates back to the policy pursued during the British rule in India and it has been reflected in the rate structure of British period. During the British period the basic rates were the class (standard) rates which quoted for about a hundred years on flat mileage and there had been many lower non-standard rates as well viz. the schedule rates, station to station rates, special rates and adjusted rates [11; 168]. Besides, there were a number of concessional rates. It is relevant to mention that the schedule rates had been fixed on telescopic mileage and were found to be particularly useful in the depression of the 'Thirties' when owing to drastic fall in the prices the commodities were unable to find a market within or outside the country. As early as 1891 there were five categories of rates applicable to five broad classes of commodities and special rates for explosive (Table 1).

Table - 1 : Rate Structure of the Railway: 1891

Class	Rate per-maund per mile
I	0.33 pie
II	0.500
III	0.666
IV	0.833
V	1.000
Explosive	1.500

Source: [15;168]

It is to be mentioned that in the passenger sector there were as many as four categories of fares related to four classes of passengers and the basis of fares fixed in 1886 used to have been applied in the erstwhile Pakistan railway (Table-2).

Table - 2 : Passenger Fare of the Railway: 1886

Class	Fare per passenger-mile
I	18 pies
II	9 "
III/Inter	4 "
IV/Lowest	2.50 "

Source : [11;156-7]

It is worthwhile to mention that in view of the inadequacy of the rates and fares to cover the operating cost of the railway both rates and fares were enhanced and a number of adjustment through surcharges were made since 1917. As a result of the general rise in prices and wages and the decline in the earnings following World War I, surcharge taxes were imposed on the goods rates by the government of India in 1917 and 1921. On the basis of recommendation of Acworth Committee classification of goods was revised in 1922 and the number of the classification of goods was increased to ten. In 1936 the number of categories was further changed and raised to sixteen in place of ten. The revision of rate structure did not change the position till World War II and the government had to impose surcharge on rates to meet high operating cost of railway. By 1953 numerous surcharges were in existence and the rate structure had become so complicated that further revision became necessary. Hence on D'souza⁴ recommendation the various surcharges levied during 1940-53 were absorbed and a new set of fourteen classes of rates was introduced [11; 160-6]. A distinctive feature of these rates was that for the first time on the then Pakistan railway a telescopic classification was adopted with a minimum rate.

In the passenger sector, in consideration of inadequacy of fares to cover the operating costs and as a war measure to discourage passenger traffic, the fares were enhanced in 1917. But the enhanced fare was not enough to cover the operating cost of railway. Hence after 1917, a number of changes were made on account of World War II, increased cost of running the railways and the requirement of central exchequer.

4. PRESENT RATES AND FARES IN BANGLADESH RAILWAY

It is interesting to note that the basis of the existing rate structure of Bangladesh railway dates back to 1954 and since then there has been no rationalization of the structure except some ad hoc increases on certain occasions. These increases however, have failed to keep pace with the increase in the cost of operation due to inflation and other factors. It may be mentioned that in the freight sector the cost per ton-mile (average of broad gauge and metre gauge) incurred by the railway is 88.0 paisa (on current replacement basis) [3; 26], while the existing freight rate charged per ton-mile is 56.8 paisa only [8]. Besides, eight major

4. The then Pakistani expert railway rate making.

commodities such as foodgrain, jute and jute goods, Fertilizers, Cements, Iron and Steel, Coal Shingles and Boulders and petroleum products enjoy different concessional rates. Moreover, the railway is obliged to carry foodgrains, fertilizers, defence traffic, postal traffic, sugar-cane traffic, kerosene oil, and relief materials at subsidized rates which are not only much below the cost of operation but also below the rates prescribed by the government for similar traffic. As a result, user agencies of these items are being heavily subsidized by the railway. It is interesting that in 1975-76 the amount of revenue foregone by the railway due to charging subsidized rates for foodgrain, defence traffic, postal traffic, sugar-cane, kerosene oil and relief materials was Tk. 6.37 crore. In 1976-77, the amount of revenue loss came down to Tk. 1.99 crores due to partial withdrawal of subsidy on these items [5; 6]. However, the practice of cross-subsidy is still being pursued in the Bangladesh railway.

In the passenger sector, the existing rail fare (average of Third Class mail and local) is 8.5 paisa per passenger mile as against the operating cost of 32.5 paisa per passenger mile [3; Vol. 7; 33]. Although the 1st Class and 2nd Class fares of railway are higher than the operating cost, the passenger sector as a whole is perpetually a loss-making concern. This is due to the fact that the Third Class passenger traffic constitutes over 90 per cent of the total passenger traffic of Bangladesh railway and the fare charged from third class passenger is monstrously below the operating cost per passenger mile.

It is relevant to mention that in Bangladesh not to speak of railway only, fares of other modes of public transport have been found to be less than the operating cost as well. Although due to recent increase in bus fares, the buses are in a position to roughly meet the commercial operating cost, the rail fares are still out of line not only with cost but also with fares of other competing modes of transport. This seems to be one of the causes of distortion in the transport sector in Bangladesh. The situation is aggravated by the wide spread incidence of ticketless travel which the railway fails to control. It is to be mentioned that the fares and rates of IWTC like railway is much below the existing cost of operation and as such the special committee recommended that the existing fares and freight rates of IWTC should be increased by 46 per cent and 98 per cent respectively to cover the cost of operation [5].

It is evident from above that during the British period the price charged by railway was not adequate to cover the cost of operation. Despite substantial increase in fares and rates the railway is still not in a position

to cover the operating cost. Seemingly it is due to the fact that the adjustment in railway charges has not been made strictly in accordance with the need to cover the total operating cost which due to price increase and other factors increased much faster than the increased railway charges. It also emerges from above that since the inception of railway during British period, the pricing policy was based on the principle of differential charging or charging what the traffic will bear. With certain modifications the same pricing policy seems to have been pursued in the Bangladesh railway even today. It is evident from the differential fare and rate structure as well as from the repeated attempt to increase the charges to cover the operating cost of railway. It seems that as railway falls in the category of public utility the aspect of commercial viability has not been seriously taken into consideration and as such the pricing policy of the railway has not been framed strictly on the basis of costs.

5. SOME FEATURES OF EXISTING PRICING POLICY

The existing fare and rate structure so to say the pricing policy of Bangladesh railway is characterized by some salient features. First, although it seems that the principle of differential charging is applied, the price charged for rail service does not cover the total cost embodying the 'basic' and the 'supplementary' revenue. Even in some cases it fails to cover the 'basic' revenue. Second, the railway has been providing services to some user agencies on subsidized rates which has resulted in revenue losses of the railway in a situation where the railway is already suffering revenue losses due to development of other modes of transport particularly the road transport in the country. Third, there is apparently hesitancy on the part of government to raise rail fare and rates sufficiently to cover the cost of operation.

It is beyond doubt that railways are commercial concern but they are not commercial concern in the conventional sense. As a state undertaking they owe it to the public to provide transport at the cheapest rates consistent with the maintenance of their financial solvency and providing means for their development. Consequently, they must aim at charging not necessarily what the traffic can bear but what is justified in relation to their cost of operation and essential development [6; Vol I, 194]. In principle this aspect of commercial viability, of the Bangladesh railway has been stressed on and the principle of commercial-cum utility service has avowedly been mentioned in the plan documents of the government of Bangladesh [1; 301]. It is noticeable that despite realization of the need for fixing prices of the rail service in relation to its cost of operation and

essential development the fares and rates of Bangladesh railway have been fixed in such a way that in some cases it fails to cover even the variable cost. In the freight sector railway covers a small proportion of its fixed cost in addition to the variable cost but in the passenger sector the fares are so low that not to speak of total cost it fails to cover even the variable cost. The fares and rates of the railway have no doubt been increased over time but the increased price of railway service was never adequate to cover the total cost. This policy of charging less than the cost price of the Bangladesh railway seems to have been associated with the following considerations:

- i. As the railway is a public utility, providing service at the cheapest price has been considered as the prime concern;
- ii. Sharp increase in the price of rail services is likely to rouse political resistance;
- iii. As already railway has been facing competition from other modes of transport in general and road transport in particular any further increase in fares and rates might result in further traffic diversion to other modes and accentuate the magnitude of revenue loss of the railway.
- iv. The existing wide spread incidence of ticketless travel might increase further and tendency of the transport users to evade payments and bribe the railway official might aggravate the situation specially when the effective control over the ticketless travel is lacking.

6. SOME POLICY RECOMMENDATION

Having considered the above facts, it may be stated that although the railway is a public utility pricing of the railway services should ideally reflect the total cost of operation as has been mentioned above. Unlike many other countries although Bangladesh railway is exclusively sponsored by the state and all expenditure involved in the operation of railway is borne by the state it is not justified to throw the whole burden of finding savings required for the railway on to the government or so to say to the rest of the economy particularly when it can make good profits without any apparent distortion of output [10; 215]. It is true that a policy of higher charges to make railways earn a surplus represents a form of indirect taxation which could be regressive in its effects. This might be true for increase in rail passengers fare when it hits the low income groups. In this situation political resistance is also likely to take place on the plea that low income groups are adversely affected due to the policy of such higher

charges. But there is not likely to be any significant effect on low income groups from a rise in freight charges on industrial raw materials. If in consideration of adverse effect on low income groups the required increase⁵ in passenger fares could not be possible the freight charges could be increased to compensate the loss suffered by the railway in the passenger sector. This policy of internal-subsidization is found to be practised in the transport sector of many countries [12; 148-9]. Even in Bangladesh, the BRTC follows the policy of internal-subsidization to compensate the loss of BRTC bus services by earning surplus revenue from the truck service. However, if it is accepted that charges for each service and commodity should reflect as closely as practicable their own estimated costs so that the user of these services pays the true cost and the pattern of demand for these different services is not distorted, the policy of internal-subsidization, may not be always justifiable.

Broadly speaking, it is difficult to find any economic justification for not increasing the passenger fares sufficiently to cover the operating cost particularly when it is well above the earnings in the passenger sector. Although there is a possibility that increased fares may result in further traffic diversion from railway to other modes only the negative aspect of fare increase should not be considered. If the demand for passenger transport is elastic with respect to fares, an upward revision of fares may reduce the pressure on capacity and release resources for investment in freight capacity. Particularly when the railway finds itself unable to carry all the freight traffic on offer [5]. Even if the passenger demand is inelastic then a rise in fares may increase the earnings of railway for reinvestment. The latter proposition may be fairly correct where the railway is the only means of transport and no other means of transport is competing with railway. In Bangladesh, there are many areas where facilities of road transport is still lacking and with the development of road transport since 1960s, in some areas rail and road transport are working as complementary to each other rather than substitute. In this situation, traffic diversion resulting from the increase in rail fares is not likely to take place.

5. Planning Commission's suggestion for an increase of 150 per cent in the rail fare would bring fares upto the level of commercial variable cost based on the present occupancy factor. Although this seems to be a large increase in rail fare but it need not thereby be ruled out on grounds of political acceptability. Passenger launch fares were raised by about 65 per cent in 1974 without provoking violent reaction from transport users and with beneficial effects on the severe and dangerous evil of overloading [3; Vol. 1,33-4].

It is worthwhile to mention that in the areas where rail-road competition exists traffic diversion may take place to some extent because of sharp increase in the passenger fares. But this is a part of the objective of the transport policy of the government of Bangladesh to distribute the passenger traffic to other modes of transport for lessening the burden on railway [3; 34]. It is also possible that other might make less trips because of increased railway fare. But if there is effective control over ticketless travel, the net effect in terms of revenue yielding passenger traffic may probably be only a small decline. It has been found that the transport users do not only consider the money cost of travel, rather they consider the various attributes of different modes of transport such as economy of time saving comfort, amount of risk and pilferage, punctuality of service etc. If the railway along with the increase in fare can ensure the improvement of its service quality, extent of traffic diversion may be reduced to some extent. The inter city express train service is a glaring example in this context.

It has been pointed out that in the railway the practice of cross-subsidization has resulted in revenue losses. This policy of cross-subsidization seems to have been associated with the consideration of social impact of increased freight charges. The policy makers most likely thought in the line that higher charges for these items would raise the price level and affect adversely the agriculturists, industrialists and the public in general. The agricultural output might have been affected due to higher input cost resulting from higher charges for fertilizers, construction and other industrial activities might have been affected due to higher freight charges for Iron & Steel, Cement, Coal, Shingles and Boulders. It is also likely that a large revision of foodgrains freight charges would have had a considerable effect on the price of food to urban low income consumers specially (assuming that mostly the demand of the rural low income consumers are being met from local production of food). It seems that in apprehension of increase in the price level of the above item the policy makers probably did not increase the freight charges sufficiently to cover the operating cost of the railway. Although it is true that higher charges for some of these items like foodgrains, fertilizers, kerosine oil etc. would increase their price level to some extent and affect the consumers of these items, the situation could have been met by providing subsidy from the general government funds⁶ rather than from the revenue of the

6. Even if subsidy to certain services is necessary it is preferable for the desired subsidies to be met from general government revenues [7; 43].

railway itself particularly in circumstances where railway was already suffering losses due to low freight rates but requiring huge investment funds for maintenance and replacement work.

Broadly speaking, although the pricing policy of Bangladesh railway is claimed to have been based on the principle of commercial viability cum utility service, the commercial consideration appears to have been subservient to utility-consideration. This has resulted in perpetual loss in the railway sector and created problems in generating funds to meet the routine replacement requirement and also to provide facilities for improving the quality of service without which the railway is likely to suffer further losses.

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AN ANALYSIS OF INLAND WATER TRANSPORT OPERATING COST IN BANGLADESH

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INTRODUCTION

Inland Water Transport is a much neglected sector in our economy. Considering the length of riverine networks and their reach to remote rural areas of Bangladesh, inland water transport should have received more attention than what it is receiving now. Development plans for air, roads and railway transportation were taken after liberation on a priority basis, but the waterways encompassing about 8250 miles in the country (of which 5240 and 3245 miles are navigable during monsoon and dry seasons respectively) did not receive adequate attention. In fact, inland water transport is the mode of transport available for more than three crores of people in the southern region of Bangladesh. In the last fifteen years, only six inland water transport vessels were procured by the Bangladesh Inland Water Transport Corporation (BIWTC) for carrying passengers in the public sectors. The picture in the private sector is not much different. Deteriorating condition of the waterways, increased cost and consequential poor maintenance of the vessels have put this sector in great difficulty. Painful passenger and cargo launch disasters in the recent years can not be seen in isolation but with the deteriorating operating conditions of the inland water transport vessels in general.

The Bangladesh Planning Commission in the year 1976 initiated transport survey in the country under the title 'Bangladesh Transport Survey' which covered almost all areas of our transportation network. Twentynine volumes of report came out of that survey which was updated in nine volumes in the year 1980. Volume No.3 in part II, dealt with the inland water transport in the country. Discussion regarding operating cost of inland water transport was there but not in a comprehensive manner so as to draw logical conclusions regarding the changing pattern over the years and reasons thereof. Interesting and useful revelations would result in if we study how our inland water transportation operating cost (for both passenger and cargo vessels) behaved and would behaved with the increased prices of oil and also with the increase in prices for various related accessories and materials during the recent years. In the making of policies for transportation and also for fixation of fares/rates,

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very often we refer to the operating cost of the vessels in our country. The fact, however, is that our rates/fares are not cost related. An effort has been made to relate rates/fares etc. with real operating cost during the Second Five-Year plan. In such a case where the operating cost can act as the bargaining point, it would be of great interest to find out the relationship between the various variables at work and see the important changes over the years in the equation:

Operating Cost + Profit = Taka Payment by the Users.

SCOPE AND COVERAGE OF THE STUDY

This study considered the inland water transport (mechanised) operating cost of passenger and cargo vessels in operation in Bangladesh. Only the operating cost (the cost of providing a service) and not the capital cost was considered. Observation and analysis of the relevant operating cost and other data were made for only even years starting from 1974 to 1986 (i. e. a period of 12 years). Sample survey was conducted in the two important river ports of Bangladesh i.e., Narayanganj and Barisal. In all 45 replies to the questionnaire were used which constituted 14.8 per cent (approximate) of the total number of inland water transport vessel owners in the country. In the samples (stratified random sampling) were included large, medium and small owners as well as a mix of different categories of water transport vessel owners in the private sector. In the public sector, Bangladesh Inland Water Transport Corporation had been the only sample.

MAJOR HEADS AND CHANGES IN OPERATING COST IN INLAND WATER TRANSPORT

Major heads of operating cost in inland water transport have been identified under eight broad heads i.e.

- a. Fuel and Lubricants ,
- b. Repairs and Maintenance,
- c. Salary of employees,
- d. Allowances to employees,
- e. Conservance fee etc.,
- f. Government taxes,
- g. Depreciation, and
- h. Other expenses.

All the sub-heads under these heads have shown considerable increase of different magnitude over the years. The following cost changes (increase) were observed in the detailed sub-heads during the

years from 1974-1986 (Table 1). The table (1) will show that the itemwise changes in the cost of operation relevant to our inland water transport. This, however, gives us a broad outline but not the changes in cost of operation specific to any vessel either passenger or cargo. To compare such specific changes in cost, we need to workout the per unit cost changes such as 'per passenger per mile cost' and 'cost per ton of cargo per mile'. Table 2 below shows the per unit cost changes in the years 1974 and 1986.

Table 1: Percentage of Increase in Unit Cost in Different Heads of Cost for Passenger and Cargo Vessels in Private and Public Sectors.

Heads of Expenditure	Unit	Percentage Change (Increase) of 1986 cost with 1974	
		Passenger%	Cargo%
A. FUEL AND LUBRICANTS			
1. Diesel	Gallon	786	786
2. Mobil	Gallon	600	600
3. Othes (Grease, gear oil)	pound	150	150
B. REPAIRS & MAINTENANCE			
1. Major repair of Engine	per year in DD	281	333
2. Minor repair of engine	Per month in DD	126	235
3. Major repair of body	Per yr. in DDWB	282	277
4. Minor repair of body	Per-month in DDWB	270	258
5. Spare parts	Per month in DD	336	193
6. Other repairs & Maint.	per-month in DDWB	270	230
C. SALARY OF EMPLOYEES			
1. Skilled engine operator	per month	333	333
2. Asstt. Engine Operator	"	250	NA
3. Sareng (1st Class)	"	278	NA
4. Sareng (2nd class)	"	286	286
5. Sareng (3rd class)	67	267	NA
6. Crew/Khalasi (unskilled)	"	300	300
7. Master/Clerk	"	200	200
8. Office Assistant	"	343	43
9. Other employees (Fitter, Mechanics, oilman, sukani)	"	340	340
10. Security Personnel	"	229	NA
D. ALLOWANCES & OTHER BENEFITS			
1. Bonus	Per year	ND	ND
2. Overtime allowance	"	ND	ND
3. Medical	"	691	ND
4. Mess Charge	"	ND	ND
5. Compensation (per employee)	"	ND	ND
6. Other allowances	"	ND	ND.

Husain : Inland Water Transport

Table-1 (Continued)

E. CONSERVANCY FEE ETC.			
1. Terminal Fee	Per-berthing	400	333
2. Survey fee	Per vessel/Yr.	233	167
3. BIWTA Conservancy fee	Per Pass./Year	360	188
4. Others fee		ND	ND
F. GOVERNMENT TAXES			
1. Capacity tax	Per Pass./year	ND	ND
2. Tools on vessels	Per trip	300	200
3. Tools on passenger fare	Per passenger	1000	NA
4. Tools on cargo rate	Per ton-/mile	ND	500
5. Income tax	Per year/Vessel	166	194
6. Other taxes/tools	Per day/Operation	350	300
G. DEPRECIATION (on Cost)			
1. Steel body vessel	Per vessel/Year	00	00
2. Wooden body vessel	"	00	00
3. Engine	"	00	00
4. Other capital assetsof vessel	"	00	00
H. OTHER EXPENSES			
1. Advertisement/ Canvasser	Per person/ Trip	400	2000
2. Cost of maintaining accounts	Per-person / Per-month	ND	ND
3. Stationery	Per-month	405	ND
4. Salary & Allowance of officers	Per-person/ Months	325	ND
5. Printing cost	Per month	425	ND
6. Postage expense	"	177	167
7. Telephone	"	548	359
8. Electricity	"	374	517
9. Legal expense	Per year	494	303
10. Office rent	Per month	300	304
11. Entertainment	Per month	366	363
12. Conveyance/travelling	Per day	250	583
13. Subscription/donation	Per year	978	1669
14. Interest on loan	Per year	ND	ND
15. Insurance	Per year	ND	261
16. Association fee	Per vessel/day	333	508
17. General Expenses	Per month	326	242
18. Miscellaneous expenses	Per month	ND	ND
19. Other expenses	Per month	238	363

Note: DD: Double Decker; DDWB: Double Decker Wooden Body, ND: Not determinable, NA: Not available.

Table 2 : Cost per passenger/mile and cost per ton of cargo per mile (sigmented elementwise and the total) in the inland water transport vessel of Bangladesh in the years 1974 and 1986

Heads of Expenses	1974				1986			
	Private Sector		Public Sector		Private Sector		Public Sector	
	Passenger	Cargo	Passenger	Cargo	Passenger	Cargo	Passenger	Cargo
1. Fuel & Lubricant	.0386	.1131	.0287	.0756	.1294	.5657	.2458	.4377
2. Repairs expense	.0124	.0311	.0226	.0324	.0631	.2393	.0959	.2194
3. Salary of employ	.0085	.0162	.0129	.0262	.0852	.2579	.1319	.2834
4. Allowances	-	-	.0014	.0012	.0176	.0525	.0211	.0049
5. Conservancy fee	.0017	.0020	.0019	.0030	.0182	.0280	.0203	.0101
6. Government taxes.	.0001	.0010	.0006	.0019	.0007	.0092	.0032	.0063
7. Other expenses	-	.0005	.0049	.0140	.0014	1.0020	.0149	.0357
Total	.0613	.1639	.0730	.1543	.3156	1.1546	.5331	1.0124

% change (increase) of 1986 with 1974

Table-2 (Continued)

Heads of Expenses	Private Sector		Public Sector	
	Passenger	Cargo	Passenger	Cargo
1. Fuel & Lubricants	335%	500%	564%	579%
2. Repairs expenses	509%	769%	424%	677%
3. Salary of employees	1002%	1592%	1022%	1082%
4. Allowance of employees	--	--	1507%	408%
5. Conservaney fee	1076%	1400%	1068%	337%
6. Government taxes	700%	920%	533%	332%
7 Other expenses	--	400%	304%	255%
TOTAL	515%	704%	730%	656%

Note. 1. Costs for passenger in private sector has been calculated in a normal season operation for double decker vessels, while for public sector for steamers under BIWTC from provisional accounts);

2. Costs for cargo has been calculated for dry inland (mechanised) cargo vessels;

3. Costs have been derived on the basis of averages of the costs derived for a total trip of respondents;

4. Depreciation cost is not calculated and provided for by the private sector vessel owners (majority). Government sector, however, provides for depreciation, as also a few private companies. For the sake of uniformity, depreciation cost is not included in the above table .

Depreciation: A Major Head Of Cost Ignored

Since the water transport vessel owners invest their capital in procuring the vessel at a time and need not worry for a very long time for any re-investment, they tend to forget the very nature of their investment which is in reality a deferred revenue expense. The private sector vessel owners fail to recognise the capital and revenue earnings merged in their periodic inflow of money. This obviously results in a peculiar position for the vessel owners when they find themselves in a very tight position to replace the old vessel with a new one. Public sector accounting, however, has to conform with the generally accepted principles of accounting and has to satisfy statutory requirements. Thus, depreciation is charged on a regular basis by the public sector inland water transport vessel owners. Some exceptions were found in the private sector charging depreciation on a regular basis, who were mostly limited companies.

Fixed And Variable Costs

Inland water transport operating costs can be divided in two parts according to their fixed and variable nature. The division is as follows: Fixed costs: a) Employee salaries; b) Depreciation, c) Cost of maintaining accounts; d) Salary and allowances; e) Postage; f) Telephone; g) Electricity; h) Office rent; i) Entertainment; j) Interest on loan; k) General and other expenses; and i) Insurance.

Variable Costs: a) Fuel and lubricants; b) Repairs including spare parts; c) Allowances to employees; d) Conservancy fee etc.; e) Government taxes; f) Advertisement/Canvas; g) Stationery and printing; and h) Association fee etc.

Some of the costs were identified to have both fixed and variable elements, These cost can be termed as semi-variable costs. Examples of such costs are; a) Repairs and maintenance (training cost is a fixed cost); b) Employee salary (for casual and part-time hired employee and workers), c) Legal expenses; d) Conveyance, e) Donation and subscriptions etc.

Comparison Of Cost, Profit And Revenue,

Inland water transport vessel owners have to abide by the fare and freight rate fixed by the Traffic Division of BTWTA. Passenger fare and cargo freight are the sources of income for inland vessel owners and they

do not have any other sources of income (excepting occasional reserve trips.)

There are three different seasons in which they operate their vessels. These are: a) Normal season (winter and spring), b) Bad season (summer and rainy season), and c) Festivals (consisting of few days before and after Eid and other major holidays). Income varies in these seasons for passenger vessels considerably while the cargo income remains almost same throughout the year. Inland water transport vessels also run on reserve trips and such trips bring in more revenue than normal. Passenger fare and cargo freight rates have been changed a number of times from the year 1974. Percentage charge (increase) of 1986 figure with 1974 in different areas of fare and freight were as follows:

A passenger fare (adult): (1) Private sector Motor launch- a) (i) Deck class (3rd class), 438%; (ii) Minimum chargeable fare, 350%; b) 1st class (with modern facilities, 438%; (ii) 1st class (without modern facilities), 438%; c) 2nd class 438%; (2) Public sector (steamers etc.) (a) Deck class (3rd class 346%; (b) 1st class, 477%; (c) 2nd class, 574%; (d) Inter class, 350%.

B. Freight rate (per ton): (a), Rice, Wheat, Salt, Sugar, Edible Oil, Cement and general cargo- (i) Maximum, 500%; (ii) Minimum chargeable rate, 500%; (b) Fertilizer -(i) Maximum, 520%, (ii) Minimum, 520%; (c) POL by tanker vessels - Not available, (d) Jute and Jute goods, (1) Jute - Maximum, 658%, (ii) Minimum, 658%; (2) Jute goods- (i) Maximum 682%; (ii) Minimum, 682%; (3) CBC - (i) Maximum 645%, (ii) Minimum chargeable freight 645%.

Vessel owners complain that the full revenue due to a vessel operation is hardly realised. Reasons assigned for non realisation of fares are as follows: (1) Poverty and financial difficulty of the passengers travelling abroad (inland water transport is a popular media of travel by the poor and lower middle people); (2) Persons wearing different in forms prefer to travel free and can not be forced to pay; (3) Hooligamism and habit of some travellers to avoid payment; (4) Various types of statutory concessions allowed; (5) Corruption of the personnel employed to collect freight and fares.

Inland water transport costs have been discussed earlier while profit and revenue are compared now in this section. The figures for revenue is

represented by taka payment by the users (detailed calculations for derivation of per unit figures have not been incorporated in this short paper). Reference of the equation metioned in introduction to this paper can now be made . The following table shows the comparison of cost, profit and revenue for the years 1974 and 1986.

Table - 3 : Table showing per passenger per mile and per ton cargo per mile cost (before charging depreciation), profit and income (revenue) compared for the years 1974 and 1986.

Year/Particulars:	Operating Cost + Profit = Taka Payment by Users (Income)				
	Taka		Taka		Taka
1974:					
1. Private Sector					
a) Passenger	.0613	+	.0123	=	.0736
b) Cargo	.01639	+	.049	=	.2131
2. Public Sector					
a) Passenger	.0730	+	.008	=	.0811
b) Private	.1543	+	.0566	=	.2109
1986:					
1. Private Sector					
a) Passenger	.3156	+	.0487	=	.3643
b) Cargo	1.1546	+	.2782	=	1.4328
2. Public Sector					
a) Passenger	.5331	+	(-.1207)	=	.4124
b) Cargo	1.0124	+	.4301	=	1.4425

Changes in the above equation over the years have reflected a decline of profitability in the three areas out of four mentioned above. Profitability in the private sector passenger transport in the year 1986 has been 13.4% as against 16.7% in the year 1974. Similar figure for public sector in the year 1986 is a loss of 29.2% as against a profit of 10% in the year 1974. Profitability in the private sector cargo transport in the year 1986 has been 19.4% as against 23% in the year 1974. Similar figure for public sector, however, shows a slight increase i.e., 29.8% in the year 1986 as against a figure of 26.8% in the year 1974. It is perhaps the cargo traffic that has kept the public sector with a continuous flow of net income and thus retaining some strength in it.

COST, PROFIT AND REVENUE EQUATION AFTER DEPRECIATION

It would be a mistake from accounting point of view to ignore depreciation. A standard figure of depreciation could be derived (detailed calculation not shown here) and accommodated in the equations shown in Table-3. The revised equation would be as follow:

Table-4 : Table showing per passenger per mile and per ton cargo per mile cost (after charging depreciation), profit and income compared for the years 1974 and 1986.

Year/Particulars:	(Operating Cost + Depreciation)	+ Profit	= Taka payment by the users (Income)
	Taka	Taka	Taka
<u>1974:</u>			
1. Private Sector-			
a) Passenger	(.0613+.00226) +	.01004	= .0736
b) Cargo	(.1639+.0057) +	.0435	= .2131
2. Public Sector-			
a) Passenger	(.0730+.00226) +	.00584	= .0811
b) Cargo	(.1543+.0057) +	.0509	= .2109
<u>1986:</u>			
1. Private Sector-			
a) Passenger	(.3156+.0026) +	.04644	= .3643
b) Cargo	(1.1546+.0057) +	.2725	= 1.4328
2. Public Sector-			
a) Passenger	(.5331+.00226) +	(-.12296)	= .4124
b) Cargo	(1.0124+.0057) +	.4244	= 1.4425

It can now be seen that the real profitability of 1986 in private sector passenger vessels has been 12.74% as against 113.64% in the year 1974. Private sector cargo operation profitability in the year 1986 has been 19.02% against 20.41% in the year 1974. Public sector passenger traffic profitability in the year 1986 was -29.8% (negative i.e., loss) as against -7.2% in the year 1974. Public sector cargo traffic profitability has been 29.4% in the year 1986 as against 24.13% in the year 1974.

It is to be considered, however, that the depreciation has been charged on historical cost basis whereas in real practice the capital cost

of vessels have increased about 3 times during this 12 years period. This warrants that depreciation figure be also adjusted accordingly considering the rate of inflation or price rise in the specific category (which should be at least 3 times than the earlier figure, but has not been calculated here due to the fact that such higher charge is not yet recognised in accounting practice in our country). The operators charging depreciation would also not be in a position to replace their vessels out of depreciation fund at the present rate of price rises. The operators not charging depreciation are of course in the worst position at the moment. This clearly portrays that the operators in the private sector are not in a position to renew their business out of resources generating from business itself. They may be in the business in future only if they are willing to invest additional capital for procuring vessels. It has already been seen that the profitability which is the motivation for introducing new capital into the business has fallen in the past years.

CAUSES OF OPERATING COST INCREASE

The vessel owners have mentioned about a number of causes for increase in the operating cost over the years. These are in brief:

- a) High maintenance cost of the vessels due to increase in prices of wood, labour charges, points etc.
- b) Increase in the prices of spare parts mainly due to increase in duty and sales tax.
- c) Increase in the route length due to siltation of rivers.
- d) Burdening the owners with different types of fees and charges.
- e) Burdening the passenger vessel owners with the salary of security personnel (Ansars).
- f) Misappropriation and theft of the employees in the vessel.
- g) Harassment of the owners, bribe and undue charges by different authorities including free travels.
- h) High rate of income tax, books of accounts maintained by the vessel owners by the Income Tax Authorities.
- i) Under utilisation of capacity due to unfair allocation of cargo between private and public sector.

As an answer to cope with the increasing trend of operating cost, the majority of vessel owners do not desire a major rise in passenger fare on cargo rate. They are of the opinion that such a measure would lead in a reduction of demand for inland water transport and a pressure on the middle and lower income group passengers who are the major users of

their vessels. They think that there are other better ways of improving their lot than taking a step like increase in fare and freight.

CONCLUSION

It has been observed that the fuel cost which constitutes about 45% of the total operating cost has shown a rise of about 786% over the period of study. Rise in the subheads of operating cost ranges between 126% to 2000%. None of the cost subheads showed a declining trend over the years. This is of course very much in line with the general inflationary situation in the country and throughout the world during the period of study. Owners of the vessels are directly affected by this cost rise while users and others suffer indirectly. To cope with the increase in operating cost, owners had to resort to two things i.e., pressing for higher freight/fare rate and curtailment of costs affecting the efficiency and comfort of the service (very often resorting to overloading their vessels). Freight/fare rate increase, however, is not supported by the majority of vessel owners due to other adverse side effects.

In the analysis of revenue, it has been found that the official fare and freight chart prescribed by the BIWTA showed an increase of about 423% (average) in case of passenger fare in private sector, about 436% (average) in the public sector passenger fare, about 600% (average) in case of cargo freight over the period of study. This fare and freight increase, however, could not keep pace with the operating cost increase, which is evident from a decline in profitability in the year 1986 over 1974 (except in public sector cargo transport). Besides, majority of the private sector operators make a gross mistake in ignoring the depreciation as a cost. Consideration of this cost should reduce the profitability further. Increased operating cost, high cost of replacement and lower profitability has resulted in lower incentive for new capital to be introduced in this sector. The Government has taken up the policy of not expanding public sector in inland water transport allowing a room for private sector investors. Under the given situation, inland water transportation would fail to encourage private sector investments. The cargo profitability has been attractive till now and it is possible that the operators will be introducing their capital in this area to get a reasonable return. Again, the limiting factor is the policy of Government to allocate Government cargo to public sector vessels.

The present position of inland water transport in the country has been described by the operators as a period of stagnation. Owners are not

being able to increase their capacity considerably while some of the operators leaving the business. In fact, there has been a decrease in demand for inland water transport in the area of passenger traffic. Problems encountered by the inland water transport are so many that it would require a great deal of effort and investment to pull up this sector so that it plays its due role in the economy of the country. The main problem at the moment is the very existence of this mode of transport i.e., deteriorating route condition. While keeping routes navigable requires less cost involvement than construction of road and railway network, planners in our country should re-think of their strategy which allocates far lower amount than needed and places this sector at the bottom of preference. The other major problem which requires urgent attention has been the subject matter of this paper i.e., increased operating cost. Detailed discussion regarding this has already been made in considerable length.

URUGUARY ROUND OF MULTILATERAL TRADE NEGOTIATIONS: DEVELOPING COUNTRY INTEREST AND PRIORITIES

AYUBUR RAHMAN BHUYAN*

I. INTRODUCTION

The Uruguay Round, the eighth round of multilateral trade negotiations since the GATT was established in 1947, is a significant event in the history of international economic relations.¹ Agreed at a meeting of Trade Ministers of 74 developed and developing countries at Punta del Este, Uruguay (15-20 September 1986), this latest round of trade talks began in Geneva in January 1987 and will last till 1990. Launched at a time when the world trading system is undergoing severe stresses and strains because of the growing tide of protectionism, the Uruguay Round is looked upon with increasing interest as providing a great opportunity for reshaping the world trading system in a way conducive to free and unfettered expansion of international trade for the mutual benefit of all nations. The Uruguay Round is also significant in another respect. For the first time, a large number of developing countries are participating in this round, and in that sense it is going to be more democratic than past multilateral rounds of negotiations.

While participation by developing countries in the Uruguay Round is viewed by optimists as an opportunity for reverting protectionist actions and practices of the industrialized countries that are directed largely against developing nations, it is also looked at with suspicion, in view of the inclusion, in the negotiations, of the so-called "new issues," namely, trade in services, intellectual property rights and investment. While negotiations would doubtless benefit the developing countries if they resulted in a stronger system of international trade providing for a safe and stable access to developed country markets and preventing the proliferation of trade restrictive and discriminatory practices, it is not clear

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1. Previous rounds of MTN held under the auspices of the GATT were: the first round (Geneva 1942); second round (Annecy 1949); third round (Torquay 1951); fourth round (Geneva 1956); fifth or the Dillon Round (Geneva 1960-61); sixth or the Kennedy Round (Geneva 1964-67); and the seventh round called the Tokyo Round (Geneva 1973-79).

the efforts at bringing the "new issues" under multilateral discipline and liberalization of the corresponding markets will benefit these countries.

In the Punta del Este preparatory talks for the Uruguay Round, much of the discussion centred on the services debate putting the industrialized countries led by the United States against the "Group of Ten" developing countries led by Brazil and India. The United States insisted on an expanded role of the GATT to handle services and wanted to conclude a services agreement through negotiations under the auspices of the GATT the so-called single track procedure. The G-10, on the other hand, wanted to de-link the GATT from a potential services agreement and, therefore, insisted that the services negotiations be conducted by a separate group outside the GATT, and parallel to the talks on goods—the dual track procedure proposed by Brazil back in June 1985. A compromise solution was, however, found whereby the dual track was preserved, separating the services negotiations from the GATT talks. It was agreed that both "goods" and "services" negotiation groups would work under the control of the same GATT Trade Negotiating Committee to which they would make their recommendations. It will then be determined at another ministerial meeting whether the results should be incorporated into the GATT.

The framework of negotiations thus agreed at the Punta del Este Ministerial Meeting consists of two parts. In the first part are the 12 "traditional issues"² plus two of the "new issues" (trade-related investment measures and trade-related aspects of intellectual property rights, including trade in counterfeit goods). The second part relates exclusively to questions on trade in services. These 15 issues are the object of negotiations in 15 separate negotiating groups. The purpose of this paper is to examine the scope of negotiations on these issues from the point of view of the developing countries' interests and priorities.

II. TRADITIONAL ISSUES

1. *TARIFFS*

Past rounds of MTNs brought about a substantial reduction of average tariffs, but yet high tariffs still remain on such products as textiles, clothing and leather products in which developing countries have comparative

2. The traditional issues are (1) tariffs, (2) non-tariff measures, (3) natural resource-based products, (4) textiles and clothing, (5) agriculture, (6) tropical products, (7) GATT Articles, (8) MTN Agreements and Arrangements, (9) Safeguards, (10) subsidies and countervailing measures, (11) dispute settlement and (12) functioning of the GATT System.

advantage. UNCTAD studies also indicate that imports originating in developing countries are subjected to higher tariff rates than those originating in industrialized countries. Tariff reduction in these areas will lead to substantial trade expansion of developing countries.

Moreover, many developed countries have high tariffs on finished goods compared with intermediate inputs thus creating and aggravating the problem of "tariff escalation." To alleviate this problem, tariff reduction in semi-processed goods should also be high on the agenda of tariff negotiations, as it will go a long way in promoting industrialization in the resource-rich developing countries. The negotiating group on natural resources that will deal with issues concerning trade in natural resource-based products such as minerals, non-ferrous metals, forestry and fishery products does, therefore, have a special responsibility in protecting the developing country interests in this area.

Developing countries should also insist upon the preservation of the GSP benefits for the developing countries. Even though the need for preferential treatment of the developing countries under GSP was expressly recognised in a new agreement in the Tokyo Round (often referred to as the "enabling clause"), its effectiveness is greatly impaired by 'exclusions' and imposition of various ceiling-type limitations by the developed countries. Developing countries should, therefore, aim not merely at reducing the existing tariff rates and harmonizing the different tariffs of industrialized countries, but also at upgrading and preserving the Generalized System of Preferences.

2. NON-TARIFF MEASURES

Non-tariff barriers today are the most serious obstacles to the access to developed country markets. These obstacles apply mainly to sectors of special interest to developing countries. An estimate by UNCTAD shows that in 1986, 48.9 per cent of food imports, 64.2 per cent of iron and steel imports and 67 per cent of clothing imports of developed countries were subject to non-tariff barriers. In the recent years, the incidence of non-tariff restrictions, in particular the "grey-area" measures has increased considerably, and in a number of sectors as in steel and textiles, trade is "managed" through a system of "voluntary" restrictions on exports. The issue should, therefore, receive utmost emphasis in the Uruguay Round negotiations for ensuring elimination of all non-tariff barriers that are incompatible with GATT rules and discipline.

3. TROPICAL PRODUCTS

Tropical products³ appear prominently in the export of developing countries but they are subject to both tariffs and a wide variety of non-tariff restrictions. Back in 1963, the GATT contracting parties decided to take action to eliminate all tariff and non-tariff barriers affecting trade in these products. The Tokyo Declaration of 1973, too, recognized tropical products as a "special and priority sector," and separate negotiations on these products were carried out in the Tokyo Round. No significant improvement was, however, achieved in these negotiations.

The need for liberalizing trade in tropical products, including manufactured and semi-manufactured goods was also reiterated in the 1982 GATT Ministerial Meeting. The Punta del Este Declaration also acknowledged the priority nature of negotiations on tropical products and agreed on immediate implementation of the potential agreements in this area, regardless of the progress made in other areas of negotiations. The objective of the developing countries in the negotiations should be to achieve free access to developed country markets for all tropical product exports including manufactures and semi-manufactures. Towards this end, they may even consider giving reciprocal treatment to products originating in industrialized countries (for example, wood), should such demands arise in the negotiations.

4. TEXTILES AND CLOTHING

The textiles and clothing sector is of utmost importance to developing countries as it occupies a high percentage of exports, manufacturing value added and employment in these countries. These products, however, face the highest levels of protection in the developed countries today. Trade in textiles is considered as a special area subject to a "selective" safeguard system, and for two decades now textiles trade has been "managed" through the so-called Multi-Fibre Agreement (MFA). This instrument is contrary to GATT rules and principles as it is based on bilateral negotiations of quantitative restrictions on a discriminatory basis. The MFA was specifically aimed against developing countries on the rationale that their "low-cost" exports produced serious "market disruption" in the industrialized countries. Although started as a temporary

3 . Tropical beverages, spices, flowers, plants, some categories of oil-seeds and vegetable oils, tobacco, rice and tropical roots, tropical fruits and nuts, tropical wood and rubber, jute and hard fibres, etc.

mechanism in 1961, the MFA has now become a permanent feature to govern and restrict textile exports from developing to developed countries.

It is ironical that the countries that are putting intense pressures on the developing countries to rationalize their economies are the very ones that have institutionalized protectionist measures in the garb of the MFA, without any regard to the GATT provisions and without resort to any of the exception clauses provided in the GATT rules. The deviation from the GATT principle of multilateralism means not only an impairment of competition and free play of market forces, but subjects each developing country involved to the negotiating powers of an industrialized nation [9].

Textiles and clothing is, however, the single most important area of trade for developing countries, because in it they are believed to possess the strongest comparative advantage, despite the fact that many industrialized countries protected by the MFA have recovered their competitiveness. A successful negotiation in this area to bring the textiles trade under GATT rules and discipline would thus lead to a significant redistribution of production away from the developed to the developing countries. The developing country negotiators should, therefore, strive hard to reach an agreement so that the restrictions under the MFA are gradually phased out, and further that there is no more renegotiation of the MFA after the present MFA-IV expires in July 1991.

5. AGRICULTURE

Agriculture is the most heavily protected sector in the industrialized countries, and it is this fact which brings agricultural trade issues at the centre of developing countries' relationship with the industrialized ones. The developing countries want market access to the industrialized countries, in particular, the European Economic Community, Japan and the United States. These three economic blocs are the dominant actors in world agricultural trade, and their domestic farm policies resulting in high levels of protection have been instrumental in contributing to the current disarray in world agricultural markets. These countries subsidize their agriculture at very high levels, their budget expenditures on these subsidies estimated for the most recent fiscal years having been of the order of \$23 billion, \$10 billion and \$30 billion respectively.

The domestic farm policies of these rich industrialized countries that provide price support to producers well above international levels have had disastrous consequences for developing countries. The high prices in these three economic blocs have contributed importantly to retard the trade of agricultural exporting countries, hold down the level of their

internal economic activity and employment below achievable levels, depress world prices of agricultural products, contribute to agricultural price instability, lead to overproduction in the protecting countries, and, through dumping of their excess production, lead to the displacement of developing country exports to third country markets.⁴

Negotiations on agricultural trade are, therefore, going to be a critical issue in the Uruguay Round. No significant progress was made in this area in the past rounds. The Tokyo Round negotiations in this field were limited to some commodity conventions, e.g., in respect of grains, meat and dairy products, but these efforts met with failure. Among the "codes of conduct" adopted by the Tokyo Round, the only code relating to agriculture is the so-called "subsidies code", but this code does little to address the issue of the trade effects of domestic subsidies such as price and income supports.

What the developing countries should do in such circumstances is to press for a global solution that allows for the stabilization of the world trade in agricultural products and for greater access to markets for their exports. Emphasis should be given in the negotiations on removal of tariff and non-tariff barriers and other domestic policies like export subsidies, variable levies etc. that may have adverse trade effects. In this regard, the proposal by the Cairns Group,⁵ which includes some developed countries, merits consideration. The proposal wants agricultural negotiations to result in a long-term agreement, aiming at the complete liberalization of agricultural trade and the elimination of all subsidies on this sector, coupled with (i) a programme of reforms (to be implemented within a period of no longer than 10 years) to gradually eliminate all supports to the agricultural sector, and (ii) a series of immediate measures addressed to keep the present levels of access to markets and of export subsidies.

4 .To cite an example, the high support levels set by the European Community has turned it from a net importer of wheat and coarse grains from 1960/61 through 1979/80 to a net exporter in the years since 1979/80. In 1976/77, the European Community had net imports of 25 million tons of grain. In 1984-85, it had net exports of 19 million tons—a turn-around of 44 million tons in a nine-year period [10;34].

5 .The Cairns Group was set up at the preliminary stage of the Uruguay Round and was very active in matters of agricultural issues. The members of the Group are: Argentina, Brazil, Colombia, Chile, Uruguay, Hungary, Indonesia, Malaysia, the Phillipines, Thailand, together with Australia, Canada and New Zealand from among the developed countries.

The proposal of the Cairns Group is in line with the views of the current U.S. Administration which want "to phase out over a 10-year period all agricultural import restrictions and all subsidies that directly or indirectly affect agricultural trade." This raises the hope of arriving at a favourable outcome in the negotiations. The Reagan Administration's proposal for eliminating agricultural subsidies by the year 2000 was presented before the Negotiating Committee for agriculture in its meeting on 6 July 1987 [6]. Although the Uruguay Round will continue till 1990, the U.S. proposal has called for an early result, and it hopes to reach agreement on agricultural issues by the end of 1988. The European Community and Japan are, however, likely to oppose the U.S. move of bringing about sweeping agricultural reforms, and hence it is difficult to be optimistic about the outcome of the current round of negotiations. These countries have, however, gradually started to realize the growing costs of their support programmes and subsidies to their agriculture, but yet it is more likely that the Uruguay Round will "result in modest rather than dramatic changes in the rules and procedures for conducting international agricultural trade" [6].

6. MTN AGREEMENTS

One result of the Tokyo Round was the adoption of different codes that construe or rule the application of certain provisions of the General Agreement.⁶ In addition, some product specific agreements such as on Beef, Dairy Products and Civil Aviation were also negotiated. Difficulties are, however, being encountered regarding the enforcement of these codes and agreements.

For example, although the Subsidies Code was adopted to deal with abuses relating to anti-dumping and countervailing duty actions, developed countries frequently resort to "fair" trade laws to harass competitive suppliers, which more often happen to come from developing countries. These countries are often denied their benefits unless they accept additional conditions unilaterally imposed by some industrialized countries. The benefits of these agreements and codes do not also reach all contracting parties in open disregard of the MFN treatment stipulated in Section I of the GATT and of the 1979 Decision on Action by contracting

6 . The codes adopted are those on customs valuation, government procurement, import licensing, subsidies and countervailing duties, and technical barriers to trade (also known as the Standards Code).

parties on this issue. Also, national authorities are found to make different determinations for similar anti-dumping or countervailing duty cases. There is also little consistency in determinations made by different countries involving similar cases [8]. There is, therefore, a clear case for improving the Subsidies Code for bringing national practices under stricter GATT discipline.

Moreover, both the regulation and the interpretation of the codes are made by the signatories' committees, in which only the subscribers to the codes can participate. Not all developing countries being signatories to the various codes, they are excluded from these decisions. The Uruguay Round Negotiations should, therefore, seek to ensure the benefits to the developing countries as stipulated in the Codes and avoid new negotiations in order to ensure such differentiated treatment.

7. SAFEGUARDS

The issue of safeguards is an important issue for developing countries. The major task here is to clarify the rules with respect to various safeguard type measures under GATT Article XIX. A serious disability suffered by the GATT System is that the criteria under which Article XIX may be invoked have never been clarified, as a result of which discriminatory protective measures, the so-called grey-area measures, have proliferated over the years most of which are directed against developing countries.

Agreement on safeguards could not be arrived at in the Tokyo Round mainly because of the position adopted by certain developed countries (EEC) which insisted on a 'selective' application of safeguards, that is to say, in a discriminatory way. The developing countries opposed this move on the ground that the selective application would be inconsistent with the GATT principle of non-discrimination. The principle of selectivity indeed constitutes the most significant threat to the multilateral trading system, and the developing countries should try to obtain a legally binding agreement on safeguards based on the unconditional MFN clause, clearly eliminating all possibilities of discrimination in their implementation.

8. DISPUTE SETTLEMENT PROCEDURE

A serious disability of the GATT System is its inefficient dispute settlement procedures and enforcement mechanisms. This deficiency can only be removed through (a) greater political commitment by major trading nations to respect their multilateral obligations; (b) greater binding of the said commitments; (c) coincidence between national laws and

multilateral trade rules; and (d) the elimination of inconsistent and even conflicting points between national laws and multilateral commitments.

A pre-requisite of an efficient dispute settlement mechanism is, however, to strengthen the GATT as an institution. The GATT disputes panel which handles the enforcement of the decision reached does not have the power to put recommendations into effect. Unlike the IMF or the World Bank the GATT is not a full fledged institution but merely an agreement of contracting parties, and hence it has no real power to impose decisions on sovereign nations. These disabilities could be removed by converting the GATT from an agreement to a formal treaty organization. In that case it would move away from the time consuming consensual decision-making process and be able to make effective policy decisions. Strengthening in this manner the authority of the GATT to evaluate, expose and sanction violators of agreed upon accords would greatly benefit the developing countries. In the absence of such steps, the GATT would continue to weaken as an organization, the multilateral trading system would give way to bilateralism, and the interests of the poorer developing countries would be subordinated to those of the richer industrial nations.[8].

For purpose of strengthening the GATT and restoring multilateral trading discipline it is also essential that the developing countries participate more activity in the GATT. The world trading system cannot be viable if the 125 or so developing countries merely want to benefit as free riders. It will be in their own interest to participate effectively in the GATT system, for only by doing that they may seek true and effective enforcement of GATT rules and thereby eliminate all trading arrangements outside or against the GATT system. Their absence will merely expose them to unilateral interpretation of existing rules by the industrialized countries, thereby adversely affecting their interest on the one hand and causing distortions in the GATT system on the other. It must be borne in mind that the poor and the powerless need the protection of law more than the rich. In the sphere of international trade, it is only under a strong GATT that the developing countries can hope to enforce discipline on powerful developed countries.

III. NEW ISSUES

For the first time in the history of the GATT, three new issues—services, trade-related investment, and intellectually property rights—have been included in the agenda for negotiation in the Uruguay Round, extending the scope of GATT negotiations into previously uncharted territory. These are highly complicated issues as their international regulation will have

direct implications for international policies and laws. Negotiations on these issues are therefore highly significant and also challenging for the countries involved, especially the developing countries. Bargaining in these areas will require extreme care, skill and economic

1. *TRADE IN SERVICES*

Services trade is the most contentious of all issues and much of the preliminary talks at Punta del Este focused on this controversy. The rich industrialized countries insisted that the services sector is of crucial importance to their economies,⁷ and hence trade in services has got to be brought under GATT rules and disciplines. These countries maintain that trade in goods today is increasingly mixed up with trade in services, and that it is impossible to separate GATT disciplines on trade in goods from those on services. According to these countries, therefore, an essential task of the Uruguay Round will be to establish a framework for conducting and liberalizing trade in services.

The developing countries, on the other hand, have looked at the issue in a different light. Firstly, they contend that services and the other new issues fall outside the jurisdictional competence of the GATT, and their inclusion may only lead to a neglect of the major issues relating to merchandise trade which are the traditional responsibilities of the GATT. Secondly, the services sector covers a heterogeneous set of activities ranging from consumer services such as haircuts to sophisticated producer services such as data processing.⁸ The trade issue centres on such activities as can profitably be offered across borders, either through trade or through direct investment. Among these are banking, advertising, insurance, transportation, communication, data processing, construction, engineering, entertainment, management, and tourism. A uniform approach to all these sectors is, however, neither feasible nor desirable. Thirdly, they believe that negotiating access to such services as communication, transportation, banking and insurance is tantamount to bargaining over their ability to manage their own development strategy

7. All mature economies are increasingly dominated by the services sector. For example, services accounts for two-third of the United States' GNP, 75 per cent of non-agricultural employment, and 25 per cent of all exports.

8. The problem of defining services still remains unsolved. As the Uruguay Round entered into its second year, negotiations on services have centred more on fundamental problems of definition on actual bargaining.

and safeguard their national security. Fourthly, many developing countries fear that liberalization of services would damage the prospects of their own growing service industries, and hence they are unwilling to open their markets before their infant industries become competitive. Fifthly, developing countries are concerned that discussion on services so far has focused primarily on such areas as banking, insurance, transport, communication and computer software in which the industrialized countries enjoy comparative advantage, while ignoring areas such as construction and personal or professional services in which developing countries seem to be most competitive.

All developing countries share these reservations expressed most vocally by Brazil and India, although they ultimately agreed to participate in services negotiations. The negotiators will thus have a challenging task as they will have to find an approach that satisfies the United States' desire for liberalization and at the same time convince the developing countries that their trade interests will be safeguarded. The negotiators from both groups of countries will thus have to reach a compromise a compromise on a number of issues if a meaningful agreement on services is to be produced in the Uruguay Round.

The negotiation proposals of developed countries seek to obtain liberalization of trade in services by modifying the existing GATT principles so as to make them applicable not only to goods but to services as well. These are the most favoured nation (MFN) principle, national treatment, the right to establish, and transparency. Application of the MFN principle to services may have to be on a conditional basis, as developing countries may demand special treatment.⁹ The 1974 UNCTAD Liner Code is an example of such conditionality.¹⁰ The industrialized countries are, however, increasingly disenchanted with preferential treatment and want to "graduate" out the more advanced developing countries from the GSP schemes. Yet it is possible that the developing country interests could be addressed by allowing them to liberalize more slowly, or to grandfather some existing service restrictions.

9. Although the MFN Principle makes non-discriminatory treatment binding on all contracting parties, deviation from this principle is allowed in the case of preferential treatment for developing countries and customs unions and free trade zones.

10. The Liner Code Guarantee developing countries a portion of all shipping that departs from or arrives at their ports.

National treatment is another GATT principle according to which imported products are given the same treatment as domestic ones produced by domestic companies with respect to regulation. If this principle is applied to services, foreign service companies shall receive the same treatment as the national companies and shall have the right to operate in the recipient countries under similar conditions as those of the national companies.

The right to establish is an investment concept, outside the purview of the GATT, and allows a foreign service supplier to establish a stable, material installation in the recipient territory. The right to establish follows the right of access to markets, and is deemed essential because most services are inextricably bound up with the question of provider mobility across national borders. Since many services require physical proximity between the supplier and the user, the foreign supplier needs some kind of commercial presence in the purchasing country, and the possibility of direct investments, when these are necessary, to have effective access to markets.

Transparency is another principle applicable to services. Transparency guarantees an easy understanding of the laws, regulations and actions related to trade. This implies that trade relations are open and unambiguous, with all countries committed to inform foreign suppliers of any actual or eventual changes in their rules and regulations, along with domestic suppliers.

What the developing countries fear is that these liberalization moves would place the national and foreign companies on an equal footing and force the national companies into unfair competition with international service companies. However, irrespective of whatever guidelines are adopted in the negotiations, the developing countries should squarely face the task and make the best out of the bargain. There are several reasons for this. First of all, services not only dominate the economies of the industrially developed countries;¹¹ they are also important for the growth and development of their own developing economies. A strong and competitive service sector is often a precondition of economic development. Access to efficient business services such as telecommunication, data processing and transportation that are essential for technology transfer are also essential to the growth of manufacturing industries in the developing countries.⁹

11. In some of the middle and upper middle income developing countries, services account for about 50 per cent of their GDP.

Secondly, it is important to remember that a large number of traded services are intermediates which are inputs into goods producing industries. Protecting indigenous service sectors will increase the domestic price of these services and deprive the goods-producing industries of services that foreign suppliers could provide at lower cost. Moreover, blocking foreign investment in services such as telematics and information sectors would prevent opportunities for technology transfer and sacrifice efficiency in production.

Thirdly, even though the developed countries have comparative export advantage in many services, particularly in technology and capital intensive ones, many developing countries seem to have acquired comparative advantage in a number of services such as construction, medical services, commercial aviation, tourism and travel. Most NICs have also the skills to develop export advantages in computer software and such complex fields as international design contracts and engineering blueprints. Legal and professional services also, with right of establishment, provide mutual rather than one-sided export advantage for developed and developing countries. Developing countries should not, therefore, be misled into thinking otherwise simply because the initiative to include such trade in services comes wholly from multilateral firms in the developed countries[4]. The developing countries, therefore, have a significant stake in actively associating themselves in the negotiations and make sure that the services markets are open to them in the future.

Fourthly, it is true that in fields such as banking, insurance and telecommunication the developed countries have comparative advantage, but in liberalizing trade in these sectors, these industries can be treated in the same way as infant industries. These countries may also ask for explicit safeguards as in the case of goods provided under GATT Article XIX. But they will have to argue for this, and they cannot do it if they do not actively participate in the negotiations. Dissociation of developing countries from the negotiations on services may result in a unilateral formulation of rules by the developed countries, disregarding their problems and cause yet more damage to these countries.

2. TRADE-RELATED INVESTMENTS

As in services, the question of including trade related investment in the negotiations originated in the United States proposal which suggested that the "barriers" and "discriminatory" measures applied by countries to foreign investment be reviewed. The barriers referred to are export related stipulations and local requirement rules applied to foreign investors which

have direct or indirect effect on trade flows. For example, export stipulation may promote dumping, and local requirement rules by which foreign investors must buy a certain percentage of the production value or volume of the investor from local suppliers can be equivalent to an import quota.

The Uruguay Round is mandated to review the GATT Articles on the effects of the aforementioned trade restrictions and distortions arising from investment matters. While a GATT like regime similar to that of trade in services could be sought to encompass the whole question of foreign investments it will be in the interest of developing countries if group negotiations give due recognition to the developing countries' foreign investment policies that are directed at hastening the process of their economic development.

3. INTELLECTUAL PROPERTY RELATED MATTERS

The question of intellectual property rights is yet another subject that has been included in the agenda for negotiations chiefly because of the U.S. initiative. The U.S. insists that the current international law on intellectual property, including the Paris Convention on patents and trademarks and the Berne Convention on copyright, does not grant sufficient protection to intellectual property. The western developed countries complain of increasing international 'piracy' of their intellectual property-patented inventions, copyrighted works and trademarks by the advanced developing countries which robs the innovators of the economic return on the products they create.

Although, however, the U.S. and other developed countries want to bring this issue under GATT discipline, the protection of intellectual capital is also potentially of great importance to developing countries. These countries cannot expect to attract investments in R & D or transfer of appropriate technology, if they do not protect such rights effectively. The developing countries maintain that there are international conventions and also international organizations like the WIPO for dealing with issues relating to intellectual property rights, and hence that the GATT has nothing to do in this area. But evidently, enforcement by these conventions and organizations have been less than adequate, and the association of the GATT with these organizations may be more effective in providing greater protection of intellectual property.

IV. RESPONSIBILITY OF DEVELOPING COUNTRIES

Trade negotiations in the Uruguay Round are going to be of great significance to the world economy, in particular to the interest of developing countries. Developing countries have a great responsibility in

this regard. These countries played only minor roles in the previous rounds of multilateral trade negotiations, and now that they have become interested in actively participating in an international system, their responsibilities have also increased correspondingly. Negotiations between parties are conducted on a give and take basis such that the mutual interest of both parties is preserved. Each party offers some incentives in return for which it can demand something from the other. The Uruguay Round should be no exception.

It is important to remember that the major actors in the Uruguay Round are the three major trading powers—the European Community, the United States and Japan. If anything significant is to emerge from the Uruguay Round negotiations, these three powers must reach agreement among themselves. If the developing countries remain hesitant to actively participate in the negotiations, the danger is that the three powers may strike a deal among themselves, and this might have disastrous effects on the long term interest of the developing countries [12]. The negotiation stance of these powers, in particular the United States, makes it clear that they want same incentives to come from the developing countries. The question is: what incentives the developing countries should offer and what they should ask for in return.

In the past the developing countries were accustomed to getting one-way preference as "free riders" and allowed special and differential treatment under Part IV and other provisions of the GATT. Special and differential treatment basically implies non-reciprocity and promotional development through tariff preferences and support of infant industries. It is in these areas that there is a scope for rethinking on the part of the developing countries.

Because of non-reciprocity the economic importance of the developing countries diminished and they were not able to negotiate effectively in the earlier trade negotiations. This is indeed a cost which should be reckoned with. Sacrificing non-reciprocity can greatly benefit the developing countries by presenting it as a bargaining chip to the developed countries. For example, developing countries want easy market access for their agricultural products to the developed countries where agriculture is heavily protected. Liberalization of industry may in such a situation persuade the developed countries to open up their markets and thus help agricultural growth in the developing countries. Reducing industrial protection is also demanded by sound export promotional policies. A policy that protects industry raises the cost of tradable inputs, discriminates against agriculture, and the implicit overvalued exchange

rates penalize producers in both import-competing and export sectors. Reducing protection to industry would not only cut the cost of discrimination against agriculture and other exportables; it could be used to provide additional leverage for developing countries in agricultural negotiations in the Uruguay Round.

Regarding preferential treatment, developing countries must ask themselves if the concept is of much relevance today. With progressive cuts in tariff rates, coupled with the restrictive commodity coverage and the ceiling-type limitations imposed by the preference-granting countries, the benefits under the Generalised System of Preferences (GSP) have now become insignificant.¹² The costs associated with preferential tariffs are also significant. The developed countries use GSP as an excuse for the discriminatory treatment they have meted out to the developing countries in the form of voluntary export restraints and orderly market arrangements. All this calls for a voluntary surrender of non-reciprocity and preferential tariff rights by the upper-income developing countries, in particular, the newly industrializing ones.

It is only with respect to the smallest and the poorest of the developing countries (categorised as "least developed") that preferential tariff treatment, and the right to subsidies exports and impose quantitative restrictions for balance of payment reasons seem appropriate. This differentiation of the rights and obligations of the least developed countries from those of the middle-and upper-middle-income NICs, which implies graduation of the latter groups of countries from non-reciprocity and trade preferences, will enhance their bargaining power in the negotiations and may induce the developed countries to offer a quid pro quo in the form of opening their markets for developing country products.

V. CONCLUSION

The Uruguay Round negotiations are going to be of great significance to the developing countries. It would be important for them to insist on a restoration of multilateralism and oppose all attempts at legitimizing sectoral agreements or bilateral arrangements between or among countries (MFA, VER, OMA etc.). Priority attention should be given to devise a system capable of responding in an equitable manner to the shifts of comparative advantage in world trade.

12 . Trade economists believe that greater benefits to developing countries have come from MFN tariff cuts than from tariff reductions under GSP.

In the negotiations, the principal areas of interest for developing countries will be the traditional issues, but they must also proceed to accept the challenges posed by the inclusion of "new issues". On trade issues, the major emphasis of developing countries will be to obtain the commitment on standstill and rollback. Among various sectors, priority attention should be given to trade in agriculture, particularly tropical products and textiles.

Responsibilities of developing countries in other areas will be to reach a comprehensive understanding on safeguards so as to eliminate the possibility of "grey area" measures in the future; to strengthen the dispute settlement mechanism in such a way as to compensate for the inherent weakness of developing countries and to eliminate the problem of tariff escalation in the developed countries. With a view to enhancing their bargaining power, they should even be ready to make concessions on non-reciprocity and the provision of special and differential treatment.

The inclusion of "new" issues in the negotiations has increased the probability of a successful outcome of the Uruguay Round. Without these, the developed countries would have little interest in the negotiation on trade matters. Although the new issues appear at first glance costly to the developing countries, in the ultimate analysis these would bring benefit to both groups of countries. Only by actively participating in the negotiations, however, the developing countries can hope to turn the outcome in their favour.

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FACTOR INTENSITY OF THE MANUFACTURING TRADE OF BANGLADESH

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The factor content of manufacturing trade of an underdeveloped country like Bangladesh is a subject of great debate in the literature of both international and development economics. The original interest in this topic was aroused by the celebrated work of Leontief on the American economy [1]. He demonstrated that contrary to popular expectation American exports were labour intensive and import replacements were capital intensive. Leontief's work led to many statistical verifications of his findings both in the context of developed and developing countries. By now a large body of empirical literature is available on factor intensity of international trade. Yet there is very little systematic study of factor intensity of the manufacturing trade of Bangladesh.

An analysis of factor intensity of the manufacturing trade is important for a number of reasons. Being frustrated with the poor export performance of primary commodities, Bangladesh like many other developing countries adopted import-substituting industrialisation policies since the fifties during the time of Pakistan. Even though some liberalisation measures were undertaken in 1972, the import control policies in various forms are still pursued vigorously [3]. There are a large number of studies in the context of other developing countries which show that an impressive growth in the manufacturing output took place under the import substitution regime. However, the growth of employment in these countries was lagging behind the growth of output. In other words, the industrial growth was a capital-intensive type [4]. Different aspects of the trade regime were investigated in two major studies by OECD and NEER, but until recently was no systematic study of the trade policies and their impact on employment patterns in underdeveloped countries. Krueger, et al, recently investigated the impact of trade policies on employment patterns of some developing countries [8].

In the context of Bangladesh there is no in-depth study to show how the factor intensity of manufacturing trade moved over time, or how trade and

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other economic policies affected the different categories of manufacturing trade in the past. These questions are discussed in this paper.

The paper is divided into five sections. Section 1 discusses some methodological issues, Section 2 deals with sources of data and their limitations. In Section 3 an analysis of statistical findings is presented. In Section 4 an international comparison is made with other studies. Finally, an interpretation of the findings is given with some conclusions. There are six appendices to this paper in the first appendix a letter of correspondence with Professor A.O. Krueger on her methodology is presented. In the next three appendices some details of sources of data and adjustments made in data are discussed. In two other appendices the basic input-output data presented.

SECTION 1: Methodological Issues.

The choice of any particular method to measure factor intensity depends ultimately on the purpose of analysis. Since the main objective is to highlight the employment implications of alternative trade policies, some method of the measurement of labour intensity in manufacturing industries can be used.

However, labour is so closely related with capital that in the analysis this is also taken into consideration. If information on total labour employed and value of output in a sector is available, the amount of labour required per unit of output can be easily calculated. In terms of notation this can be done with the help of the following expression.

$$L_j^d - L_j / O_j \quad (1)$$

Where L_j^d - direct labour required per unit of output in the j th sector, $j=1,2,\dots,n$

L_j - total labour required in the j th sector, $j=1, 2,\dots,n$

O_j - total value of output in the j th sector, $j=1, 2,\dots,n$

The direct labour-intensity according to formula (1) is calculated from the published data of the Census of Manufacturing Industries of Bangladesh. However, in calculating labour intensity of a particular sector by using this simple formula, linkage of this sector with other sectors of the economy should also be taken into account. This inevitably requires the use of an input-output table.

It is well known that the Leontief inverse i.e. $(1-A)^{-1}$ provides a technique to handle inter sectoral linkages within an economy. The

columns of the Leontief inverse matrix measure the backward linkages of the different sectors of the economy. Multiplying L^d_j by $(1-A)^{-1}$ the input requirements of the various sectors of the economy can be translated into their total labour requirements, i.e.

$$l^t_j = L^d_j (1-A)^{-1}$$

Where l^t_j - total (i.e. direct and indirect) labour requirements per unit of final demand of j th sector, $j=1, 2, \dots, n$

l^d_j - direct labour required per unit of output of j th sector, $j=1, 2, \dots, n$

I - an identity matrix

A - input-output coefficients matrix,

Once l^t_j is calculated the total labour requirements of a composite unit sector of 'exportables', 'all exports', 'competitive imports' and 'all imports' can also be estimated by multiplying l^t_j by the appropriate sector.

By adopting a similar procedure the direct capital requirements can be calculated with the following expression:

$$C^d_j = C_j / o_j \quad (3)$$

where

C^d_j - direct capital required per unit of output in the j th sector, $j=1, 2, \dots, n$

C_j - total amount of capital employed in the j th sector,

$j=1, 2, \dots, n$

O_j - value of output in the j th sector, $j=2, \dots, n$.

It is now possible to estimate total capital requirements per unit of final demand by using Leontief inverse matrix. The formula for doing so is given by the expression below:

$$C^t_j = C^d_j (1-A)^{-1} \quad (4)$$

where

C^t_j - total (i.e. direct and indirect) capital requirements per unit of final demand of j th sector, $j=1, 2, \dots, n$

In estimating the total requirements of labour and capital for manufacturing trade, the logical question would be: To what extent should the linkage of a particular tradable sector j with the other sectors of the

economy be considered? In an input output table there are two categories of sectors, i.e. tradable and non tradable. The tradable sectors can be divided into two groups, i.e. agricultural and manufacturing. The main concern is the estimation of factor intensity of the manufacturing tradable sectors. Obviously the manufacturing tradable sectors have linkages not only with the manufacturing tradables themselves but also with the agricultural tradables and the non-tradable sectors. If interested in the potential linkage of a particular manufacturing tradable sector, its linkages economy-wide, i.e. all the linkages with the agricultural, manufacturing and non-tradable sectors should be combined. However, many scholars like Tinbergen [16] and Krueger [6] argue that in the calculation of total factor requirements, only linkage with the non-tradable sectors should be taken into consideration. The tradable intermediate input requirements of a particular sector can be satisfied from either domestic production or external source. Thus there is always a possibility that the linkage of a particular sector with the tradable sectors may leak out of the domestic economy. The potential linkage with the tradable sectors may or may not be used.

On the other hand, the non-tradable input requirements, i.e. domestic construction activities, electricity, gas etc., must be satisfied by the domestic source. Since these goods do not enter into international trade, the argument is that the linkage with the non-tradable goods sectors will be inevitably used.

It is reasonable to adopt all these approaches in actual numerical calculations. Thus following the usual Leontief tradition three types of inter sectoral linkages are taken into consideration.

(i) First, linkages with all the sectors of the economy are taken into account.

(ii) Second, linkages excluding non-manufacturing tradable, i.e. agricultural sectors are considered.

(iii) Third, linkages only within the tradable manufacturing sectors of the economy are estimated. If the following symbols are used:

A —original input-output coefficients matrix for all the sectors of the economy.

$A(T+H)$ —input-output coefficients matrix for tradable manufacturing and non-tradable sectors.

A_T —input-output coefficients matrix for tradable manufacturing sectors only.

Then by adopting the Leontief procedure three matrices can be used to estimate the total labour and capital requirements for exportables, all exports, import competing products and all imports.

Finally, total factor requirements of the manufacturing trade are also estimated according to Krueger's methodology. The first step in the application of Krueger's method is the calculation of per unit indirect labour and capital requirements and indirect value added created in the non-tradable sectors corresponding to a *j*th tradable sector.

Multiplying per unit indirect labour, capital and value added by the total value of output of the *j*th tradable sector, total indirect labour, capital and value-added respectively, can be estimated for this sector. In explaining her methodology Mrs. Krueger does not mention about the multiplication of per unit indirect value-added by the value of output of the *j*th tradable sector.

The total factor requirements per unit of total (i.e. direct and indirect) value added is multiplied by the unit composite sectors of exportables, all exports, import-competing products and all imports in order to calculate total factor requirements for each one of these tradable categories.

SECTION 2: Sources of Data and Their limitations

2. 1: Sources of data on input-output coefficients

Among other things, input-output table is needed for an application of the above mentioned methods of analysing total factor requirements of the manufacturing trade of Bangladesh. There are two input-output tables, i.e. one for 1962-63 and another for 1976-77. Some comments follow with regard to the use of these two input-output tables. The 1962-63 input-output table was constructed by Khan and MacEwan [20] at the Pakistan Institute of Development Economics, Karachi, whereas the 1976-77 input-output table was constructed by a group of experts at the Planning Commission of the Government of Bangladesh [21]. In both of these table flows of transactions are shown at current purchasers' prices. The main reason for using purchasers' prices is simply the availability of data.

In the Khan-MacEwan table the whole economy is divided into thirty five sectors of which six are agricultural, twenty are manufacturing and the rest are non-tradable sectors. The table constructed by the Planning Commission consists of forty seven sectors of which nine are agricultural, twenty-two are manufacturing and the rest are non-tradable sectors. Both of these tables relied heavily on the published data of the Census of Manufacturing Industries of the respective years. The limitations of the data of the Census of Manufacturing Industries are quite well known and

they apply equally to the input-output tables constructed on the basis of these data. Besides the data of the Census of Manufacturing Industries, other supplementary data on small-scale and cottage industries available from alternative sources were also used. In developing the 1976-77 input-output table a number of specialised surveys were conducted to supplement the data of the Census of Manufacturing Industries. In other words, both the tables are based on the combined data of large scale well as small scale and cottage industries.

In making comparison over time both of these tables are adjusted in terms of a common sector classification scheme. This is a hazardous job. Some minor discrepancies or inconsistencies may still remain but it is hoped that this does not distort the broad results in a significant way. It was decided to reconstruct both the tables into thirty one sectors so that comparisons between the results based on these tables can be made. Of these thirty one sectors, six are agricultural, nineteen are manufacturing, and the remaining six are non-tradable sectors. One of the primary reasons for re-grouping of both the tables is that some of the background information is not available at a higher level of disaggregation.

Thus, by making adjustments to the original tables (discussed in Appendix 2) two input-output tables for 1962-63 and 1976-77 are reconstructed in terms of thirty one sectors. To make meaningful comparison of the input-output coefficients over time, ideally input-output tables should be developed at constant prices. Since the two input-output tables are constructed in current prices, the changes in the input-output coefficients will reflect two things, i.e. technological change and price change. In the time period of 1962-63 to 1976-77 many changes could take place in both technology and prices. However, it is not possible to identify how much change in the input-output coefficients is due to technological progress. The difficulty in this respect is the requirement of not only thirty one sectoral price deflators but also different prices deflators for each cell of the input-output table. The underlying reason is that the different purchasers pay different prices for the same inputs purchased in the different markets. The changes in prices may themselves lead to the processes of substitution among inputs, one of the crucial assumptions of input-output analysis is that the technology remains fixed. But in a time span of fourteen years, i.e. 1962-63 to 1976-77 it is almost inevitable that technology changed in some ways. Detailed information on price changes to correct the flows of 1976-77 input-output table are not available.

2.2: *Sources of data on labour and capital*

To analyse the employment potential of the different sectors of the economy, information on labour and capital inputs employed in these sectors is needed. In the absence of better information, the data for average daily employees are used for measuring labour input. The accurate figures on capital are difficult to come by. However, such data from the Census of Manufacturing Industries suffer from one limitation, the input-output tables are based on the combined data of both large scale and small scale industries. The Census of Manufacturing Industries report data mainly on large scale industries. It is quite likely that the labour and capital ratios of large scale manufacturing industries differs from those of the small scale and cottage industries. However, enough information on labour and capital employed in small scale and cottage industries are not available. The sectoral labour employment figures that are used belong to the large scale manufacturing industries. In this sense estimate of employment potential are certainly underestimates.

It is extremely difficult to obtain reliable employment figures for the agricultural and non-tradable sectors. Various sources are consulted to get such figures. Details are discussed in Appendix 3.

It may be mentioned here that the figures for the agricultural and non-tradable sectors for 1962-63 should be taken as illustrative figures only. Fortunately for the year 1976-77 these figures are more reliable as they are readily available.

The main source of data on capital for the two years, i.e. 1962-63 and 1976-77 are Khan and MacEwan [20] and the Planning Commission [21] respectively. For a number of reasons pointed out by Khan and MacEwan, the data on book value of fixed assets reported in the Census of Manufacturing Industries are not used. Therefore, these figures for 1962-63 are taken from Khan and MacEwan: The input-output table of 1976-77 provides estimates for sectoral capital figures. While regrouping in accordance with the present sector classification weighted average figures are taken as sectoral estimates of capital inputs.

2.3 *Sources of data on trade*

Most of the trade data of Bangladesh are available in the Statistical Digest of East Pakistan, Statistical Digest of Bangladesh, Statistical Yearbook of Bangladesh, Statistical Pocket Book of Bangladesh, and Monthly Statistical Bulletin of Bangladesh-all publications of the Bangladesh Bureau of Statistics. The Central Statistical Office (CSO) of the then Central Government of Pakistan used to publish trade data of the then East Pakistan till Bangladesh became separated from the then West

Pakistan. These data were reported in the CSO's Monthly Bulletin of Statistics. Apart from these sources such data are also available from monthly publications like Bangladesh Bank Bulletin and Economic Trends; and annual publications like Export Receipts, and Balance of Payments—all publications of the Bangladesh Bank (the Central Bank of Bangladesh). Besides these, foreign trade statistics are also published in publications of the Ministry of Finance and Planning Commission like Bangladesh Economic Survey and Economic Review. Generally speaking trade data are more reliable than other data. The reason is that these data are by-products of the administrative system. This is to say that the government collects foreign trade statistics for revenue purposes and therefore extra care is taken to collect relatively more accurate statistics.

SECTION 3: Analysis of the Statistical Results on Factor Intensity in the Manufacturing Trade of Bangladesh

The total labour requirements per unit of final demand calculated by taking into consideration different types of inter sectoral linkages are shown in Tables 1 to 3. Since the main concern is in the manufacturing industries only, figures are presented for the nineteen industrial sectors of the Bangladesh economy. In ranking different sectors on the basis of labour intensity, the petroleum sector has been excluded because this is an empty sector in 1962-63 input-output table. It can be seen from Table 1 that, on the basis of all linkages, with the exception of cotton textiles and other textiles, labour intensity consistently declined from 1962-63 to 1976-77. The median value of labour intensity fell by 73 per cent whereas the simple average fell by 11 per cent.

It is discussed in Appendix 3 that the data on agricultural and non-tradable sectors are not reliable. Therefore, the labour intensity of manufacturing sectors is considered excluding linkages with these sectors. It can be seen from Table 2 that, excluding linkages with the agricultural sectors, there was also a general decline of labour intensity. The median value fell by 68 per cent and the simple average figure of labour intensity fell by 71 per cent and the simple average figure of labour intensity fell 71 per cent. When linkages only within the manufacturing sectors are considered, it can be seen from Table 3 that the median value of labour intensity declined by 87 per cent. The simple average figure fell by 85 per cent.

Finally, if linkages only with the non-tradable good sectors are considered, it can be seen from Table 4 that the median value of labour intensity fell by 69 per-cent. The simple average figure in this case fell by 68 per-cent. In general it appears that the most labour intensive sectors are cotton textile, jute, other textile, wood and miscellaneous industries

Table 1 - 4: Total Labour Requirements per One Million Taka of Final Demand in the Industrial Economy of Bangladesh: 1962-63 and 1976-77 (19 Input-Output Sectors of Bangladesh)

1-0 Sector	Excluding Linkage		Linkage only within All Linkages		Linkage with non-tradable with Agriculture		the Indust. Economy goods only	
	1962-63	1976-77	1962-63	1976-77	1962-63	1976-77	1962-63	1976-77
1. Sugar	366(11)	104(11)	87(3)	33(3)	52(4)	15(8)	215(6)	93(11)
2. Edible Oil	387(14)	108(13)	61(1)	22(1)	26(2)	6(1)	300(11)	89(9)
3. Tobacco	236(5)	56(3)	68(2)	26(2)	23(1)	6(1)	130(2)	37(2)
4. Other food	375(13)	68(5)	115(5)	39(6)	79(6)	12(6)	378(15)	85(8)
5. Cotton Textile	768(17)	3102(18)	343(17)	43(7)	290(17)	36(15)	430(17)	192(17)
6. Jute Textile	374(12)	200(16)	179(9)	72(15)	148(10)	52(17)	249(8)	202(18)
7. Other Textile	829(18)	1169(17)	646(18)	96(18)	576(18)	57(18)	845(18)	139(16)
8. Paper	829(4)	89(9)	158(7)	72(14)	89(7)	27(13)	159(4)	123(14)
9. Leather	348(9)	102(10)	185(10)	35(4)	115(8)	7(3)	326(12)	91(10)
10. Fertiliser	157(2)	73(7)	132(6)	60(10)	64(5)	14(7)	118(1)	58(4)
11. Other Chemical	266(8)	107(12)	223(11)	79(16)	164(11)	25(12)	342(13)	97(12)
12. Cement	112(1)	75(8)	92(4)	64(13)	47(3)	9(4)	217(7)	83(7)
13. Basic Metal	238(6)	44(1)	235(13)	39(5)	166(12)	9(4)	295(9)	33(1)
14. Metal Products	249(7)	54(2)	240(14)	51(8)	193(13)	21(11)	429(16)	47(3)
15. Machinery	218(3)	71(6)	173(8)	61(12)	132(9)	20(10)	158(3)	63(5)
16. Transport Equipmt.	364(10)	64(4)	250(15)	59(9)	198(14)	16(9)	295(9)	68(6)
17. Wood	499(16)	117(14)	235(12)	61(11)	214(15)	45(16)	371(14)	136(15)
18. Misc. Industries	455(15)	145(15)	309(16)	87(17)	261(16)	35(14)	195(5)	112(13)
19. Petroleum	--	81	--	76	--	3	--	--
Average	359	319	207	60	158	23	303	97
Median	356	96	182	59	140	18	295	90
Percentage of	(a) average: 11%	(a) average: 71%	(a) average: 85%	(a) average: 68%				
Decline of	(b) median: 73%	(b) median: 68%	(b) median: 87%	(b) median: 69%				

Notes: Figures in parentheses are the ranks of labour intensity.
Source: Own calculations.

etc. This particular method of identifying labour intensive industries is heavily dependent on what type of inter sectoral linkages are incorporated in the particular index of labour intensity. Thus in some cases the relative position of an industry changes depending on what type of linkages are included or excluded in the calculation of labour intensity. In some cases relatively labour intensive sectors turned into relatively capital intensive sectors.

The results of the calculation of total capital-intensity are presented in Tables 5 to 8. The general trend was towards an increase in the capital intensity of the manufacturing industries of Bangladesh between 1962-1963 to 1976-77. Thus if all linkages are considered it can be seen from Table 5 that with the exception of sugar, other food, cotton textiles, paper, fertiliser and wood, the capital intensity increased in the period under review. The median value increased by 41 per cent whereas the simple average increased by 10 per cent. A similar trend can also be found by an inspection of table 6 where linkages of the manufacturing sector with other sector, excluding agriculture, are considered. With the exception of industrial sectors like sugar, other food, cotton textile, other textiles, paper, fertiliser and wood, the capital intensity increased in all other sectors of the industrial economy of Bangladesh during the period 1962-63 to 1976-77. The median value of capital intensity increased by 5 per cent only.

However, from Table 7 where linkages only within the industrial economy are considered, a very different trend is found in the capital intensity of the manufacturing industries of Bangladesh. The capital intensity of sugar, edible oil, tobacco, other food, cotton textile, jute textile, other textile, paper, leather, fertiliser and wood decreased. Thus the simple average figure of capital intensity declined by 12 per cent although the median value increased by 6 per cent. If linkages with the non tradable goods only are considered, a different trend of capital intensity emerges. Thus in sectors like sugar, edible oil, other food, other textile, paper, fertiliser basic metal, wood and miscellaneous industries, the capital intensity declined. The median value of capital intensity declined by 5 per cent although the simple average has increased by 1 per cent only.

In general, the most capital intensive-industries in Bangladesh in the year 1962-63 were fertiliser, paper, other textile, cotton textile and miscellaneous industries. Whereas in 1976-77 the most capital intensive sectors happened to be cement, fertiliser, paper, other chemical, miscellaneous industries and machinery. In some cases there were shifts in the relative positions of the industries with regard to capital intensity.

Table 5-8 Total Labour Requirements per One Million Taka of Final Demand in the Industrial Economy of Bangladesh: 1962-63 and 1976-77 (19 Input-Output Sectors of Bangladesh)

Value in '000 Taka

	All Linkages		Excluding Linkage with Agriculture		Linkage only within the Indust. Economy		Linkage with non-tradable goods only	
	1962-63	1976-77	1962-63	1976-77	1962-63	1976-77	1962-63	1976-77
1-0 Sector								
1. Sugar	1559(8)	1112(3)	1358(7)	693(3)	1065(8)	246(4)	3360(12)	1603(4)
2. Edible Oil	793(2)	1189(4)	557(1)	675(2)	299(1)	213(3)	2674(10)	2269(8)
3. Tobacco	765(1)	948(2)	643(2)	780(4)	357(2)	289(5)	1185(1)	760(1)
4. Other food	1360(6)	1195(5)	1106(4)	885(5)	839(6)	169(1)	3621(15)	1479(3)
5. Cotton Textile	2857(15)	2273(9)	2540(15)	1322(7)	2042(15)	815(7)	3413(13)	5153(15)
6. Jute Textile	2028(13)	2789(12)	1845(12)	2154(10)	1371(13)	1290(10)	2566(9)	4909(14)
7. Other Textile	2993(16)	3322(8)	2857(16)	1845(8)	2399(16)	946(8)	2973(11)	1673(6)
8. Paper	6172(11)	4227(16)	6122(14)	4141(16)	3606(17)	2787(16)	7814(17)	6271(17)
9. Leather	1064(3)	1518(6)	944(3)	1133(6)	492(3)	463(6)	1631(3)	2581(10)
10. Fertiliser	8411(18)	5076(17)	8391(18)	5023(17)	6200(18)	2907(17)	9138(18)	6179(16)
11. Other Chemical	1141(4)	3119(15)	1110(5)	3003(14)	674(4)	1941(15)	1426(2)	3591(13)
12. Cement	1193(12)	5950(18)	1898(13)	5911(18)	1348(12)	4192(18)	4660(16)	8678(18)
13. Basic Metal	1531(7)	1982(7)	1529(10)	1976(9)	778(5)	1041(9)	1890(5)	1638(5)
14. Metal Products	1310(5)	2441(11)	1304(6)	2408(12)	867(7)	1521(12)	2031(7)	2128(7)
15. Machinery	1673(11)	2846(13)	1641(11)	2833(13)	1251(11)	1873(14)	1991(6)	3017(11)
16. Transport Equipmt.	1593(9)	2292(10)	1510(9)	2286(11)	1078(9)	1363(11)	1712(4)	2406(9)
17. Wood	1650(10)	943(1)	1459(8)	600(1)	1132(10)	184(2)	2321(8)	1133(2)
18. Misc. Industries	2065(14)	3055(14)	1959(14)	3010(15)	1376(14)	1797(13)	3615(14)	7023
19. Petroleum		7244		7234				
Average	2271	2507	2154	2259	1510	1335	3223	3252
Median	1622	2283	1520	2065	1105	1166	2620	2493
Percentage increase of	(a) average: 10%	(b) median: 41%	(a) average: 5%	(b) median: 36%	(a) average: 12%	(b) median: 6%	(a) average: 1%	(b) median: 5%

Notes: Figures in parentheses are the ranks of Capital intensity.

Source: Own calculations.

In Tables 9 to 12 the total labour/capital requirements for the different industrial sectors of Bangladesh economy are presented. An inspection of these tables also reveals the fact that in general the labour/capital ratios declined during the period 1962-63 to 1976-77. The only exceptions to this seem to be cotton textile and other textiles, when total factor requirements are measured by taking into consideration all linkages with the manufacturing industries. However, when linkages only within the manufacturing industries are considered, the sugar and the wood sectors emerge as exceptions to the general trend. These tables more or less confirm the finding that general there was a bias towards higher capital intensity in the manufacturing industries of Bangladesh in the period 1962-63 to 1976-77.

Ideally these aggregate result on sectoral factor intensities should be supplemented by detailed knowledge of individual industries. It must, however, be pointed out that not many detailed studies are available for individual industries sectors. Nevertheless, an attempt is made to give some indication to the nature of a few individual industries and their factor intensities.

Among the individual sectors of the industrial economy of Bangladesh, jute textile occupies the most important position in almost every respect. Before the partition of the Indian subcontinent in 1947 there were no jute mills in Bangladesh although she was the single most important supplier of the best quality jute fibre in the world market. It started producing jute manufacturing goods in the fifties. There are three main products of jute manufacturing industries in Bangladesh—hessian, sacking and carpet backing.

Although the jute manufacturing sector is a relatively labour intensive industry, calculation shows that the labour-intensity declined over time. There are a number of reasons why it happened so in Bangladesh. One of the most well-known reasons is the under-utilisation of existing industrial capacity. It was found in a survey of 1969-70 that in the case of hessian, sacking and carpet backing the rate of under-utilisation was 33 per cent, 33 per cent and 40 per cent respectively for the three products. Islam made a comparison between observed capital-labour ratios and full capacity capital labour ratios for 15 manufacturing industries of Bangladesh in the year 1968-69[25]. According to his calculations, manufacturing capitals of Bangladesh was utilised only 40 per cent of the available time. The empirical evidence suggests strongly that labour-capital ratios can be increased by a greater utilisation of capacity. It is understandable that if the existing capacity could be fully utilised not only

Table 9-12 Total Labour /Capital Requirements per One Million Taka of Final Demand in the Industrial Economy of Bangladesh: 1962-63 and 1976-77

(Figures in number of labour per '000 Taka of capital)

IO Sector	All Linkages		Linkage Excluding Agriculture		Linkage only within the Indust. Economy		Linkage only with the non-tradable goods	
	1962-63	1976-77	1962-63	1976-77	1962-63	1976-77	1962-63	1976-77
1. Sugar	.2345394	.0934106	.0642446	.0475603	.0488976	.0611762	.0640528	.0578449
2. Edible Oil	.4878673	.0908946	.1086461	.0327858	.0878277	.0299586	.1120303	.0392310
3. Tobacco	.3083159	.0590550	.1051943	.0331405	.0647959	.0206678	.1100470	.0486765
4. Other food	.2756325	.0567448	.1043370	.0440115	.0935521	.0684360	.1045876	.0573298
5. Cotton Textile	.2689550	.1365632	.1348419	.0331101	.1418726	.0438575	.1259474	.0372805
6. Jute Textile	.1841815	.0715628	.0971029	.0336081	.1080639	.0404238	.0970720	.0411494
7. Other Textile	.276853	.5306679	.2259616	.0517958	.2401252	.0606886	.2840210	.0832647
8. Paper	.0370571	.0211526	.0257901	.0174419	.0246926	.0097191	.0203487	.0195343
9. Leather	.3269744	.0670532	.1956751	.0308238	.23333537	.0156385	.2001088	.0354183
10. Fertiliser	.0186321	.0144520	.1057276	.0118808	.0102460	.0047984	.0129570	.0093375
11. Other Chemical	.2329184	.0341542	.2009486	.0263523	.2538054	.0129401	.2400477	.0269825
12. Cement	.0586461	.0125609	.0485369	.0107687	.0348942	.0021014	.0465621	.0095528
13. Basic Metal	.1554554	.0220120	.1539154	.0196422	.2134276	.0090195	.201436	.0201436
14. Metal Products	.1902534	.0223594	.1844003	.0209857	.2226497	.0136074	.2111298	.0219879
15. Machinery	.1302302	.0249701	.1057463	.0215390	.1052189	.0109407	.0794145	.0208129
16. Transport Equipmt	.2284566	.0277351	.1653837	.0259962	.1832443	.0116916	.1720368	.0282685
17. Wood	.3025148	.1253049	.1611185	.1011613	.1886678	.2451666	.1598215	.11198125
18. Misc.	.2203003	.04675056	.1579454	.0287858	.1897892	.0196076	.0540252	.0363735
19. Petroleum	-	.0111548	-	.0105672	-	.0006022	-	.0100528

Source: Calculated from Tables 1 and 5, 2 and 6, 3 and 7, 4 and 8.

could production levels have been increased but also additional amounts of labour could have been employed.

The decline in labour-intensity is a result of a complex set of economic forces at work. The technological factor and learning-by doing etc. play an important role in determining labour-intensity of an industrial sector over time. Kibria and Tisdell [24], on the basis of more detailed examination of primary data, demonstrated that in the jute manufacturing industries of Bangladesh there was a big rewards capital intensity. With the introduction of spinning frames incorporating newer tewe techniques, the capital intensity involved in the spinning of both heavy and light yarns in Bangladesh tended to increase. By fitting Cobb-Douglas production function to primary data, Kibria and Tisdell derived learning by-doing implications for big jute manufacturing industries of Bangladesh. Thus they concluded that the multiplicative factor, A, in the Cobb-Douglas production function tended to rise in the period following the introduction of new vintage machines, except when this period coincided with the 1971 war, nationalisation and managerial dislocation.

There was an initial rise in A which reflected the contribution of learning-by-doing to output. However, there was a subsequent decline in A which reflected the fact that the machines were losing their efficiency due to wear and tear and/or that some skilled management was attracted to newer mills with more modern machines. Thus the existence of learning-by-doing effects reflected a rise in labour-productivity in the jute manufacturing industries of Bangladesh.

Ahmad and Anwaruzzaman examined the trend in the productivity of labour, capital, raw material and fuel and power of four selected manufacturing industries of Bangladesh, i.e. jute, cotton, textile, cigarettes and matches, during the period 1962-63 to 1968-69[26]. Thus in the case of the jute manufacturing industry they found that labour productivity increased at the significant rate of 0.5 per cent annum, capital productivity declined at the rate of 4.3 per cent per annum, while capital-intensity increased at the rate of 4.8 per cent per annum. This implies that there was capital depending in the jute industry due to capital-labour substitution and resulted in a net loss of the combined productivity of labour and capital.

Next to jute, cotton textile is the most important textile industry of Bangladesh. The calculation shows that the total labour/capital ratio in this industry increased during the period 1962-63 to 1976-77. This sector produces both yarn and cloth for the economy. An important feature is that there are many hand-loom industries in this sector and they are more labour-intensive than the mills. This perhaps explains the relatively more

labour-intensiveness of the cotton textile sector in comparison with other sectors of the industrial economy. Ahmad and Anwaruzzaman found that capital intensity in the industry increased at the rate of 9.9 percent per annum; and efficiency in the use of capital input declined at a rate of percent per annum with labour productivity increasing at a rate of 3.8 per cent per annum, although neither of the rates is statistically significant [26].

According to input-output calculations the total labour/capital ratio in the cigarette industry of Bangladesh declined in the period 1962-63 to 1976-77. Although direct capital/output ratio fell, the total capital requirements per unit of final demand increased in the period under review. The study by Ahmad and Anwaruzzaman demonstrated that capital intensity declined at a rate of 10.8 per cent annum, capital productivity increased at a significant rate of 13.2 per cent per annum and labour productivity increased at a statistically non-significant rate of 2.5 per cent per annum [26].

Chemicals is an important industrial sector of the economy of Bangladesh. The input-output calculations show that the total labour/capital requirements per unit of final demand in the chemicals industry declined during the period 1962-63 to 1976-77. But there is no in-depth study of various chemical industries of that country. In their study Ahmad and Anwaruzzaman examined the data of the matches industry [26]. However tiny it might be in the chemical sector as a whole, it is worth considering their results. This study reveals a significant decline in the efficiency of capital which constituted about one-third of the total input mix while capital productivity declined at a rate of 8.2 per annum, labour productivity declined by 1.1 per cent per annum and capital intensity increased at a rate of 7.2 per cent per annum.

In the absence of any detailed analysis nothing can be said about other manufacturing sectors. It is necessary to be cautious about interpreting the aggregate results reported here, because there can also be changes in the product mix within a particular sector. Having said this much about the different manufacturing industrial sectors, the estimates of the total factor requirements of different categories of tradables, i.e. exportables, all exports, competing imports and all imports in the industrial economy of Bangladesh are presented. These results are reported in Tables 13 and 14. It can be seen from Table 13 that in 1962-63 exportables are less labour-intensive than the import-competing products. This generally holds good in the case of all types of linkages considered in the calculation of total factor requirements. On the other hand if all export and all imports are considered, except when total factor requirements are calculated on the basis of linkages only with the non-tradable sectors, it can be seen that exports are in general more labour-

Table 13-14 Total Labour Requirements per One Million Taka of Different Tradable Categories of Bangladesh: 1962-63 and 1976-77
(Figures in number of Employees) (Value in '000 Taka)

(1) Tradable Category	(2) All linkages	(3) Linkages Excluding Agriculture	(4) Linkages only with in industry	(5) Linkages only with the non- tradables	(6) All Linkages	(7) Linkages excluding Agriculture	(8) Linkages only within Industry	(9) Linkages only with the nonthin tradables
		PART A: 1962-63				PART A: 1962-63		
a) Exportables	365	189	150	252	2583	2421	1670	3030
b) All Exports	374	206	166	250	2415	2268	1566	3012
c) Competing Imports	539	220	174	380	1963	1728	1315	3131
d) All Imports	345	201	157	269	1697	1592	1118	2577
		PART B: 1976-77				PART B: 1976-77		
a) Exportables	177	63	47	193	2477	1904	1087	4701
b) All Exports	169	65	39	186	2782	2267	1370	4651
c) Competing Imports	191	60	20	81	2554	2413	1413	2746
d) All Imports	154	65	21	72	3168	3081	2002	2818

Source: Own calculations.

intensive than imports, although the difference is not very large. Compared to 1962-63 the situation in 1976-77 is worse. Absolute total labour requirements of all tradable categories declined in 1976-77. If all linkages are considered it can be seen that labour requirements for exportables were less than those of import-competing products. But in the case of other types of linkages the labour requirements for exportables were greater than those of import-competing products. If all exports were greater than those of imports for all types of linkages. Thus in this limited sense, for Bangladesh the Heckscher-Ohlin theory held good in 1976-77.

As far as capital requirements are concerned it can be seen from table 14 that the exportables require more capital than import-competing products in 1962-63. However, if linkages only with the non-tradable sectors are considered, the capital requirements of exportables were less than those of import-competing products. When all exports are compared with all imports the capital requirements of exports were higher than those of imports in cases of all types of linkages. In 1976-77, except when total factor requirements are measured on the basis of linkages only with the non-tradable good sector, the total capital requirements for exportables declined and those for import-competing products increased. Thus capital requirements for exportables were less than those for competing imports. In a way this is, of course, in conformity with the Heckscher-Ohlin theory of international trade. Once again if capital requirements for all exports and all imports are compared it can be seen that the exports required less capital than the imports. However, in calculating capital requirements, if linkages only with the non-tradable home goods are considered, it is seen that the exportables required more capital than the competing imports. This is true in the case of all exports and all imports.

In order to make this situation clearer comparative capital requirements per unit of labour are also calculated and these estimates are reported in Table 15. It can be seen from this table that in 1962-63 comparative capital requirements for the exportables were always higher than those of the competing imports, whatever type of linkage is considered. Again if all exports and all imports are considered, the capital requirements of exports were consistently higher than those of imports in 1962-63. The situation in the year 1976-77 was different from that of 1962-63. In general, comparative capital requirements for all the tradable categories increased from 1962-63 to 1976-77. However, this increase seems to be more pronounced in the case of import-competing products than that of the exportables.

If total factor requirements are calculated by considering all linkages, it can be seen that comparative capital requirements for exportables were higher than those of the competing imports in 1976-77 but this gap was very narrow in that year in comparison with that of 1962-63. When other types of linkages are considered the comparative capital requirements of exportables were higher than those of the competing imports. If all exports are compared with all imports it can be found that the comparative capital requirements were lower for the exports than those of the imports. Thus it seems that the capital requirements for import replacements increased substantially in the period 1962-63 to 1976-77. These aggregate results suggest that in Bangladesh there was a general trend of capital bias in the process of industrialisation but this bias was more pronounced in the case of import-substituting type of industries. The employment implications of exportables and import replacements are not so clear because these are crucially dependent on what type of linkages are considered in estimating total factor requirements. However, if linkages only within the industrial economy or linkages only with the non-tradables only with the non-tradables sectors are considered, it seems that the employment potentials of the exportables are greater than those of the import-replacements only in 1976-77.

In a previous study Reza investigated the employment implications of alternative trade strategies in Bangladesh within an input-output framework of analysis [12]. He used an input-output table of 1965-66 constructed only for the manufacturing industries.

His main conclusion was that in the sixties and far as employment of unskilled labour was concerned, there was not much difference between the requirements of exports and those of import replacements. However, because of the changes in the composition of trade there were some increases in labour requirements and the increases were faster in the case of exportables and as a result by the end of the sixties, exports needed a marginally greater amount of labour as compared to import replacements. Reza's study has a number of limitations. First, because of the fact that he used an input-output table for a single year only, time comparison did not make much sense particularly when the time span was so long. Second, his input-output table relates only to the manufacturing sectors and as a result he could not trace out linkages with the agricultural and the non-tradable sectors.

Table-15 : Comparative Capital Requirements Per Unit of Labour in Different Tradable Categories of Bangladesh: 1962-63 and 1976-77
(Value in Taka)

(1) Tradable Category	(2) All Linkages	(3) Linkages Excluding Agriculture	(4) Linkages only within Industry	(5) Linkages only with the non-Tradables
PART A: 1962-63				
a) Exportables	7076	12810	11132	12025
b) All Exports	6458	11010	9432	12047
c) Competing Imports	3642	7855	7560	8240
d) All Imports	4920	7923	7120	9581
PART B: 1976-77				
a) Exportables	13993	30218	26520	24358
b) All Exports	16461	34881	35122	25004
c) Competing Imports	13373	40217	70653	33895
d) All Imports	20571	57402	95321	39140

Source: Calculated from Tables 13 and 14.

SECTION 4: INTERNATIONAL COMPARISON OF FACTOR INTENSITIES OF MANUFACTURING TRADE.

There are a large number of studies in this subject. Factor contents of manufacturing trade of Pakistan were analysed by Nishat [27, 28,] and that of India by Bharadwaj; and Bharadwaj and Bhagwati [5]. It was found that labour intensity in the manufacturing industries of Pakistan and its different tradable categories declined sharply in the period 1960-61 to 1969-70. But this decline was more pronounced in the case of exports. Thus in Pakistan, like Bangladesh, the general trend was towards a capital bias in the process of industrialisation.

Bharadwaj showed that the U.S. exports relatively capital-intensive goods to India and imports relatively labour-intensive goods from India. On the other hand, India exports to the U.S. relatively more capital intensive goods and imports those goods from the U.S. whose production at home would involve relatively more labour. However, India's trade with the rest of the world reveals that the structure of its foreign trade turns out to be such that Indian exports absorb relatively more labour and less capital vis-a-vis her import replacements of an equal value. In their

subsequent work Bharadwaj and Bhagwati found that even after adjustments made for human capital, exports remain labour-intensive but, contrary to the popular expectation, this increases the relative capital/labour ratio of exports.

Table- 16 : International Comparison of Factor Requirements of Exportables and Import-Replacements (i.e. exportables/import-replacements)

Country	Year	Capital Intensity	Labour Intensity
Bangladesh	1962-63	(a)	1.32
		(b)	.68
		(c)	1.40
		(d)	.86
	1976-7	(a)	1.27
		(b)	.97
		(c)	.66
		(d)	.93
Pakistan	1960-61	(a)	1.05
		(b)	2.05
	1969-70	(a)	1.72
		(b)	2.38
India	1953-54	(a)	1.61
		(b)	1.41

- Notes: (a) all linkages
(b) excluding linkages with agriculture
(c) linkages within manufacturing only
(d) linkages only with the non-tradables.

Sources: (1) Own study, (2) Nishat, S 'Labour Content of Traded Manufactured Goods', The Pakistan Development Review, Volume 16, No.1, Spring, 1978. (3) Bharadwaj, R., Structural Basis of India's Foreign Trade, University of Bombay, Bombay, 1962.

Hong found that capital/labour ratio of Korea's export bundle increased from 0.6 in 1960 to 3.1 in 1975. Import competing production was much more capital intensive than that of exports, but the difference became smaller in the latter period. The labour/output ratios in export production as a whole decreased at an average annual rate of about ten per cent over the period. The substantial increase in the capital intensity of Korea's exports was predominantly due to labour-saving factor substitution and only slightly due to the shifts in the composition of exports.

It is clear that the factor requirements of manufacturing trade depend on the country and the year chosen for the purpose of analysis. But on the whole there is a great deal of similarity in the broad pattern of factor intensity in the manufacturing trade of Bangladesh, India and Pakistan. In Table 16 some of the statistical results are compiled together for the purpose of comparison

SECTION 5: AN INTERPRETATION OF THE FINDING AND CONCLUSIONS

Given the statistical facts of Bangladesh, how does an analyst interpret the findings? It is not possible to fit Bangladesh into any theoretical model. However, on the basis of empirical findings some general explanation of the nature of industrial growth in Bangladesh can be given. On the whole capital cost of export expansion was higher than that of import replacements in the sixties. But the situation improved slightly in the seventies. In the early phase of industrialisation, in most cases Bangladesh followed capital-intensive lines of production. A substantial amount of the capital equipment was imported from abroad and this was also responsible for additional capital-intensive bias. Khan in an inter-country comparison argues that the capital intensities of Bangladesh manufacturing industries are significantly higher (with the exceptions of basic metals) than those in the U.S.A. The data of Table 17 shows this very clearly [29].

The most crucial question in this context is what are the major contributory factors to such a high level of capital intensity in the manufacturing industries of Bangladesh? The general explanation of this is that the various governmental policies in a regime of import substitution keep the prices of capital goods artificially lower than those of their scarcity prices. This certainly acted as a great incentive to build up additional capital stock and these also lead to excessive accumulation of manufacturing capacity in the industrial economy of the country. Apart from the above-mentioned Governmental policies, there are other external factors responsible for higher capital intensity in the manufacturing.

Table- 17 : Capital-Labour Relations and the Manufacturing Industries: Bangladesh, Japan and the U.S.A.

Sector	Bangladesh	Japan	U.S.A.
Cotton Textile	1.00	.38	2.18
Jute Textile	1.00	-	-
Paper	1.00	.07	.85
Leather Goods	1.00	.59	1.40
Rubber Goods	1.00	.32	4.43
Fertilisers	1.00	-	-
Other Chemicals	1.00	-	-
All Chemicals	1.00	.33	2.49
Basic metals	1.00	4.04	13.60
Machinery	1.00	.20	1.96
Wood Products	1.00	.40	-

Notes: (a) Computed in terms of value of fixed assets in U.S. dollars per worker, after correcting for devaluation of Bangladesh currency in 1972.

(b) The Bangladesh values are set at unity; the Japanese and the U.S. values are deviations from unity.

Source: Ahmed, I.: 'Employment in Bangladesh: Problems and Prospects', in Robinson, E.A.G. and Griffin, K.(eds): *The Economic Development of Bangladesh within a Socialist Framework*, The Macmillan Press Limited, London, 1974, p 250.

industries. Foreign aid policies of the donor countries in terms of restricted use of aid to the capital components of projects and the industrial country monopoly on the supply of capital goods etc. also create capital intensive bias in the techniques of industrial production in a country like Bangladesh.

In addition to these factors the internal distribution of income may also bias the structure of demand towards capital intensive products. In fact it remains to be seen to what extent the domestic or external factors are responsible for capital-intensive bias in the techniques of industrial production in Bangladesh.

In a study of the effects of income distribution on production-mix and employment, Islam did not find very encouraging results [25]. The effects of a hypothetical redistribution of income on the factor intensities were examined within an input-output framework. It was assumed by this author that 10 per cent of total personal income was redistributed from the top decile to the lowest four deciles. This increased the income of the lowest 40 per cent of the population by about 50 per cent. But this hypothetical

redistribution of income increased the labour requirements by only 1.7 per cent. The increase was mainly contributed by the agricultural sector where labour requirements increased by 2.5 per cent. In the industrial sector the redistribution of income, as a matter of fact, reduced total labour requirements by a small amount of 0.6 per cent. This is quite understandable because in only four industries there was an increase in consumption after a redistribution of income. In most of the sectors there was a reduction of consumption. The hypothetical redistribution of income led to a 1.5 per cent reduction in total capital requirements and that of the manufacturing sector to a reduction of 1.7 per cent.

Thus this study indicates that though there is a little possibility of reducing capital requirements by a redistribution of income, this does not necessarily mean that it will lead to higher level of employment. In this connection one must also recognise the various difficulties like increased demand for food, pressure of scarce foreign exchange etc. in implementing such a redistribution scheme in a country like Bangladesh.

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FOREIGN ASSISTANCE AND AGRICULTURAL DEVELOPMENT IN BANGLADESH 1960 -1980

S. AHMAD*

I. INTRODUCTION

At the time of independence in 1947, Bangladesh (erst while East Pakistan) had a dominant agricultural sector and a very small industrial sector. In 1949/50 agriculture contributed about 65.4 per cent to GDP and the contribution of the industrial sector to GDP was only 3.0 per cent [2; 170]. Agriculture's contribution to GDP decreased to 60.4 per cent in 1959/60 and to 50.9 per cent in 1979/80 while the industry's contribution increased to 6.3 per cent in 1959/60 and to 7.8 per cent in 1979/80. Thus there was a modest change in the agrarian character of the Bangladesh economy during fifties, sixties and seventies.

Since 1947 industrialization was one of the main strategies of development. The identifiable feature of industrialization in Bangladesh was the goal of import substitution with little importance to export-oriented industries[1; 313-5]. Of course, more importance was attached to export-oriented industrialization in the post-liberation period (1972/73-1979/80) compared to the pre-liberation period (1960/61-1969/70).

Because of industrialization strategy of development, agriculture was neglected in terms of allocation of private and public sector resources. Furthermore, the technological limitations and deficiencies, and shortages and delayed supplies of agricultural inputs are some of the manifestations of capital starvation in agriculture of the Bangladesh economy. Even though foreign assistance supported the industrialization in Bangladesh during the sixties and seventies [1], is also reduced this capital starvation in Agriculture and contributed to its development. Since there is hardly any study assessing the contribution of foreign assistance to the development of the agricultural sector in Bangladesh, this article is an attempt in this direction.

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The agricultural sector¹ of the Bangladesh economy received foreign assistance in three forms: (i) food assistance (ii) commodity assistance and (iii) project assistance. Accordingly we have discussed the contribution of the food assistance in section II, that of the commodity assistance in section III and of the project assistance in section IV. Finally some conclusions are drawn in section V.

I. FOOD ASSISTANCE

Food assistance was received as foodgrain imports under PL-480 (Table 1, Appendix A) which financed the Rural Works Programmes (RWP) generating a counterpart fund since November 1962. In the post-liberation period, some of the imported PL-480 foodgrains were distributed to the urban and rural areas through the statutory and modified rationing systems respectively. Some part of it generated counterpart funds of which some amount was used to finance development expenditures in the agricultural sector. The rest of the imported PL-480 foodgrains was used to finance the Food for Works Programmes (FWP). The magnitude of food assistance channelled to the Bangladesh agriculture in the post-liberation period is shown in Table 2 Appendix A.

The food aid/loan received in Bangladesh during the period is given in Table 3, Appendix A. Usually food assistance was made at the end of the financial year and intended to assist Bangladesh with the establishment of reserve food stocks. There was always a time lag between the commitment of foreign assistance and its utilization but it was the shortest for food assistance unless there were major administrative bottlenecks in the aid receiving and donor countries. In any event, the rate of utilization for food assistance was very high relative to other types of foreign assistance in Bangladesh (Table 4, Appendix A).

Both the RWP and FWP² in Bangladesh were controversial. Some found these programmes as a part of an attempt to break the stagnation of the rural sector while others viewed them as politically corrupt and of little economic value. However, a detailed discussion about them is given below with their physical achievements in Tables 5 and 6, Appendix A. Firstly, construction of roads in miles increased because of the RWP and

1 Agricultural sector is defined in this study to include the sub-sectors: crops forestry, fisheries and livestock.

2 RWP continued in Bangladesh till 1978/79 and FWP has been in operation since 1975.

FWP. One major effect of this was an increase in facilities for carrying agricultural products to markets in the absence of which the products would have been sold at lower prices to local traders who came to the farms to buy. As a result, the farmers obtained higher prices for their products [10; 210]. Secondly, the construction of roads in the rural areas reduced the transport costs for the Agricultural products [10; 209]. Thirdly, the lower transport cost and high farm gate prices increased the profitability of agricultural products. Thus farmers were induced to produce more of the traditional commodities and/or new commercial products. Fourthly, there were many depressions in Bangladesh where water used to accumulate and stood after raining or flooding. Canals could work as simple gravity-flow drainage channels that would carry into nearby waterways and/ or some cultivable land, and thus the productivity of land could be relatively increased by such drainage. To take advantage of these benefits, some drainage-cum-irrigation canals were excavated and/ or reexcavated under the RWP and FWP. Fifthly, a lot of tanks were dug or re-excavated under the FWP in the post-liberation period. These were the sources of surface irrigation water in winter as well as fish production. Sixthly, construction of embankments for flood controls was also increased in both the pre and post-liberation periods due to the RWP and FWP. The embankments protected cultivable land, animals, farm supplies, etc. from being washed away. Their benefits should be evaluated in terms of agricultural production saved and saving of other losses from floods. Thus the RWP and FWP provided employment to the rural labour force and contributed to increase agricultural production.

Besides the advantages of the RWP and FWP, food assistance had some additional merits. Firstly, increases in development expenditures and population increased the demand for foodgrains since 1960. The PL-480 foodgrain imports met some of this increased demand and thus kept foodgrain prices from rising at an abnormally high rate. Secondly, food assistance in Pakistan contributed, as indicated by Islam [4], to the successful operations of the buffer stocks in foodgrains which were used to stabilize prices and provide incentives for agricultural production. Thirdly, the attainment of self-sufficiency in foodgrains was one of the national objectives in both the pre and post-liberation periods. With food assistance the government did not neglect the agricultural sector altogether. On the contrary, food assistance allowed the government some flexibility and time in undertaking the policies for improvement of agricultural technology and development of the agricultural supply system. In words of Islam "food assistance provided the safety margin for the introduction of an experimentation with new and flexible

policy measures, away from direct controls, to stimulate agricultural production" [4; 524].

The price of rice steadily increased during the period under study [16; 206,18; 432-3] with the increased production of foodgrains [16; 44-7,13; 268, 270]. These facts might lead one to think that the imported PL-480 foodgrains did not create disincentives for the farmers to produce. But, this was not the case. Increased production of foodgrains might have been obtained, because the disincentives of the imported foodgrains were outweighed by the government's increased incentives for foodgrain production. However, the disincentive effect of the imported foodgrain probably worked in the following ways. Firstly, the imported foodgrains curtailed the size of the domestic market for the farmers. Because of this, their prices did not rise to the extent as they could have. Consequently, their domestic supply did not increase as it could be in the absence of foodgrain imports. Secondly, since the food price received by domestic farmers was lower than they would receive in the absence of foodgrain import, the incomes of the domestic farmers from their domestic foodgrain production were prevented from growing as fast as they could be. Thirdly, about 80 per cent of the ration supplied food served those consumers who had incomes to purchase their foodgrains in the free market. Resource transfers from urban consumers to rural farmers might not have taken place because of the availability of a cheap source for foodgrains for the former group of consumers from the rationing system. This might accentuate the negative effect of food assistance on the local production of agricultural products. Fourthly, Ahmad argued that with the decreasing trend of the per capita real income the absolute expenditure on foodgrains might have declined throughout the period or increased at a very low rate if not declined [1; 346-9]. But a significant proportion of this absolute expenditure was on the imported foodgrains with food assistance. It was in fact a leakage that did not have any positive effect on domestic food production. In the absence of food assistance, it could increase the demand for foodgrains and their domestic production. In this sense also, food assistance acted as a constraint for agricultural development. Fifthly, some argued that the RWP corrupted people associated with it, especially people involved in its administration and implementation [8; 238]. Such corruption was not very conducive to the development of the economy.

The factors usually believed to be necessary for increasing agricultural production in Bangladesh are irrigation and flood control. Only 10 per cent of RWP fund was allocated to drainage and flood control.

Only 10 per cent of RWP fund was allocated to drainage and flood control projects during the period 1962-1968 whereas 75 per cent was utilized for road construction and the rest of the fund was spent for building social infrastructure [8; 10]. Furthermore, in a sample of FWP projects undertaken in different parts of Bangladesh 24 projects were for road construction, 9 projects were for road-cum-embankment, 3 projects for embankment and 4 projects were for canals and ponds [3]. Thus in both the RWP and FWP road construction was given major attention and flood control and irrigation obtained little importance. Consequently, the RWP and FWP appeared to contribute only marginally to increasing agricultural production.

However, food assistance increased area cropped, production and productivity in the agricultural sector directly through providing drainage, irrigation, flood control embankments, and indirectly through construction of roads and employment of the rural labour forces and landless labourers at minimum cost. It had also some disincentive effects on production.³ It is really difficult to judge whether its positive effects outweighed its negative effects or not in the case of Bangladesh. Its negative effect could be much less significant if the rationing systems distributed subsidized imported foodgrain only to the extremely poor consumers.

II. COMMODITY ASSISTANCE

Commodity assistance in the agricultural sector supported the agricultural development programmes. It financed the imports of agricultural inputs as high yielding variety seeds, fertilizers, pesticides, fuel for irrigation etc. and agricultural machineries such as pumps, tubewells, plant protection equipment, etc. which were supplied to the farmers at subsidized prices throughout the period the rates of subsidy on agricultural inputs were gradually reduced from the mid-seventies. However, about half of the total foreign assistance to agriculture was received in the form of commodity assistance. The amount of commodity assistance spent in the agricultural sector is given in Table 3, Appendix A. Commodity wise breakdown of commodity assistance to the agricultural sector is given in Table 7 Appendix A. It is observed that over time an increasing proportion of total commodity assistance to Bangladesh was directed to agriculture in the post-liberation period. About 69 per cent of it

3 Employment of the rural labour force by the RWP and FWP was not expected to decrease agricultural production, because 20 per cent of the rural labour force was surplus labour. For details, see [7]

was received in the form of fertilizers, 28 per cent as pumps and tubewells and the rest was received in the form of seeds, pesticides and plant protection equipment.

It is true that commodity assistance to the Bangladesh agriculture inputs, culture, through increasing availability of agricultural inputs, accelerated the pace of diffusion of modern HYV-seed-fertilizer water technology and thereby contributed to increasing foodgrain production. Since Bangladesh was heavily dependent on imported inputs, potential foodgrain output was adversely affected in two ways. Firstly, the irregular supply of modern agricultural inputs under commodity assistance may only have caused fluctuations in agricultural production in an ex-post sense, it may also have had dampening effects on the farmers plans to adopt new modern technology and hence adversely affected the agricultural production in ex-ante sense. Secondly, shortage of phosphate and potash fertilizers, which were mostly imported under commodity assistance, imposed a pattern of fertilizer use which was different from the recommended proportions.⁴ But the use of fertilizers in inappropriate proportions is not conducive to the achievement of optimum crop production.

There was marked fluctuations in foodgrain production during the sixties and seventies, negative growth rate being experienced in 1974/75 and 1976/77 [16; 44-7,13; 268, 270]. Natural calamities and weather conditions were the major factors for such fluctuations. To a lesser extent, fluctuations in foodgrain production might be attributable to erratic supply of inputs, particularly fertilizers. The supply of fertilizers fell from 380,000 tons in 1973/74 to 281,000 tons in 1974/75. It rose to 454,000 tons in 1975/76 and again fell to 358,000 tons in 1976/77. Since then it increased gradually having more percentage of targets achieved.

Import was the main source of supply of fertilizers in Bangladesh. More than three-fourths of off-take and approximately two thirds of supply of fertilizers were imported. There are five fertilizer production units in Bangladesh and these were all financed with foreign assistance. Three of them located at Fenchuganj, Ghorashal and Ashuganj have been

4 For example, while it is recommended that nitrogen, phosphate and potash should be applied in the proportions 10:10:5, the proportions in which these were used in Bangladesh in 1979/80 was 10:5:1. The proportions was more unfavourable in the earlier years due to non-availability of phosphate and potash.

producing urea whereas triple super phosphate(TSP) is being produced by tow plants located at Chittagong. Not only the entire requirements of muriate of potash(MP) which is not produced domestically but also a substantial amount of urea and TPS had to be imported by Bangladesh. As a result, about 90 per cent of annual fertilizer imports, on average, was financed with commodity assistance.

Table 1: Targets and Actual Distribution of Fertilizers in Bangladesh : 1973-1980(in 000 tons)

<u>Year</u>	<u>Target</u>	<u>Actual Distribution</u>	<u>Achievement (%)</u>
1973/74	520	380	73
1974/75	589	281	48
1975/76	734	454	62
1976/77	906	358	40
1977/78	1135	600	52
1978/79	800	742	92
1979/80	1000	927	93

Sources: [19; 78,15; XII-13,13; 8].

The fluctuating nature of imports of fertilizers is clearly evident from Table 7 Appendix A and this, in turn, caused fluctuations in total supply of fertilizers. What all these suggest is that fluctuations in foodgrain production in Bangladesh might be attributable to fluctuations in the commodity assistance flowing into the agricultural sector. Uncertain supply of modern inputs might have adversely affected the farmer's plans to adopt the modern technology in cultivation. Unless a steady flow of the modern inputs is assured, farmers may tend to refuse HYV cultivation to avoid risks of losses and failures in agricultural production.

III. PROJECT ASSISTANCE

The agriculture sector received US \$ 146.6 million during the period 1962/63-1977/78 as project assistance (Table 8, Appendix A). This was spent on projects⁵ undertaken by the Agricultural Directorate, Bangladesh Agricultural Development Corporation (BADC), Forest Directorate and Forest Industries Development Corporation (FIDC),

⁵ An account of the projects financed with project assistance in different sectors of the Bangladesh Economy can be obtained from the [11,12].

Fisheries Directorate and Fisheries Development Corporation (FDC) and Livestock Directorate.

During the period the BADC undertook several projects financed by project assistance to increase agricultural production. The main projects of the BADC were (i) procurement and distribution of fertilizers; (ii) multiplication, preservation and distribution of improved seeds; (iii) provision of irrigation facilities through low-lift pumps, deep tube-wells, shallow tube-wells and hand tube-wells; (iv) construction of godowns for fertilizers, etc. Of these projects, the irrigation programmes were very important because the new seed technology had little advantage over the traditional technology without irrigation water. Since 1959 the BADC provided irrigation facilities for Boro cultivation in the winter (dry) season. Low-lift pumps were supplied to farmers through the Thana Irrigation Programmes (TIP) in areas where surface water was available. In 1961 using this method about 110,000 acres were irrigated. It increased to 500,000 acres a year later and over 1,434,322 acres by 1978/79. The consequent increase in Boro production was also impressive. This method irrigated about 40 per cent of the total irrigated land in Bangladesh during the post-liberation period (Table 2). It was the most important among the modern methods of irrigation. Still the traditional methods (country methods) dominated the irrigation system in Bangladesh.

Deep tube-wells were used for irrigation in areas where adequate surface water was not available and/or where the use of surface water for irrigation hampered navigation, fisheries, etc. The first project of deep tube-wells irrigation was undertaken by the East Pakistan Water Development Authority in the early sixties in Thakurgaon. It aimed at irrigating 69,000 acres by sinking 381 deep tube-wells. It cost about \$28 million but after its completion only one-third of the irrigation target was achieved. Consequently, cost per deep tube-well was about \$75,000 whereas the cost of irrigation was \$412 per acre [9; 125]. The high cost irrigation in the deep tube-well project resulted because the project was mainly based on imported equipment pipes, drilling rigs and there was insufficient ground water, a fact overlooked by its feasibility study. At the end of the sixties the Bangladesh Academy for Rural Development

(BARD) at Comilla invented cheaper and smaller deep tube-wells

Table 2 : Percentage of Area Irrigated by Different Methods in Bangladesh : 1970/71--1978/79

Year	Power Pumps		Tube-Wells	Cannals
	Country Methods			
1970/71	36	4	9	51
1971/72	32	3	8	57
1972/73	39	3	8	50
1973/74	44	4	9	43
1974/75	40	7	8	45
1975/76	40	8	7	45
1976/77	41	8	9	42
1977/78	38	9	8	45
1978/79	39	10	7	44

Source [18;194]

suitable for local conditions in Bangladesh. The cost of the Comilla deep tube-well was about \$6000-\$7000 [9; 126]. After liberation the BADC undertook the task of sinking deep tube-wells, which irrigated only about 0.58 million acres by the end of 1979/80.

Shallow tube-wells were sunk in areas where sufficient ground water was not available for irrigation and/or where it was impossible to transport the necessary machinery and equipment for sinking deep tube-wells because of the non-existence of transport system there. By 1979/80 about 10,664 shallow tube-wells were in operation irrigating about 0.13 million acres. However, the area irrigated by tube-wells, both deep and shallow including hand operated, constituted only about 7 per cent of total irrigated land in Bangladesh (Table 2). Its importance in winter irrigation increased in the post-liberation period.

Capacity utilization in the BADC irrigation schemes was as low as 50 per cent, and in some cases it was nearer to 25 per cent in 1972/73-1974/75 [5; 159]. The main reasons for underutilization of irrigation capacity and other agricultural machinery were the defective feasibility studies of sinking tube-wells and fielding power pumps, non-availability of imported spares and components of irrigation equipment and other agricultural machinery, lack of technicians for repair in case of mechanical breakdowns, difficulties of organizing peasants into pump groups,

inappropriate pricing and subsidy policies of the government for the agricultural sector, social tensions surrounding the use of irrigation equipment and agricultural machinery, etc.

The projects of the Agricultural Directorate during both the pre and post-liberation periods indirectly increased the agricultural production. They were research oriented with the main ones being (i) the establishment of the Agricultural University; (ii) the establishment of the Rice Research Institute; (iii) the establishment of the Agricultural Research Institute for development and improvement of agricultural products; and (iv) the strengthening of the agricultural extension services.

Through project assistance the Forest Directorate financed projects like afforestation in the coastal belt and off-shore islands, development of forests suitable for paper pulp, rubber plantations, etc. to augment production. It also undertook some research oriented projects such as the establishment of a Forest Research Institute, and forest research laboratory, the development of a training centre for forest workers, etc. Some other aid financed projects of FIDC were timber extraction, rubber plantations integrated with rubber processing units, etc. No data is available to support whether project assistance increased the area under forest in Bangladesh during the period. In the pre-liberation period timber production increased steadily [16; 73] but declined from 16,758,000 cubic feet in 1969/70 to 15,425,000 cubic feet in 1978/79. During the post-liberation period, production of bamboo, honey and sungrass increased while that of timber, firewood, golpata and Kumbi leaves declined [18; 267]. However, the overall growth of the forest production tended to be negative in the post-liberation years.

The main projects of the Fisheries Directorate designed to increase fish production were (i) reclamation of derelict water areas for fish cultivation; (ii) fishing in the inland water; (iii) mechanization of inland fishing boats and the introduction of off-shore fishing vessels. There were also research and education oriented projects like the establishment of vocational centres for training fishermen, the expansion of fresh water fish research at Chandpur, improvement of fish technology laboratories, expanded research facilities for sea foods, etc. The Fisheries Development Corporation's projects financed with project assistance were mainly concentrated in deep sea-fishing with trawlers, and the marketing and distribution of fish. In this connection project assistance was used to import some trawlers, and to establish fish harbours, freezing plants, wholesale markets, fish landing terminals, fish processing and fish by-product

processing units, a quality control laboratory, a net factory, etc. Some of these projects increased the number of fishing crafts throughout the period and there was also considerable increase in employment in fisheries [18; 266]. Fish production increased from 799,000 tons in 1964/65 to 835,000 tons in 1977/78 showing a very insignificant growth [18; 265]. Of total fish production in Bangladesh, about 89 per cent came from the inland fishing and the rest from the marine (sea) fishing [18; 265]. However, the insignificant growth for the fish production might be attributable to the following factors. Firstly, overfishing of a finite supply of fish in inland water reduced the fish population for further breeding [6; 14]. Secondly, pesticides used in the agricultural production destroyed the fertility of eggs of some types of inland water fish. Thirdly, the surface water irrigation reduced the availability of water for fish cultivation. Finally drainage of submerged land for crop production decreased the area under fish production.

Project assistance in the Livestock Directorate was used to finance mainly the establishment of dairy products, poultry farms at the Sub-division and Thana level, Bureau of Veterinary Research, etc. These projects were undertaken during the period 1962/63 -1977/78. No data is available on livestock and poultry for the pre-liberation period. Both poultry and livestock production increased in 1979/80 compared to 1978/79 [13; 13, 15]. How much was actually the contribution of these aid financed projects to the increased production of the livestock sector is difficult to assess. However, the growth of production in this sector was very slow in the post-liberation period [18; 216].

At the beginning of the post-liberation period the Bangladesh government tried to develop rural institutions "to ensure popular participation in development activities, efficient delivery of supplies and services in rural areas, co-ordination of various departmental activities at the local level and optimum utilization of resources available for development" [19; 133]. The institutions which received project assistance of US\$ 21.3 million during the period 1972/73-1977/78 were the Integrated Rural Development Programmes (IRDP), the Bangladesh Academy for Rural Development (BARD), Co-operatives of Weavers and

Fishermen, and Co-operative Dairy Complex.⁶ Project assistance to the IRDP financed the cost of training farmers and provided credit, modern inputs, and services to them. In the BARD it financed the expansion of physical facilities for research and training. The co-operatives of weavers distributed yarn purchased by project assistance to its members for increasing handloom production. Physical facilities for fish processing and marketing were also provided to fishermen with project assistance to the co-operatives of fishermen. The co-operative dairy complex completed all the pasterurization and chilling plants along with other physical facilities. Thus the project assistance to the rural institutions directly and indirectly encouraged production in the primary sector.

Four major area development projects⁷ were undertaken in rural areas with project assistance. These are (i) Rural Development 1 (RD-1) with an aid commitment of \$23.9 million covering 7 upazilas, 3 in Mymensingh and 4 in Bogra district; (ii) Serajgonj Integrated Rural Development Projects (SIRD) with an aid commitment of \$46.8 million covering 4 upazilas in Serajgonj, (iii) Noakhali Integrated Rural Development Projects (NIRD) with an aid commitment of \$15.5 million covering 3 upazilas of Noakhali district and (iv) South West Rural Development Projects (SWRD) with an aid commitment of \$22.3 millions. The pattern of expenditure in these area development projects are given in Table 9 Appendix A. It is seen that on average, about 48 per cent of total fund for these projects were channelled into activities geared to increasing agricultural production. Creation of economic and social infrastructure attracted about 40 per cent of that fund. Evidently these projects have also limited impact on agricultural production. The flood

⁶ The main rural institutions in Bangladesh were the IRDP, BARD, Thana Training Development Centre, TIP, RWP], Thana Parishad, Union Parishad, conventional co-operatives.

⁷ The amount of project assistance spent on these four area development projects are not included in Table 8 Appendix A. Very recently three more area development projects have been proposed: (i) 100 Thana Intensive Rural Works Programme (100 Thana IRWP), (ii) North West Rural Development Project (NWRDP) and (iii) Rural Development 11 (RD-11) with project assistance committed for them being 20.7 million, 19.2 million and 210 million dollars respectively.

control and water resource sector obtained an allocation of US \$172.4 million of project assistance for the period 1962/63-1977-78 (Table 8, Appendix A).

The main aid financed projects in this sector were

(i) multipurpose projects combining flood controls, irrigation and electricity generation; (ii) flood control; (iii) investigation and survey of flood controls; (iv) irrigation schemes; (v) miscellaneous projects such as services of general consultants, improvement of dredging services, etc. These projects were taken from the Master Plan which was drawn up by the American Firm of International Engineers Inc. The Master Plan contained about 51 major projects aimed at flood protection of 12.1 million acres and irrigation of 7.9 million acres within twenty years. The task of implementation of the Master Plan's projects were entrusted with the East Pakistan Water Development Board in the pre-liberation period and with Bangladesh Water Development Board after liberation. During the pre-liberation period the main purpose of the projects was to provide only flood protection to the cultivable land. By July 1971 only 2.5 million acres had been protected from floods by such projects. After liberation, flood protection projects were integrated with winter irrigation with major emphasis on the latter. The targets for the Bangladesh Water Development Board were fixed at flood protection of 7.5 million acres by 1980 and irrigation of 463,000 acres by the end of 1977/78. But at the end of 1979/80 none of the targets was achieved. In addition, the irrigation cost from the implementation of these projects was as high as \$6000 per acre [9; 122]. These projects were also found to be inappropriate for Bangladesh.⁸ However, the projects through the provision of irrigation facilities, protection from flood damage and improved drainage of the water-logged area facilitated the increased production of agricultural commodities [16; 102-8,13; 230].

Since 1975/76 the Bangladesh Power Development Board also undertook a rural electrification scheme. Electricity in rural areas partially replaced diesel fuel as a source of power for power pumps and tube-wells which were two of the modern means of irrigation. To the extent that project assistance financed the rural electrification scheme in

8 For reasons of failure for some of the Master Plan Projects such as the Ganges-Kobadak Project, the Coastal Embankment Project, etc. see [9; 122-4, 5; 162-4]

Bangladesh, it helped in increase the agricultural productivity and production through the operation of irrigation facilities using electricity.

V. CONCLUSIONS

Foreign assistance in the Bangladesh agriculture was received in the form of food assistance, commodity assistance and project assistance. Food assistance was used for foodgrain imports which generated counterpart fund. A significant part of the counterpart fund financed the RWP and FWP. With the implementation of these programmes, food assistance increased area under foodgrain production, agricultural productivity and agricultural production directly through providing irrigation, drainage, flood control embankments and indirectly through creation of economic and social infrastructure. It also created disincentives for farmers to produce.

The commodity assistance contributed to increasing agricultural productivity and agricultural production through financing the procurement and distribution of agricultural inputs. But fluctuations in the commodity assistance adversely affected the agricultural production through adversely affecting the imports of agricultural inputs and the plans of the farmers to adopt modern HYV seed-fertilizer water technology in agriculture.

Project assistance in the agricultural sector was spent on projects undertaken by the Agricultural Directorate, the BADC, the Forest Directorate, the FIDC, the Fisheries Directorate and Fisheries Deveopment-Corporation and the Livestock Directorate. Various Projects in the rural institutions, rural development, flood control and water resource development sectors were also financed with project assistance. These projects directly or indirectly contribute to the increase of agricultural production.

Some of the projects financed by project assistance were found to be inappropriate in the Bangladesh agriculture in the course of their implementation. Project assistance was very often accompanied with inappropriate technologies also.

Thus it is found that foreign assistance has both positive and negative effect on agricultural production, positive effects apparently being greater than the negative effects. Probably because of this, Ahmad [1] has found a positive relationship between the primary share in GDP and foreign capital inflow as proportions of GDP⁹. This positive relationship, in the light of the above discussion suggests that foreign assistance had a strong positive effects on agricultural production in Bangladesh during the sixties and seventies.

9 TAHmad [1; 423] obtained the following estimated equation with the ordinary least squares (OLS) method using the data from the Bangladesh Economy for the period 1960/61-1979-80:

$$\frac{Q_t^P}{Q} = 0.92 + 0.72 \log y_t - 1.35 \log P_t - 2.20 \frac{M^K}{t} + 0.66 \frac{F_t}{Q} \quad (t=1.53) \quad (t=3.62) \quad a \quad (t=3.92) \quad a \quad (t=2.60) \quad e \\ (t=2.28) \quad b \quad + 0.05 \frac{X_t^f}{Q} \quad (t=0.13)$$

$R^2=0.77$. Durbin-Watson d Statistics = 1.67

Where Q-total output (value added) Q^P =value added in this primary sector, y=per capita real income, P=area cropped (across) MK=imports of capital goods, F=foreign capital inflow, X^f =total exports of goods and services, t=time period, a =significant at the 1 per cent level, b=significant at the 5 per cent level.

Table 1: Availability of Foodgrains and Food Assistance.

Appendix A

Year	Net Availability of Foodgrains (000 tons)	Imports of Foodgrains (000 tons)	Imports of Foodgrains under food assistance (000 tons)	Imports as percentage of Net Availability of food grains	Food Aid Imports as percentage of Net Availability
1972-73	11,636	2,825	1,072	24.3	9.3
1973-74	12,303	1,666	1,305	13.5	10.6
1974-75	11,731	2,558	1,604	21.8	13.7
1975-76	12,816	1,445	1,336	11.3	10.4
1976-77	11,686	765	651	6.7	5.5
1977-78	13,220	1,609	1,315	12.2	9.9
1978-79	13,249	1,147	1,082	8.7	8.2
1979-80	14,149	2,730	1,829	19.3	12.9

Sources: Statistical Yearbook of Bangladesh, Various issues.

Table -2 : Foreign Assistance Channelled Into Agriculture

(Million US dollars)

Year	Food Assistance for RWP	Food Assistance for FWP	Commodity Assistance
1972-73	27.3	-	71.7
1973-74	15.8	-	72.0
1974-75	12.6	-	108.8
1975-76	17.9	47.7	25.9
1976-77	16.0	40.7	45.7
1977-78	13.7	36.7	112.0
1978-79	14.9	49.0	166.7
1979-80	-	46.2	128.0

Sources: Ministry of Planning, Ministry of Agriculture, and Ministry of Local Government and Rural Development (Unpublished Reports)

TABLE 3 : Disbursement of Foreign Assistance in Bangladesh: 1950-1979/80

	(million US dollars/current prices/figures in parentheses are percentage)											
	Food Assistance			Non-Project Assistance			Project Assistance				Foreign Assistance	
	Grants	Loans	Total	Grants	Loans	Total	Grants	Loans	Total	Total	Loans	Grand Total.
1950/69			445.0	263.0 (39.2)	408.0 (60.8)	671.0 (100.0)	56.0 (11.8)	417.0 (88.2)	473.0 (100.0)			1589.0
1972/73	181.6 (99.5)	0.9 (0.5)	182.5 (100.0)	285.2 (98.9)	3.3 (1.1)	288.5 (100.0)	25.5 (31.9)	54.5 (68.1)	80.0 (100.0)	492.3 (89.3)	58.7 (10.7)	551.0 (100.0)
1973/74	111.6 (51.0)	117.1 (49.0)	228.7 (100.0)	41.0 (39.7)	62.3 (60.3)	103.3 (100.0)	65.7 (52.9)	58.6 (47.1)	124.3 (100.0)	218.3 (47.9)	238.0 (52.1)	456.8 (100.0)
1974/75	199.5 (52.0)	182.8 (48.0)	383.3 (100.0)	116.7 (31.1)	259.0 (68.9)	375.7 (100.0)	65.7 (45.5)	78.7 (54.5)	144.4 (100.0)	381.9 (42.3)	520.5 (57.7)	902.4 (100.0)
1975/76	111.8 (35.7)	201.7 (64.8)	313.5 (100.0)	91.1 (25.0)	277.6 (75.0)	368.7 (100.0)	41.1 (33.0)	93.3 (77.0)	124.4 (100.0)	234.0 (29.0)	572.6 (71.0)	806.6 (100.0)
1976/77	77.1 (63.8)	43.8 (36.2)	120.9 (100.0)	123.5 (49.2)	127.4 (50.8)	250.9 (100.0)	48.0 (32.0)	101.6 (68.0)	149.6 (100.0)	248.6 (47.7)	272.8 (52.3)	521.4 (100.0)
1977/78	116.9 (65.7)	61.0 (34.3)	177.9 (100.0)	162.8 (43.5)	211.4 (56.5)	374.2 (100.0)	116.6 (43.4)	152.0 (56.6)	268.6 (100.0)	396.3 (48.4)	424.4 (51.6)	820.7 (100.0)
1978-79	162.1 (90.7)	16.6 (9.3)	178.7 (100.0)	134.6 (28.0)	247.8 (72.0)	482.4 (100.0)	140.8 (38.0)	230.0 (62.0)	370.8 (100.0)	537.5 (52.0)	494.4 (48.0)	1031.9 (100.0)
1979/80	319.4 (85.1)	55.9 (14.9)	375.3 (100.0)	200.7 (51.7)	187.4 (48.3)	388.1 (100.0)	189.5 (40.4)	279.3 (59.6)	468.3 (100.0)	709.8 (57.6)	522.6 (42.4)	1232.2 (100.0)
Total	1280.0 (65.3)	679.8 (34.7)	1959.8 (100.0)	1255.6 (47.7)	1376.2 (52.3)	2631.8 (100.0)	682.9 (39.5)	1048.0 (60.5)	1730.9 (100.0)	3218.5 (50.9)	3104.0 (49.1)	6322.5 (100.0)

Sources: (i) Reports of the Advisory Panels for the Fourth Five Year Plan. Volume 1, 1970, p.279, Table 3; and (ii) BES, 1981, p. 116, Table 2.

Table -4 : Availability And Disbursement of Foreign Assistance In Bangladesh: 1950-1980

(million US \$/current prices)

Period	Food Assistance	Non-Project Assistance	Project Assistance
<u>1950-1969</u>			
Availability (A)	-	-	-
Disbursement (D)	445	671	473
Ratio of (D) to (A) in %			
<u>1971-1972</u>			
Availability (A)	172	294	147
Disbursement (D)	137	138	4
Ratio of (D) to (A) in %	76	47	3
<u>1972-1973</u>			
Availability (A)	331	458	475
Disbursement (D)	183	289	80
Ratio of (D) to (A) in %	55	63	17
<u>1973-1974</u>			
Availability (A)	303	341	619
Disbursement (D)	229	103	124
Ratio of (D) to (A) in %	76	30	20
<u>1974-1975</u>			
Availability (A)	535	658	901
Disbursement (D)	383	376	144
Ratio of (D) to (A) in %			
<u>1975-1976</u>			
Availability (A)	393	641	1115
Disbursement (D)	314	365	124
Ratio of (D) to (A) in %	80	57	11
<u>1976-1977</u>			
Availability (A)	221	580	1281
Disbursement (D)	121	251	150
Ratio of (D) to (A) in %			
<u>1977-78</u>			
Availability (A)	239	732	1763
Disbursement (D)	178	374	269
Ratio of (D) to (A) in %	75	51	15
<u>1978-1979</u>			
Availability (A)	362	981	2384
Disbursement (D)	179	482	371
Ratio of (D) to (A) in %	50	49	16
<u>1979-1980</u>			
Availability (A)	458	789	2644
Disbursement (D)	375	388	469
Ratio of (D) to (A) in %	82	49	18

Sources: Figures for the period 1950-69 are taken from the reports of the Advisory Panels for the Fourth Five Year Plan. Volume 1, 1970, p.279, Table 3, and for the period 1971/72-1979-80 from [13; 115-6].

TABLE -5 : Achievements of Rural Works Programmes in Bangladesh : 1962 - 1968.

	Hard-Surfaced roads (in miles)		Dirt-surfaced roads (in miles)		Embankments (in miles)		Drainage-irrigation canals (in miles)		Acres benefited by columns 5,6,7,8	Community buildings (men-days-in thousands)	Employment (mls)	Total allocation
	New	Repaired	New	Repaired	New	Repaired	New	Re-excavated				
	1	2	3	4	5	6	7	8	9	10	11	12
1962/63	0	0	3600	8700	0	360	1300	450	-	0	10,200 (34,000)	Rs. 100 \$ 31
1963/64	27	37	3308	20882	364	848	168	1147	110,346	2630	50,60 (60,000)	Rs. 200 \$ 42
1964/65	325	755	5454	22956	1132	2522	1081	427	3,266.06	1952	52,929 (41,500)	Rs. 140 \$ 29.4
1965/66	161	730	314	18261	909	1880	318	828	1,236.49	1006	18,264 (32,500)	Rs. 120 \$ 25.2
1966/67	134	313	2391	9907	478	1065	315	1246	2,517.898	801	21,867 (40,500)	Rs. 150 \$ 31.5
Total	647	1835	17830	80706	2883	6675	3182	7944	7,191,403	6389	153,940	Rs. 710 \$ 149
Revised estimates, 1967	-	-	12381	71036	-	-	-	-	2,955,000	3159	208,500	Rs. 215
1967/68	323	355	3095	13580	860	920	849	2022	-	646	19,018	\$ 47.3

Source: [10: 230]

Note: Figures in the parentheses are revised annual estimates of employment.

TABLE- 6: Achievement of Food-For-Works Programmes in Bangladesh: 1974/75-1979/80

Year	No. of Major Project.	Quantity of Wheat utilised (in mds.)	Excavation, re-excavation of rivers canals, tanks, and construction and repair of embankments and roads				Mandays involved (in millions)	Approximately additional yield of paddy (tons)
			canal (miles)	Embank-ments (miles)	Roads (miles)	Tanks (Nos.)		
1974/75	21479 (minor schemes)	857,359	1091	871	2376	11	32,090	
1975/76	1554	5,591,150	1001	774	900	75	487,414	
1976/77	2328	5,964,528	1674	1906	1078	80	355,617	
1977/78	2087	7,380,726	2261	2303	1470	98	393,712	
1978/79	2493	8,061,243	2594	2780	2476	107	398,517	
1979/80	1798	6,153,841	1915	2167	1103	210		

Source: [13; 245] 7

Table -7: Commodity-Wise Breakdown of Commodity Assistance to Agriculture.

Year	Pump and Tubewells	Fertilizers	Seeds	Pesticide and plant protection Equipment	Commodity Assistance to Agriculture	Commodity Assistance to Agriculture as percentage of Total Commodity Assistance
1972-73	57.9	7.7	-	6.1	71.7	24.9
1973-74	25.2	36.6	0.2	10.0	72.0	69.7
1974-75	15.8	88.0	1.9	3.2	108.9	229.0
1975-76	4.7	20.1	1.1	-	25.9	7.0
1977-78	12.5	97.3	2.0	0.3	112.1	29.9
1978-79	13.3	151.4	1.1	0.9	166.7	34.6
1979-80	17.1	107.0	2.9	1.0	128.0	33.0

Sources: Bangladesh Agricultural Development Corporation (Unpublished Reports

(US\$ million/current prices)

TABLE -8: Budgeted Project Assistance in Different Sectors in Bangladesh: 1962/63-1977/78

	Agriculture	Rural Institution	Flood Control & Water Resources	Industry	Power	(a) Electricity	(b) Natural Gas	(c) Technological & Scientific Research	Transport	Communication	Physical Planning & Housing	Education & Training	Health	Population Control & Family Planning	Social Welfare	Manpower Employment and Labour Training	Cyclone Reconstruction
1962/63	6.5	11.5	12.5	11.1	11.1	11.1	11.1	-	-	21.2	-	0.4	4.1	0.5	0.2	-	-
1963/64	7.7	13.3	28.9	9.9	9.9	9.9	9.9	-	-	34.2	-	7.2	-1.3	1.9	0.2	-	0.1
1964/65	12.0	12.6	25.7	16.0	16.0	16.0	16.0	-	-	32.3	-	2.1	1.7	-	-	-	-
1965/66	4.0	15.2	31.9	19.2	19.2	19.2	19.2	-	-	18.9	-	3.0	1.1	2.0	0.4	-	-
1966/67	2.2	9.6	21.3	29.7	29.7	29.7	29.7	-	-	22.8	-	1.8	1.3	1.5	0.3	-	-
1967/68	6.8	6.2	36.0	45.2	45.2	45.2	45.2	-	-	13.2	-	8.6	1.3	1.6	0.2	-	0.1
1968/69	9.8	3.0	36.5	32.8	32.8	32.8	32.8	-	-	14.8	-	7.1	1.8	1.7	0.3	-	0.2
1969/70	19.8	6.4	15.7	25.8	25.8	25.8	25.8	-	-	20.1	-	8.3	2.6	1.6	2.7	-	0.1
1972/73	5.3	0.6	13.6	18.2	11.1	11.1	11.1	-	-	31.7	-	5.5	1.1	0.3	0.8	-	-
1973/74	6.8	0.4	15.4	33.9	24.3	21.6	21.6	2.6	0.1	41.5	5.3	7.7	0.6	0.2	1.4	-	0.4
1974/75	8.3	9.7	17.4	30.7	18.5	17.6	17.6	0.9	-	33.0	4.8	5.8	2.3	1.6	3.7	0.1	-
1975/76	14.8	0.2	11.7	32.6	22.4	20.5	20.5	1.7	0.2	22.1	1.5	4.1	4.8	0.6	4.5	0.3	0.1
1976/77	19.8	1.9	19.7	68.1	30.6	26.5	26.5	3.9	0.2	27.2	4.1	6.4	4.8	1.2	5.2	0.3	5.1
1977/78	23.1	8.5	16.8	32.4	41.4	23.4	23.4	8.8	0.2	66.5	14.6	19.4	8.2	4.3	3.2	0.3	1.2

Sources and Notes: (i) ADP, for the years 1962/63-1969/70, Ministry of Planning, Government of East Pakistan and ADP, for the years 1972/73-1977/78, Ministry of Planning, Govt. of Bangladesh.

(ii) Sectorwise distribution of project assistance is only available from the ADP of Bangladesh. But the figures of ADP are the budgeted figures, but not the actual disbursement figures. However, revised ADP provides the project assistance which is very close to the actual amount disbursed.

Table -9: Pattern of Expenditures in Area Development Projects

Projects	Agricultural Production	Other produc- tive Activities	Economic Infrastructure	Social Services
	(%)	(%)	(%)	(%)
RD-I	55.3	8.9	26.1	9.7
SIRD	68.4	3.6	16.3	11.7
NIRD	27.0	7.5	30.4	35.1
SWRD	39.1	3.5	35.4	22.0
100 thana				
IRWP	35.2	2.5	32.8	29.5
NWRD	43.7	48.4	3.1	4.8
RD-II	72.4	10.5	12.4	4.7

Sources: Rural Development and Institutions Division, Planning Commission
(Unpublished Reports).

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BEHAVIOUR OF OUTPUTS, PRICES AND THE BALANCE OF PAYMENTS IN BANGLADESH

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INTRODUCTION

The post-liberation history of Bangladesh is one of slow output growth, balance of payments disequilibrium and substantial inflation. Real GDP grew at an average annual rate of 3.4 per cent from 1975-76 to 1981-82. The current account deficit has been rising steadily. It amounted to 1.3 per cent of GDP in 1972-73 and rose to 7.3 per cent of GDP in 1981-82. The economy has experienced an average rate of inflation of 19.4 per cent per annum during 1972-73 to 1981-82. The paper develops a model of the economy to analyse the behaviour of these variables within a consistent demand-supply framework. The model contains three sectors — the domestic output sector, the external sector and the monetary sector. The specification of the model is rooted in received economic theory and specific features of the Bangladesh economy.

This paper proceeds as follows: Section 2 describes the structure of the model. Section 3 evaluates the performance of the model. A few counterfactual analyses are conducted in Section 4. Finally, Section 5 summarizes the major conclusions of the exercise.

2. STRUCTURE OF THE MODEL

The model tries to explain the behaviour of outputs, prices and the balance on current account of the economy on the basis of three building blocks—the domestic output sector, the external sector and the monetary sector. In all there are seventeen behavioural equations and fourteen identities in the model. The model has tried to capture, within the limits permitted by data availabilities, what we consider to be the salient characteristics of the Bangladesh economy. The basic features of the model can be summarized as follows:

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(i) The model utilizes a demand-supply framework for the determination of its variables.

(ii) The gross domestic product of the economy is divided into three broad subsectors—agriculture, manufacturing and the rest of the economy which we call services for the sake of convenience. Agricultural output is subdivided into jute and foodgrain while manufacturing output is subdivided into jute manufactures and non-jute manufactures. Jute is treated separately in both agricultural and manufacturing sectors because of its immense importance in the economy.

(iii) The production relations for raw jute (equation (2)) and foodgrain (equation (6)) incorporate the impact of weather conditions to reflect the significant exogeneity in their outputs.

(iv) Sectoral prices are determined by factors specific to particular sectors. The determination of the relative price of foodgrain considers both market (demand-supply) forces and the impact of government intervention variable in the market for foodgrain (equation (7)).

(v) The overwhelming importance of the agricultural sector has been emphasized in the model through its linkages with other sectors. The supply of non-jute raw materials acts as a constraint on non-jute manufacturing output (equation 11) and agricultural income influences the demand for services (equation 12) .

(vi) The interdependence between agriculture and manufacturing is manifest in the jute manufacturing sector's assumed demand for raw jute (equation 3) and the agricultural sectors assumed demand for the jute manufactures (equation 9) .

(vii) Both exports and imports have been disaggregated. Exports have been divided into raw jute equation (4) , jute manufactures (equation 10) and other exports (equation 13) while imports have been divided into foodgrain, intermediate materials (equation 14) and other imports. In the external sector, instead of specifying a separate equation for the foreign exchange constraint, the availability of foreign exchange has been included as a determinant of imports.

(viii) The mechanism assumed for the determination of money supply provides a link between the monetary and the real sectors of the economy by its incorporation of the effect of the external sector changes on the supply of money (equation 29).

(ix) The model provides an explanation of the rate of inflation using an electric approach. Both monetary and structural variables determine the rate of inflation in the economy (equation 15) .

All behavioural equations of the model are expressed in linear form except those where logarithmic form yielded better statistical results in a preliminary investigation. As the model is approximately recursive, the equations of the model are estimated using ordinary least squares except one case where the errors are autocorrelated and hence the Cochrane-Orcutt iterative procedure (CORC) is employed (equation 11). The results of estimating the behavioural equations are presented in Table 1 along with the following statistics—the absolute value of the t-statistic for each regression coefficient (in parenthesis below the corresponding estimated coefficient), the R^2 , the Durbin-Watson statistic (D-W), and the F-statistic. Elasticity values implied by the coefficients evaluated at the sample means are also presented to facilitate a comparison of the effects of various explanatory variables on the dependent variable. As the data set varies from equation to equation the years covered in each equation are indicated and the number of observations used on the estimation (N) is also reported in each case.

The null hypothesis that all coefficients other than the intercept term are zero is rejected at the 1 per cent level of significance using an F-test for each equation. The estimated coefficients are significant at least at the 5 per cent level of significance except those starred which are significant at a higher level of significance.

The estimated results indicate mainly the following:

Raw jute acreage (equation 1) is significantly responsive to the relative price and the relative yield of raw jute and foodgrain with the elasticity of

acreage with respect to the relative price being 0.43 and that with respect to the relative yield being—0.35. The farmers appear to be weakly risk averse as indicated by the low statistical significance of SDPJI.

The respective acreages are the major determinants of the outputs of raw jute and foodgrain (equation 2) and equation 6) . Foodgrain output is also affected by modern inputs like fertilizers and weather conditions. Modern inputs seem to be more important than weather conditions in determining foodgrain output. This finding is somewhat encouraging. In Bangladesh a major component of the agricultural development strategy has been to increase foodgrain production through the provision of complementary modern inputs¹ .

Non-jute manufacturing output (equation 11) is highly dependent on imported intermediate materials. Non-jute manufacturing output also depends on the supply of domestic agricultural non-jute raw materials and other factors whose effects are captured by the time trend variable.

The output (value-added) of services (equation 11) is determined by demand—agricultural and manufacturing income being the income creating factors. The output of jute manufactures (equation 23)) is also determined by demand. But it is mostly external demand, rather than domestic demand, which is important.

The export of raw jute (equation 4) and jute manufactures (equation 10) depend on relative prices and incomes such as the export price of raw jute and jute manufactures, the foreign price of substitutes, world output of jute manufactures, and world real income. Raw jute exports is under real threat from its synthetic substitutes.

1 The dilemma inherent in such a strategy has been clearly brought out by Tarrant [6]. Bangladesh imports foodgrain as well as fertilizers. Its self-sufficiency in foodgrain can thus be replaced by the increasing dependence on the importation of fertilizers either via aid or commercially financed.

Table-- 1: Equations of the Model

Estimated Behavioural Equations			
AJ=1851.24+695.091(PJI/PFI) (-1) -538.184 TYJ (-1)-417			
(5.927)	(6.508)	(2.529)	(1.368)
Elasticity	0.430	-0.354	-0.028
848 SDPJ* - 501.187 DUM1			
	(2.218)		(1)
R ² =.668;D-W=1.544;N=30;F4,25=12.577;1949-50 to 1949-50 to 1981-82			
QJ= 132.989+.490 AJ- 3.115RJ*- 175.873 DUM2* +. 111 (DUM2*AJ)* (2)			
(.991)	(8.137)	(1.361)	(.777) (.895)
Elasticity	.889	-0.026	.042
R ² =.853;D-W=1.927;N=31;F4,25=37.768;1951-52 to 1981-82.			
DJ= 37.255 + 1.044 QJM			
(7.357)	(82.346)		(3)
Elasticity			.907
R ² =.996;D-W=1.890;N=31;F1,29=6780.80;1951-52 to 1981-82.			
XJ= 356.426 - 319.669 (PXJ/PP) + .737 QJMW			
(3.952)	(2.470)		(7.660) (4)
Elasticity	-0.306		.645
R ² =.792;D-W=2.021;N=23;F2,20=38.041;1959-60 to 1981-82.			
PXJ = 33.751 - 0.049 ΔSJ* + .884 PXJ (-1)			
(1.312)	(1.223)	(9.201)	(5)
Elasticity:			
Short run	.0002		
Long run	.002		
R ² =.762;N=30; F2,28=43.168;1951-52 to 1981-82.			
QF= 1966.24 + .544 AF + 5.271 FERT - 66.456 RF			
(1.001)	(6.180)	(4.316)	(4.818) (6)
Elasticity	1.149	.073	-0.051
R ² =.966;D-W=2.164;N=23;F3,19=178.758;1959-60 to 1981-82.			
RPMI = .672- 8.110 (QFN/POP* 1000) + .002 (YC/POP) + 8.007 (GRF/POP*1000)			
(1.298)	(2.449)	(3.098)	(1.972)
Elasticity	-1.197	1.367	.114
+.589SDUM3+.235DUM4			
(5.154)	(3.882)		(7)
R ² =.905;D-W=1.709;N=23;F5,17=32.400;1959-60 to 1981-82.			
GRF=-377.194 + .822 (IF+GSF)			
(1.893)	(7.789)		(8)
Elasticity	1.356		
R ² =.743;D-W=1.795;N=23;F1,21=60.661;1959-60 to 1981-82.			
DJM= 11.212 + .002 YAC -37.839 DUM5			
(.555)	(2.667)	(6.536)	(9)
Elasticity		1.098	
R ² =.718;D-W=2.233; N=23;F2,20 = 25.508; 1959-60 to 1981-82.			
XJM= 139.081- .319 (PXJM/PJMI)+2.462 YWI+.515 XJM(-1)			
(1.516)	(2.077)	(2.356)	(3.401) (10)
Elasticity:			
short run	-0.493	.595	

- long run -1.017 1.227
 $R^2=.831; N=30; F_{3,26}=42.628; 1951-52 \text{ to } 1981-82.$
 $QNJMI=28.252+.389 QNJRI+.012 IR+3.782 T-44.526 DUM1$ (11)
 (2.376) (2.939) (5.638) (9.927) (4.253)
 Elasticity .356 .271 .620
 $R^2=.958; D-W=1.961; N=22; F_{4,17}=95.855; \rho=0.318; 1959-60 \text{ to } 1981-82$
 (1.575)
 $LN YSC=-4.538+1.382 LN(YAC+YMC)-10.619 DUM6+1.005 (DUM6^*)$
 (2.958) (9.275) (2.291) (2.291)
 $LN(YAC+YMC)$ (12)
 $R^2=.958; D-W=1.655; N=23; F_{3,19}=144.409; 1959-60 \text{ to } 1981-82.$
 $LN VXO=23.260 - 3.588 LN REERI$ (13)
 (5.005) (3.413)
 $R^2=.593; D-W=1.483; N=10; F_{1,8}=11.650; 1972-73 \text{ to } 1981-82.$
 $IR=-180.682+.425 (VX/PIRI)+.442(NFER/PIRI)$ (14)
 (.420) (4.914) (8.477)
 Elasticity .623 .458
 $R^2=.795; D-W=1.640; N=23; F_{2,20}=38.824; 1959-60 \text{ to } 1981-82.$
 $P=0.007+.459M^*A-.478Y^*C^*+.395 RPF1+.392 DUM 7$ (15)
 (.228) (1.992) (1.668) (4.762) (6.757)
 $R^2=.922; D-W=2.348; N=20; F_{4,15}=44.110; 1959-60 \text{ to } 1981-82.$
 Other Equations and Identities
 $YMC=1043.98 + 2.596 QJM+24.905 QNJMI$ (16)
 (4.913) (3.508) (16.576)
 Elasticity .206 .637
 $R^2=.997; D-W=2.315; N=8; F_{2,5}=933.807; 1974-75 \text{ to } 1981-82.$
 $QNJRI=.004 YAC$ (17)
 (45.123)
 $R^2=.540; D-W=.809; N=23.$
 $D SJ=QJ-DJ-XJ-LJ$ (18)
 $AF=AT-AJ-AO$ (19)
 $QFN=(1-s)^* QF$ (20)
 $RPFI=(RPFI-RPFI(-1))/RPFI(-1)$ (21)
 $YAC=10^{-3} (.94^*PJ 1972-73^* QJ +.90^* PF 1972-73^* QF) + YACR$ (22)
 $QJM= 1.10XJM$ (23)
 $YC=YAC+YMC+YSC$ (24)
 $YC=(YC-YC(-1))/YC(-1)$ (25)
 $VX=10^{-3} (PXJ^* ER^* XJ + PXJM^* ER^* XJM) + VXO + VXR$ (26)
 $VI= 10^{-3} * PIF^* IF + PIRI^* IR + VIO$ (27)
 $BCA=VX-VI+NSUT$ (28)
 $M= M(-1) + VX - VI + DCB + DCG DBG + DBP + NFER + MR$ (29)
 $MA=0.5(M+M(-1))$ (30)
 $MA=(MA-MA(-1))/MA(-1)$ (31)

The exports of other goods (equation (13)) are highly responsive to the real effective exchange rate. The import of intermediate materials (equation (14)) is significantly responsive to the availabilities of foreign exchange from exports and all other non-export sources.

The relative price of foodgrain (equation (7)) is affected by both supply and demand variables as well as the government intervention variable. The sign of the net government ration distribution of foodgrain seems to indicate that it has failed to exert a depressing effect on the relative price of foodgrain. This does not mean that the net government ration distribution has not served any purpose. The relative price of foodgrain would presumably have been higher in the absence of the market intervention².

The rate of inflation (equation (15)) is affected by the relative price of foodgrain as well as the money supply and real income. Indeed the former structural variable is a more important determinant than the conventional monetary variables.

3. PERFORMANCE OF THE MODEL.

The performance of the model is evaluated by its within sample tracking performance. For this purpose a dynamic³, deterministic⁴ simulation of the model for the period 1975-76 to 1981-82 with all exogenous variables at historical levels is carried out to generate the solution values of the endogenous variables. The solution values of the endogenous variables are then compared with their historical time paths. Two complementary criteria are used for comparing the solution time paths and the historical time paths of the endogenous variables.

2 This failure of the net government ration distribution of foodgrain may not be that detrimental after all. Large scale importation and net government ration distribution of foodgrain have been blamed for depressing domestic foodgrain prices and thus creating a disincentive effect in domestic production in some of the developing countries. See [1] for the Indian case.

3 In dynamic simulation the solution values of the lagged endogenous variables are used in successive solutions except for the starting period when observed values of the corresponding variables are used.

4 In deterministic simulation residuals are set to zero.

(A) EVALUATION OF TRACKING PERFORMANCE BY SUMMARY MEASURES

Two summary measures viz., mean absolute percentage error (MAPE) and root mean square percentage error (RMSPE) are calculated for each variable and the results are presented in Table 2. Judged by these measures the performance of the model is reasonably satisfactory. About 88.5 (84.6) per cent of the variables have MAPE (RMSPE) less than 10 per cent.

Table -2: Summary Measures for Dynamic Simulation of the Model

Endogenous Variables	Mean Absolute Percentage Error	Root Mean Square Percentage Error
1. AJ	5.7	7.8
2. QJ	6.0	6.7
3. DJ	5.0	5.9
4. XJ	6.1	9.0
5. PXJ	9.1	10.2
6. DSJ	48.9	55.3
7. AF	0.3	0.4
8. QF	1.7	1.9
9. RPFJ	3.6	5.1
10. GRF	6.3	8.4
11. QJM	3.6	5.4
12. DJM	13.4	17.4
13. XJM	2.6	3.9
14. QNJMI	3.5	3.9
15. YAC	1.3	1.6
16. YMC	2.4	2.6
17. YSC	3.0	4.0
18. YC	1.2	1.5
19. VX	2.5	3.0
20. IR	3.9	6.9
21. VI	1.4	2.5
22. BCA	7.8	9.7
23. M	4.4	5.2
24. MA	3.8	4.5
25. P	20.8	33.8
26. QNJRI	5.1	7.2

One exception is change in stocks of raw jute, which has large errors. One possible reason may be that small errors in output, domestic demand and exports accumulate to give large errors in the stock variable. It may also be due to its switching between negative and positive values. It may be pointed out that when the observed values of the endogenous variables are very small or switch between negative and positive values, a small simulation error can be translated into a large MAPE or RMSPE simply because the observed value on which percentage error is calculated is very close to zero.² Another exception is the rate of inflation variable. Large errors in this variable may be due to both to its switching of sign and to its small absolute values.

(B) EVALUATION OF TRACKING PERFORMANCE BY TURNING POINTS

In order to evaluate the model by its ability to correctly predict turning points historical and simulated values of a selected group of 10 variables viz., AJ, QJ, XJ, QF, RPFI, QJM, QNJMI, YC, BDA and P, are plotted. The plots of these variables are self-explanatory. In general it can be said that the cyclical pattern of the variables are reasonably well captured by the model. However, in some of these variables, viz., AJ, QJ, XJ, QF, RPFI and P, the amplitude of fluctuations is less pronounced in simulation than in historical time paths of the variables. This implies that more stability is implicit in the model than exists in the real economy.

From the above discussion we can conclude that the tracking performance of the model is reasonably good during the period 1975-76 to 1981-82. The model can therefore be put to use.

4. COUNTER-FACTUAL ANALYSIS

Five counter-factual analyses are conducted here. Four of them involve exogenous variables and the fifth one involves a potential policy variable. The first relates to weather conditions in the one year of inadequate rainfall. The other estimates the effects of the shocks beginning in the initial year of the simulations. The following experiments are conducted one at a time.

(a) Weather conditions (RF) in 1979-80 are assumed to be normal for foodgrain output.

(b) A one-shot increase is assumed to occur in both the export price of jute manufactures and the price of their competing world products (PXJM/PJMI) in 1975-76.

(c) Foreign income (YWI) is assumed to have a one-shot increase in 1975-76.

(d) Foreign exchange receipts from net non-merchandise exports are assumed to have a one-shot increase in 1975-76.

(e) It is assumed that government measures ensure a jute/foodgrain price ratio (PJI/PFI) of 1.25 in every year since 1975-76. This implies an increase in the ratio compared to what actually prevailed during the simulation period except in 1978-79.

The impact of each change is evaluated by calculating the percentage difference between the shocked run and the corresponding control run simulation values of the relevant variables (calculated as: (shocked run-control run)/ shocked run). In the case of change of a variable from a negative value in the control run to a negative value in the shocked run, the difference is divided by the absolute value in the shocked run in order to make the change readily comprehensible. It will be seen in some of the experiments that the percentage changes in the rate of inflation and/or change in the stocks of raw jute are massive. They happen mostly because of small values of the variables and switching negative and positive values. As before, all simulations are dynamic and deterministic.

(A) NORMAL WEATHER CONDITIONS (RF)

The economy is vulnerable to shocks generated by weather conditions. In the simulation period 1979-80 was a bad year from this point of view. Drought in that year caused a drop in per capita foodgrain production and a sharp increase in the relative price of foodgrain. In this experiment we investigate the question: What would have happened to the macro-economy if weather conditions had been normal (i.e. RF = 0) in

1979-80. Table 3 illustrates the result of this experiment. Since the model does not allow any lagged effect of this change on the relevant variables, only the effects for 1979-80 are presented here. Output of foodgrain would

Table-3: Impact of Normal Weather Conditions, 1979-80

Per cent difference between shocked and control run simulations

QF	DJM	QNJMI	YAC	YMC	YSC	YC	RPI	P.	QNJRI
3.3	4.5	2.0	2.8	1.4	6.0	3.9	1.6	-93.6	2.8

have been higher by 3.3 per cent, output of non-jute agricultural raw materials by 2.8 per cent, and non-jute manufacturing output by 2.0 per cent. Agricultural income would have been higher by 2.8 per cent and manufacturing income by 1.4 per cent. Increases in these two variables would have led to a 6.0 per cent increase in services income—which is assumed to be completely demand determined. The combined effect of the increases in the sectoral components of GDP would have resulted in a 3.9 per cent increase in its level. However, this increase in GDP is possibly an overestimate – arising largely from the demand-driven nature of services income. This is somewhat indicated by the behaviour of the relative price of foodgrain. The relative price of foodgrain increases instead of declining. This counterintuitive result occurs because of the differential impact of normal weather conditions on foodgrain output and real income. While foodgrain output increase causing a downward pressure on its price, real income increases through a multiplier effect by a greater amount to cause an upward pressure on price. The net result is a slight increase in the relative price of foodgrain. Despite this the effect of better weather conditions on the rate of inflation is, as expected, strongly negative.

(B) SIMULTANEOUS INCREASE IN THE DOLLAR PRICES OF EXPORTS OF JUTE MANUFACTURES AND THEIR COMPETING PRODUCTS (PXJM/PJMI)

Deterioration in the terms of trade has been held partly responsible for the recent balance of payments difficulties of Bangladesh. Here a hypothetical 10 per cent increase is assumed to occur in 1975-76 in both PXJM and PJMI so that their ratio remains unchanged. The result of this experiment is discussed below.

Table-4: Impact of the Simultaneous Increases in PXJM and PJMI, 1975-76

Per cent differences between shocked and control run simulations										
VX	IR	VI	BCA	QNJMI	YMC	YSC	YC	M	RPI	P
5.6	1.7	0.7	1.5	0.5	0.3	0.1	0.1	2.1	0.1	2.8

Since as stated above, the model does not allow any lagged effect of this change on the relevant variables, only the effects for 1975-76 are

presented here. The shock does not affect the quantity of exports of jute manufactures. However, it affects the level of export earnings and thus ensues other changes in the economy. Export earnings increase by 5.6 per cent which lead to an increase in the volume of imported intermediate materials by 1.7 per cent. The latter change causes an increase in the imports by 0.7 per cent. The net effect of these changes is an improvement in the balance on current account.

The increased flow of the imported intermediate materials leads to an expansion of the production of non-jute manufacturing goods. This raises manufacturing income which creates additional demand for services leading to an increase in services income. The resultant effect is an increase in the level of GDP by 0.1 per cent.

The increased income creates additional demand for foodgrain and so the relative price of foodgrain rises. Money supply rises by 2.1 per cent because export earnings increase more than import payments. The combined effect of the changes in GDP, RPF1 and M leads to an increase in the rate of inflation by 2.8 per cent.

(C) INCREASE IN FOREIGN INCOME (YWI)

Weak external demand for exports has been held partly responsible for the weak export performance of the economy. In this experiment the index of foreign income is assumed to increase by 11.5 units in 1975-76. The magnitude of the shock represents about 10 per cent of the mean value of the variable in the simulation period. The result of this experiment is discussed below. One general observation about the results is that the effects on most endogenous variables dampen with time implying local stability in the model.

The export of jute manufactures increases by 5.9 per cent in the first year. The stimulus to exports continues through the period but it dampens with the passage of time. The effects on the output of jute manufactures and the domestic demand for raw jute follow a similar pattern. The effect on change in stocks of raw jute is negative. This pushes the export price of raw jute up which, assuming no change in competitors' prices (perhaps too pessimistic an assumption), lowers the quantity of raw jute exports.

Table-5: Impact of the Increase in Foreign Income, 1975-76 Per cent difference between shocked and control run simulations

Endogenous							
Variables	1975-76	1976-77	1977-78	1978-79	1979-80	1980-81	1981-82
XJM	5.88	2.81	1.37	0.83	0.41	0.20	0.10
QJM	5.88	2.81	1.37	0.83	0.41	0.20	0.10
DJ	5.51	2.65	1.29	0.78	0.98	0.19	0.09
ΔSJ	-29.46	-17.88	-139.18	-1.83	-0.41	-0.94	0.00
PXJ	0.43	0.60	0.64	0.65	0.63	0.57	0.49
XJ	-0.23	-0.29	-0.32	-0.29	-0.24	-0.21	-0.18
VX	3.64	1.24	0.73	0.50	0.27	0.11	0.09
IR	1.12	0.58	0.31	0.14	0.09	0.07	0.03
VI	0.43	0.35	0.27	0.08	0.04	0.02	0.01
BCA	0.98	5.35	0.45	0.47	0.17	0.10	0.05
QNJMI	0.29	0.14	0.08	0.04	0.03	0.02	0.01
YMC	1.49	0.74	0.37	0.18	0.10	0.05	0.03
YSC	0.58	0.52	0.15	0.08	0.04	0.02	0.01
YC	0.37	0.19	0.09	0.05	0.03	0.01	0.01
YCO	3.20	-7.65	-1.26	-0.97	-4.76	-0.03	-0.01
RPFI	0.42	0.25	0.11	0.06	0.03	0.02	0.01
-RPFI	0.90	-1.17	-0.74	-2.61	-0.82	-0.08	-0.09
M	1.32	1.65	1.69	1.61	1.51	1.17	1.24
MA	0.68	1.50	1.67	1.65	1.56	1.31	1.20
MA	21.15	6.30	1.03	0.18	-0.68	-1.18	-0.94
P	1.32	286.27	0.53	-0.21	-0.58	-3.54	-0.64

The combined effect of increase in export of jute manufactures and the opposing changes in the price and volume of raw jute exports result in an increase in the value of exports by 3.6 per cent in the first year. The effect gradually dampens through the period. Similar effects occur in the case of the volume of import of intermediate materials and the value of imports. The balance on current account improves (i.e., the deficit falls in absolute magnitude) as a result of these changes.

The enhanced imports of intermediate materials permit an expansion in the production of non-jute manufactures. This generates an increase in manufacturing income and finally GDP increases. All these changes dampen with time.

The demand creating effect of the increase in GDP is to put upward pressure on the relative price of foodgrain. Money supply increases because of the differential impact of the change on the values of exports and imports. The rate of inflation reflects the joint effect of the changes in money supply, real income and the relative price of foodgrain. The result is an increase in the rate of inflation in the first three years and thereafter a continuing depressing effect on the rate of inflation. (The absolute magnitude of the rate of price deceleration decreases in the first two years).

(D) INCREASE IN NET FOREIGN EXCHANGE RECEIPTS (NFER)

It has been argued by Papanek [5:233] that an increased flow of aid makes possible expansionary stabilization. In order to examine this possibility, it is assumed here that the foreign exchange receipts from net non-merchandise exports increase by Tk. 150 million in 1975-76. Table 6-6 illustrates the results of this experiment. Again only the effects for 1975-76 are presented here.

Table-6: Impact of the change in Net Foreign Exchange Receipts

Per cent difference between shocked run and control run simulations

IR	VI	BCA	ONJMI	YMC	YSC	YC	M	MA	M.A	RPFI	P
0.24	0.09	-0.15	0.06	0.04	0.0	0.0	1.76	0.92	26.53	.01	0.02

The imports of intermediate materials rise by 0.24 per cent and the value of imports by 0.09 per cent. The balance on current account worsens, i.e., the deficit expands by 0.15 per cent. As imported intermediate materials are crucial for non-jute manufacturing output, the increase in the former's volume boosts the production of the latter. Manufacturing income rises and ultimately GDP rises by 0.01 per cent.

Increased income leads to higher demand for foodgrain. So the relative price of foodgrain rises by 0.01 per cent. The negative impact of increased imports and the positive impact of increased foreign exchange receipts on the money supply combine to lead to an increase in its stock. The combined effect of the changes in the money supply, real income and the relative price of foodgrain is to increase the rate of inflation (lower the rate of price deceleration) in the economy. Thus increased flow of aid raises domestic output as argued by Papanek. But contrary to his

argument, the rate of inflation accelerates. One possible explanation for the difference between Papanek and our results may lie in the assumed relationship between net foreign exchange receipts and imports on the one hand and on the other hand, between these two variables and money supply. An increased flow of net foreign exchange receipts will presumably increase the imports of other goods and so the value of imports will be larger than that pictured here. Consequently, its effect on money supply will be less pronounced than predicted by the model. But these linkages are not incorporated in the model.

(E) PRICE SUPPORT: MAINTAINING EQUIPROFITABLE JUTE/FOODGRAIN PRICE RATIO

A secular decline and sharp year to year fluctuations in jute acreage are held largely responsible for the instability in and erosion of raw jute exports. As the relative price of raw jute and foodgrain is the major determinant of jute acreage, it is probable that maintaining an equiprofitable jute/foodgrain price ratio would bring a measure of stability in the market. An equiprofitable jute/foodgrain price ratio is the price ratio at which the farmers would be indifferent between the growing of these two competing crops on land equally suitable for each crop. This price ratio has been estimated to be 1.25 by Mustafa (1976). In this experiment it is assumed that government policy measures ensure an unchanging jute/foodgrain price ratio of 1.25 in the market. The impact of this change is estimated from 1976-77 since in this model the variable affects raw jute acreage and thus other variables with a one year lag.

In the simulation period the jute/foodgrain price ratio that actually prevailed in the market has been lower than 1.25 in each year except 1978-79. So the effect of this change would be to increase raw jute acreage in all years except in 1979-80. The change in jute acreage entails a similar change in jute output and opposite change in foodgrain acreage and output. The effect of this measure on changes in stocks of raw jute is generally positive except in 1979-80. Higher stocks of raw jute depress its export price and raise the level of exports throughout the period. The net effect of the opposite movements in raw jute and foodgrain outputs is to depress agricultural income except in 1979-80 and the domestic demand for jute manufactures and the index of output of non-jute raw materials move in consonance with it.

The combined effect of a fall in export price and the consequent rise in exports is to lower the level of export – earnings a case of inelastic

demand. The volume of imported intermediate materials and the total value of imports both fall. But the fall in export earnings is greater than that in import payments. Consequently the current account deficit expands.

Table-7: Impact of maintaining Equiprofitable Jute/Foodgrain Price Ratio
Per cent difference between shocked and control run simulations

Endogenous						
Variable	1976-77	1977-78	1978-79	1979-80	1980-81	1981-82
AJ	20.6	11.7	1.5	-2.6	14.1	22.3
QJ	21.4	12.5	1.5	-2.7	14.9	25.3
PXJ	-3.5	-5.2	-5.0	-4.1	-6.4	-10.2
XJ	1.6	2.4	2.0	1.5	2.1	3.2
ΔSJ	141.6	98.5	5.0	-10.8	143.2	314.4
AF	-1.7	-1.0	-0.1	0.2	-1.0	-1.7
QF	-1.9	-1.0	-0.1	0.2	-1.0	-1.8
DJM	-0.8	-0.4	-0.05	0.08	-0.5	-0.8
QNJMI	-0.2	-0.1	-0.1	-0.02	-0.1	-0.2
YAC	-0.5	-0.3	-0.03	0.05	-0.3	-0.5
YMC	-0.1	-0.1	-0.04	-0.01	-0.1	-0.1
YSC	-1.0	-0.6	-0.1	0.1	-0.6	-1.0
YC	-0.6	-0.4	-0.1	0.1	-0.4	-0.6
VX	-0.5	-0.6	-0.6	-0.4	-0.4	-1.0
IR	-0.2	-0.3	-0.2	-0.1	-0.2	-0.3
VI	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
BCA	-1.9	-0.4	-0.5	-0.2	-0.3	-0.5
M	-0.2	-0.4	-0.6	-0.7	-0.7	-1.1
MA	-0.1	-0.3	-0.5	-0.6	-0.7	-0.9
RRFI	1.1	0.5	0.1	0.1	0.1	0.8
P	6676.5	-4.3	-7.2	-2.1	9.3	1.3
QNJRI	-0.5	-0.3	-0.03	0.05	-0.3	0.3

While the fall in exports lowers the money supply, the fall in imports raises it. Their combined effect is to reduce the stock of money.

The declines in the output of non-jute agricultural raw materials and the volume of imported intermediate materials lead to a fall in the output of non-jute manufactured goods; manufacturing income falls as a consequence. However, the negative impact on manufacturing income may be an overestimate. It is argued that in Bangladesh the domestic jute mills sometimes cannot raise their output due to the short supply of raw jute. Increased raw jute output may relax these supply difficulties and thus may have a positive effect on the output of jute manufactures and thus on

manufacturing income. But the model does not incorporate any mechanism for capturing such an effect.

Declines in agricultural and manufacturing incomes reduce the demand for services and so income from services falls except in 1979-80. The declines in all the components of real GDP lead to its fall except in 1979-80. In 1979-80, the positive effect on agricultural income and the negative effect on manufacturing income combine to have a net positive effect on both income from services and real GDP.

The joint effect of the decrease in the output of foodgrain and the decrease in real GDP except in 1979-80 is to raise the relative price of foodgrain (i.e. price of foodgrain deflated by the implicit manufacturing income deflator) in all years. The effect on the rate of inflation reflects a combination of the effects of reduced money supply, reduced income except in 1979-80 and increased relative price of foodgrain. The net effect on the rate of inflation is positive in 1976-77, negative for the next three years and then positive in the last two years.

As emphasized in the beginning of this section the raw jute/foodgrain price ratio exceeded that of 1.25 only in 1978-79 in the simulation period. The lagged effect of maintaining a raw jute/foodgrain price ratio of 1.25 would have thus involved a decline in raw jute acreage and output in 1979-80.

The impact of the change on stability in the raw jute market is mixed. While variability (as measured by the standard deviation) of jute acreage and export price increases, that of jute output, jute exports and export earnings falls with the introduction of the change.

5. CONCLUSIONS

In order to study the behaviour of outputs, prices and the balance on current account within a consistent framework the present study develops, estimates and tests a macroeconomic model of the Bangladesh economy and undertakes some counterfactual analyses. The exercise leads us to draw the following major conclusions about the behaviour of the variables under study.

(a) ROLE OF THE AGRICULTURAL SECTOR

The behaviour of the macro variables under study crucially depends on the performance of the agricultural sector specially the foodgrain subsector. This is highlighted by the weather shock experiment as well as the hypothesized government price support for raw jute experiment. Favourable weather conditions improve the output performance and lower the rate of inflation in the economy. Movement in the relative price of raw jute and foodgrain affects the allocation of acreage between these competing crops, composition of agricultural income, aggregate income, the real price of foodgrain, the balance on current account and finally the rate of inflation in the economy.

(b) ROLE OF THE EXTERNAL SECTOR

Externally generated shocks are likely to pervade all important macro variables of the economy. This is evidenced by the results of the counterfactual experiments (b) to (d). An increase in the export price of jute manufactures (in U.S. dollars) with a simultaneous increase in the world price of its substitutes has a favourable impact on real GDP and it improves the balance on current account. However, it generates inflationary pressure in the economy. A one-shot increase in foreign income also has favourable effects on real GDP and balance on current account. The shock accelerates inflationary pressure in the first three years of the introduction of the shock and then decelerates it in the latter years. The increased flow of net foreign exchange receipts has an unambiguously positive impact on real income. But it expands the current account deficits and accelerates the rate of inflation in the economy.

The above results serve to indicate the difficulty in simultaneously achieving higher output growth, improved balance on current account and price stability in the economy. Specially interesting are the effects of the shocks on real GDP and the rate of inflation. The favourable external shocks which raise the level of real GDP seem to invariably accentuate the rate of inflation in the economy.

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Hossain : Balance of Payments

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APPENDIX

Definitions of Variables

NAME OF VARIABLE	DEFINITION	UNIT
<u>Endogenous Variables</u>		
AF	Foodgrain acreage	1000 acres
AJ	Raw jute acreage	1000 acres
BCA	Balance on current account	ml. takas
DJ	Domestic demand for raw jute	1000 m.t.
DJM	Domestic demand for jute manufactures	1000 m.t.
GRF	Net government ration distribution of foodgrain	1000 m.t.
IR	Import of intermediate materials prices	ml. takas in 1972-73
M	Money supply on last Friday of June (currency plus demand deposits)	ml. takas
MA	Average money supply	ml. takas
MA	Rate of change of average money supply	rate of change
P	Rate of inflation	rate of change
PXJ	Export price of raw jute	U.S. \$ per m.t.
QF	Output of foodgrain (rice and wheat)	1000 m.t.
QFN	Net output of foodgrain after 10% deductions for seed, feed and wastage	1000 m.t.
QJ	Output of raw jute	1000 m.t.
QJM	Output of jute manufactures	1000 m.t.
QNJMI	Index of non-jute manufacturing output	index (1972-73= 100)
QNJRI	Index of non-jute agricultural raw materials output	index (1972-73= 100)
RPFI	Relative price of foodgrain	ratio of indices
R PFI	Rate of change of relative price of foodgrain	rate of change
Δ SJ	Change of stocks of raw jute	1000 m.t.

Hossain : Balance of Payments

NAME OF VARIABLE	DEFINITION	UNIT
VI	Value of merchandise imports	ml. takas
VX	Value of merchandise exports	ml. takas
VXO	Value of exports of other (non-jute) goods	ml. takas
XJ	Export of jute manufactures	1000 m.t.
YAC	Gross domestic product in agriculture	ml. takas in 1972-73 prices
YC	Gross domestic product	ml. takas in 1972-73 prices
YC	Rate of change of GDP	rate of change
YMC	GDP in manufacturing sector	ml. takas in 1972-73 prices
YSC	GDP in services sector	ml. takas in 1972-73 prices
<u>Exogenous and Lagged Endogenous Variables</u>		
AO	Area under crops other than raw jute and foodgrain	1000 acres
AT	Total cropped area	1000 acres
Δ BG	Change in scheduled bank advances to government and public sector	ml. takas
Δ BP	Change in scheduled bank credit to the private sector	ml. takas
Δ CB	Change in Bangladesh Bank's net credit to scheduled Banks	ml. takas
Δ CG	Change in Bangladesh Bank's net credit to government and public sector	ml. takas
ER	Exchange rate	taka per U.S. \$
FERT	Amount of distribution of fertilizers	1000 nutrient tons
IF	Import of foodgrain	1000 m.t.
GSF	Government stocks of foodgrain	1000 m.t.
IJ	Loss of raw jute due to fire, etc.	1000 m.t.
M(-1)	Lagged money supply	
MR	Residual in the money supply identity	ml. takas
NFER	Net non-merchandise foreign exchange receipts, i.e., it includes net services and income,	ml. takas

NAME OF VARIABLE	DEFINITION	UNIT
	net unrequired transfers, net short and long term capital flows (official and private) and errors and omissions	
NSUT	Net services and income and unrequited transfers	ml. takas
PIF (PJI/PFI) (-1)	Price of import of foodgrain Relative price of raw jute and foodgrain in the preceding year	taka per m.t. ratio of indices
PIRI	Unit price index of imported intermediate materials in taka	index (1972-73=100)
POP	Population	ml. per year
PJMI	Unit price index of Indian jute manufactures in U S \$	index (1972- 73=100)
PP	Price of polypropylene resin in the U.S.	U.S. \$ Per m t.
PXJM	Price of export of jute manufactures (F.O.B. Chittagong /Chalna)	U.S. \$ per m.t.
PXJ (-1)	Lagged price of export of raw jute	
QJMW	Output of jute manufactures in West European countries	1000 m.t.
REERI	Real effective exchange rate (price of taka)	index(1972-73=100)
RF	Weather conditions pertaining to foodgrain production, measured as absolute deviation of actual from normal rainfall during April-September.	inches
RJ	Weather conditions pertaining to raw jute production, measured as absolute deviation of actual from normal rainfall during April-September	inches

Hossain : Balance of Payments

NAME OF VARIABLE	DEFINITION	UNIT
SDPJI	Measure of risk aversion, measured as the last three year's standard deviation of price of raw jute at growers' level	
VXR	Residual in value of export identity	ml. takas
VIO	Value of imports other than foodgrain and intermediate materials imports	ml. takas
T	Index of time, 1951-52=1 and therefrom increases by 1 each year	
TYJ(-1)	Lagged relative yield of raw jute (yield of raw jute per acre divided by yield of foodgrain per acre)	ratio
XJM(-1)	Lagged export of jute manufactures	1000 m.t.
YACR	Residual in agricultural identity prices	ml. takas in 1972-73
YWI	Index of income of important trading partners	index(1972-73 =100)
DUM1	Dummy variable, 1971-72=	1 and zero otherwise
DUM2	Dummy variable, 1974-75 to 1981-82= otherwise	1 and zero
DUM3	Dummy variable, 1974-75=	1 and zero otherwise
DUM4	Dummy variable, 1973-74 to 1981-82= otherwise	1 and zero
DUM5	Dummy variable, 1971-72 to 1981-82= otherwise	1 and zero
DUM6	Dummy variable, 1975-76 to 1981-82= otherwise	1 and zero
DUM7	Dummy variable, 1972-73 to 1974-75= otherwise	1 and zero

ml. = million

m.t. = metric ton

TRANSNATIONAL CORPORATIONS FROM ASIAN AND PACIFIC DEVELOPING ECONOMIES IN BANGLADESH

MUZAFFER AHMAD *

1. OVERVIEW OF FOREIGN DIRECT INVESTMENT AND TRANSNATIONAL CORPORATIONS' PARTICIPATION

A. The Economy of Bangladesh : Some Salient Features

Bangladesh is one of the poorest economies of the world on the basis of GNP per capita, with only Ethiopia having lower per capita income (World Bank, 1986). It supports a population of 98.1 million in 144 thousand square kilometer area [1]. As would be expected, the economy is primarily agricultural, nearly half of its GDP comes from this sector. The contribution of manufacturing is about one-tenth, and that of large and medium scale only about one-twentieth, that of trade about one-twelfth, of owner-occupied housing one-fourteenth, of transport and communication one-sixteenth, and of construction and public administration about one-twentieth each. While GDP grew at 5 per cent per annum during 1975-84, agriculture grew at 3.1 per cent. Industry (including manufacturing, construction, utilities and transport and communication) at 7.6 per cent and services (including Banking and Insurance, Housing, Public Administration and Others) at 7.1 per cent (World Bank, 1986) [2].

B. Foreign Direct Investment

Foreign direct investment refers to investment inequity capital, however small. This has generally been more than 50 per cent for TNC from developing countries and more than 10 per cent for Asian TNCs. There are a few exceptions. Foreign investment in Bangladesh has three main elements. These are (a) capital brought in, (b) capital equipment brought in, and (c) re-invested earnings. Balance of payments estimates of private foreign investments relate only to (a) because of the data

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availability with the banking system. Further the records of Exchange Control Department of Bangladesh Bank is neither systematic nor adequate. Fortunately, statistics department of Bangladesh Bank conducts an annual survey to supplement this information. But like all such publications, the data available lag behind by a few years. The survey for 1981 and 1982 covers 51 manufacturing units and 53 services, agriculture and other sectoral units.

Table-1: Direct Foreign Private Investment in Bangladesh, 1977 -82.

	1977	1978	1979	1980	1981	1982
Cash Capital	15.863 (52.3)	10.473 (23.2)	30.389 (40.8)	14.087 (20.7)	27.169 (26.3)	14.912 (14.6)
Capital Equipment	0.187	1.052	11.094	0.007	5.031	0.878
Reinvested Savings	14.252 (47.0)	33.540 (74.4)	32.930 (44.3)	54.072 (79.3)	71.072 (68.8)	86.558 (84.6)
TOTAL	30.032	45.066	74.413	68.166	103.254	102.348

Source: Bangladesh Bank, Department of Statistics.

It is evident from the above table reinvested earnings is the major source of foreign private investment, while capital equipment brought in is still not a significant element in the structure of private foreign direct investment (FDI). However, at current prices total FDI has been increasing, though cash capital brought in has shown wide fluctuations.

C. Major Sources of FDI

The major source of FDI has been UK and importance of USA has increased overtime as can be seen from the table below. Of the other developed countries Japan and France are of mentionable importance. Of the developing countries the only important source so far has been India. However, further investigation in relation to the three elements showed a somewhat different picture.

Table-2 : Major Sources of Foreign Direct Investment.

(Taka in Million)

Country	1977	1978	1979	1980	1981	1982
U.K.	11.183	20.494	14.746	7.249	26.610	24.595
U.S.A.	4.682	8.839	26.196	24.802	32.321	36.800
West Germany	.586	.034	.831	1.454	2.363	1.869
Japan	3.002	3.145	4.221	4.014	4.676	6.639
France	3.705	5.347	6.089	3.761	7.616	4.788
Canada	6.241	--	--	--	--	--
Norway and Denmark	--	--	--	--	.100	--
Total Developed	29.399	37.859	52.083	41.330	73.686	74.691
India	.903	--	2.112	5.025	3.685	4.564
Pakistan	--	--	--	--	3.100	--
Hong Kong	--	--	.900	--	--	--
Singapore	--	--	--	--	--	--
Total Developing	.903	--	3.012	5.025	6.785	4.564
Others (Non-specified)	-	7.206	19.318	21.811	27.783	23.093
TOTAL	30.302	45.065	74.413	68.166	103.254	1102.348

Source: Department of Statistics, Bangladesh Bank.

As mentioned above much of FDI is related to reinvested earnings. In respect of cash capital, the sources seem to be limited to U.K., U.S.A., West Germany, Japan and France. From Pakistan, there was a cash capital inflow of Tk. 3.1 million in 1981. In terms of capital equipment the important sources are U.K. and U.S.A. From Hong Kong there was an investment in terms of capital equipment valued at Tk. 0.9 million in 1979. From unspecified other sources such investment occurred in 1979 and 1981 to the extent of Tk. 7.96 million and 2.313 million respectively. In terms of reinvested earnings, for historical reasons, U.K., U.S.A. and India remain most important. The unspecified countries together have also gained importance in this respect. The German companies have been a small but steady source.

D. Sectoral and Industrial Distribution of Fdi

It will be seen from the table below that commerce has been the most consistent area of foreign direct investment, more so in terms of cash capital flow as well as reinvested earnings. The FDI in manufacturing is not only discontinuous but also largely contingent on reinvested earnings.

The Miscellaneous services sector is another noticeable area for cash DFI.

Table-3 : Flow of FDI into Bangladesh by Economic groups

(Taka in Million)

	1977	1978	1979	1980	1981	1982
Agriculture:						
Cash	--	--	--	--	--	--
Equipment	--	.965	.022	--	.692	.292
Reinvestment	--	--	--	--	--	--
Manufacturing:						
Cash	5.184	--	12.574	--	4.531	--
Equipment	.135	--	7.960	--	2.313	--
Reinvestment	8.391	18.583	10.459	13.805	31.057	25.447
Construction:						
Cash	158	--	--	--	--	--
Equipment	--	--	--	--	--	--
Reinvestment	550	.902	--	--	--	.158
Commerce:						
Cash	4.018	2.112	5.357	6.542	17.450	8.937
Equipment	--	.087	2.256	.007	2.026	1.170
Reinvestment	2.072	13.999	22.936	40.305	48.755	60.589
Transport, Storage, & Communication:						
Cash	--	--	--	--	--	--
Equipment	--	--	--	--	--	--
Reinvestment	.006	.005	.004	.456	.219	--
Miscellaneous:						
Cash	6.503	8.361	12.458	7.545	5.182	5.975
Equipment	.052	--	.900	--	--	--
Reinvestment	3.789	.403	.432	.042	.786	.303
TOTAL :						
CASH	15.863	10.473	30.389	14.087	27.169	14.912
EQUIPMENT	.187	1.052	11.094	.007	5.031	.878
REINVESTMENT	14.252	33.540	32.930	54.072	71.054	86.558

Source : Department of Statistics, Bangladesh Bank.

Table-4 : Estimates of Investment, Consumption and Savings, 1974-75 to 1983-84

(Per cent of GNP at Market Prices)

	1974-75	-76	-77	-78	-79	-80	-81	-82	-83	1983-84
1. Gross	8.1	10.4	10	12.5	12.8	16.4	16.7	13.5	15.2	15.2
Investments						(Annual Average : 13.13)				
Private	4.0	5.7	5.4	5.7	6.1	6.4	6.9	6.7	7.3	7.7
Public	4.0	4.7	4.7	6.9	6.7	10.0	9.8	6.7	8.4	7.5
2. Consumption	99.0	101.8	96.4	96.4	95.8	96.1	94.9	100.6	94.3	93.1
3. Gross										
National	1.0	-1.8	3.6	3.6	4.2	3.9	5.1	-0.7	6.2	6.0
Savings								(Annual Average: 3.11)		

Source: Bangladesh, Economic Trends and Development Administration, Vol. II, Statistical Appendix, Report No. 4822, Feb-27, 1984, World Bank.

II INVESTMENT CLIMATE

A. The Years After Liberation (1972 TO 1975)

The investment policy of the government of the People's Republic of Bangladesh since 1972 has been changed several times and provides an interesting case study of interplay of forces -Political, Economic and Ideological. It will be recalled that during the autonomy movement for East Pakistan, ideological orientations of the petty bourgeois political party called Awami League became increasingly committed to state ownership of major industries, banks and other financial institutions.

On liberation of the country, the government proceeded to fulfil its electoral commitment and nationalisation of jute, textile and sugar industries along with taking over of abandoned units was seen as first and important step towards socialist transformation of the economy even though it accounted for 7 to 9 percent of GDP. This was so considered so as to avoid concentration of wealth and financial powers in few hands abinitio, to initiate participative management and also to experiment with socialist income and incentive policy. More important is the fact that government took over the enormous task of rehabilitating total denuded industrial units facing raw material supply interruption, shortage of spares, liquidity crisis, and damaged plants and machinery.

Given the general absence of Bangladeshi industrial entrepreneurial class, the private sector was in any case unequal to the task. However, what shook the Bangladeshi private sector was nationalisation of Bangladeshi owned- wholly or partly- industrial units in two sectors-Jute

and Textile and government's announced policy of putting a ceiling on new private investment (Tk. 2.5 million without land) which was considered adequate to prevent growth of bourgeoisie and appropriate for investment in labour-intensive small enterprises. Government in addition, put an embargo on foreign collaboration in the private sector in order to prevent growth of a comprador class. Thus it will be seen that in the initial years the ideological forces were the determining factors.

Foreign private investment was allowed only as a joint venture in the public sector with minority shareholding for the foreign company but which would obligate itself to get the balance of investment needed in foreign currency as loan. However, the minority partner could specify period during which local management would be trained and know-how transferred. The regulation governing remittance of profit and repatriation of capital was liberal. The policy even provided for a minimum dividend of 15% as a first charge on surplus which was designed to ensure that excessive diversion of funds for reinvestment or bonus would not be attempted. Reactions of foreign companies at that time indicated that they considered minority shareholding as a sign of lack of control on policy making and thus a disincentive for investment. However, before the policy could be tested, not only the ceiling was raised to Tk. 30 million for private sector investment but collaboration with private sector was permitted [3,4,5].

B. The Years After Mujib (1975-82).

The donors particularly IBRD was highly critical of investment policy of the government as can be seen from their reports from 1974 onwards. The modifications as was initiated by Mujib gained momentum during Zia's rule. The investment ceiling for private sector was raised to Tk. 100 million and later abolished. The Investment Corporation of Bangladesh was organised in 1976 for equity finance and underwriting of private sector investment. Disinvestment of a number of units from public sector corporations, reduction of duties and taxes on importation of capital equipment and simplification of procedures for permission to set up industries and liberal sanction of loans were notable steps taken during the Zia regime. However, it would be noted that no major steps were taken to disinvest large units from public sector. However, government proceeded to reserve public sector investment to six non-manufacturing sectors only. The government also expanded the sub-sectors where industrial units could be set up without prior permission. UNIDO

sponsored investors forum was organised in Dhaka to promote joint venture investment in Bangladesh and an Export Processing Zone was established for promoting foreign investment. As we have discussed in the section that follows, there were somewhat increased response to the liberal foreign investment policy of the Government. [6].

C. The Years After Zia (1982-86).

The new government of General Ershad pronounced a new Industrial policy (NIP) in June 1982 in line with the recommendation of the IBRD. The policy change was basically in the direction of increasing the role of private sector and privatisation of public sector enterprises. This logically included foreign private investments. The Foreign Private Investment Act provided for direct or joint venture investment with the objectives of transfer of technology, improvement of management skill and reducing balance of payments gap. The Act provided for protection against non-business risk, compensation for take over (if it at all happens) and repatriation of capital, capital gains and profits as well as management contract and employment of expatriate whose salary could be remitted outside. Besides, export processing zone was set up to provide for complete exemption from duties and taxes. Fiscal and monetary incentives were extended to promote joint ventures and Exchange rate Fluctuation Burden Absorption Scheme (EFAS) was introduced in 1983 to provide relief against adverse changes in exchange rates for a nominal insurance premium of 2.5% of foreign exchange component of investment [7].

Policy Towards Foreign Private Investment

Objectives

Government has categorically stated that it welcomes foreign private investment to supplement local resources so as to accelerate pace of industrial growth. It proceeded to note that foreign private investment is welcome in -

- (a) new enterprises requiring specific technology available to foreign investors;
- (b) enterprises making intensive use of available natural resource;

- (c) investments where technology requires much capital investment and which result in import substitution or export promotion;
- (d) undertaking promotion of exports; and
- (e) balancing, modernisation or expansion of existing public or private sector undertakings through infusion of foreign capital, technology and if necessary managerial manpower for increasing and improvement of productivity.

Equity Participation

The policy allows for equity or non-equity participation. Government, however, prefers equity participation. Even though policy indicates a preference for majority share holding by locals, it has allowed for 100 per cent equity holding by foreign investors 'in desirable cases where transfer of new technology and export earnings with maximum value added is involved.'

Incentives

The FDI promotion measures includes the following :

- (a) Tax Holiday for four years in a developed region, six years in a less developed region, five years in EPZ and nine years for least developed region,
- (b) Accelerated Depreciation at the rate of 80 per cent of actual cost of plant and machinery from the year of commercial production,
- (c) Carry Forward of Losses and setting off of losses ,
- (d) Exemption of Capital gains from taxes.
- (e) Double taxation relief is granted if a treaty to that effect exists,
- (f) Provision for low/reduced rates of Import duty at varying rates. (For import of machinery it varies from 20 per cent in developed region to 2.5 per cent for least developed region. The industries using local raw materials, irrespective of location, pay 10 per cent duty on machinery.)
- (g) Income tax rebate ranging from 20 per cent to 60 per cent for non-traditional exports,

- (h) Provision for credit facility upto 90 per cent of the value of letter of credit for export from a nationalised commercial bank and also for investment Loan for which repayment period is 12 to 15 years,
- (i) Guaranteed for remittance facility profit and dividends, repatriation of capital and capital gains, as well as remittance of salary, savings, retirement benefits, personnel assets of foreign personnel as well as payment of royalties, technical assistance fee and technical know-how fee have, and
- (j) Cation of indemnifi the loss of foreign investment due to civil commotion, insurrection or riot.

Thus, it will be seen that the policy is highly favourable towards the foreign investor [8].

The Foreign Investors Check-List.

It is now established in the literature that foreign investors assess investment climate in terms of the following to come to a decision on investment:

1. The General political atmosphere;
2. Attitude of host country's government;
3. Administrative practices involving tariff, quota, patent, rights, trade mark;
4. Absence or existence of investment guarantee schemes in the home and/or host country;
5. Facilities for remittance of profits and repatriation of capital;
6. Tax structure vis-a-vis proposed product and enterprise;
7. Trade agreements with other countries that affect domestic production, export;
8. Existence of auxiliary industry and essential utilities;
9. Nature of market i.e. extent, structure and competition;
10. Availability of materials [9].

It will be seen from earlier discussion that Bangladesh Government, to the best of its intension, have tried to provide for favourable climate in terms of the factors 2 to 7 listed above. However 8 to 10 are generally not so attractive. Domestic market, though appears to be large in demographic terms, is indeed small due to low per capita income, highly skewed income distribution and high incidence of poverty. Administration seem to have been losing its efficiency, as is seen from reports by IBRD on Public Administration. Administrative decision making is alleged to be highly erratic.

However, the more important factor is the political risk for the foreign investor. In September 1977, Fortune Magazine Research study on the basis of response of 1000 US manufacturing firm, noted that political climate was the most important factor in vital in matters of locational decision involving foreign investment, even though proximity to markets, proximity to raw materials and financial and tax concessions matter. There is now a developed literature available on political risk calculation. Adopting the methodology, developed by Ivo Fieraband and Rosaline Fierahand involving 30 political activity index ranked on a 7-point scale. Seventy developing countries were studied for 1971-79 by K.G. Mohiuddin and the same done for Bangladesh by Muzaffer Ahmad. According to the result, weighted index for Bangladesh was 1070 while it was 10 for Tunisa and 2550 for Cambodia. Situation in the 1980s have changed. But Bangladesh, despite no change in the head of the government, because of protest demonstration, riots, armed attacks, unnatural deaths, governmental sanctions, non-groth of stable political and adminestrative institutions and external intervention, etc., the political risk index may not be much different. This possibly explains, why very liberal policy of the government has failed to get effective enthusiastic response from foreign investors. And relatively, in the reigon of South and South-East Asia, Bangladesh has less of an attraction than many other countries that are luring foreign investment for accelerated growth.

III. ACTIVITIES OF TNCs FROM ASIAN DEVELOPING ECONOMIES

Extent, Nature and Pattern

Number of TNC Enterprises and Time Pattern of Investment.

(a) *TNCs Incorporated Abroad with branch offices in Bangladesh.*

Transnationals are operating in Bangladesh for many years. The old transnationals are not registered in Bangladesh and they have been

operating as sales or service agents, the exception being the tea gardens. The old transnationals include trading companies (15). There are some more who have not responded to Bangladesh Bank annual questionnaire. The oldest trading company in this category started operation in 1901, between 1947 (the year of independence) and 1971 (the year of liberation) eight more transnational trading company branches were established and since liberation six more have appeared on the scene.

The next group are the finance companies including banking and insurance. There are six such foreign banks with branches in Bangladesh and one insurance company. The oldest foreign banks is from U.K. which opened its doors in 1905. A second bank started operation in 1948 and the third in 1966. Since liberation four more foreign banks have opened branches in Bangladesh. The only foreign insurance company with branch office and operation in Bangladesh is a US company, U.K. companies withdrew after 1971.

In the service sector, there are seven airlines branch offices. Some others do not seem to report. There are two shipping companies, one each from Japan and USA operating as branches, two construction companies, one engineering company providing specialty services.

In the production sector, there are fifteen tea companies which are incorporated in U.K. and managed by managing companies of U.K origin in Bangladesh. Most of these (12) were started in the early years of this century. There is one German Pharmaceutical company with branch office in Bangladesh. They do not manufacture themselves but operate through companies with manufacturing capacity. Besides there are a dozen sales office of foreign companies selling such items as computers, printing machinery or types, etc.

Most of the companies mentioned above have brought in no capital for investment. They have generated income from their activities and some have repatriated profit. The time-profile of these branch offices are presented below.

Table-5: Time Profile of TNC Units Operative in Bangladesh but Incorporated Abroad.

Sector	YEARS OF ESTABLISHMENT					Total
	Before 1947	1947-71	'72-'75	'75-80	'81-'85	
Trading	1	8*	6	--	--	15
Airlines	--	4	2	1	--	7
Shipping	--	--	2	--	--	2
Construction	--	1	1	--	--	2
Banking	1	2	2	1	--	6
Insurance	--	1	--	--	--	1
Tea	12	3	--	--	--	15
Engg. Service	--	1	--	--	--	1
Pharmaceuticals	--	1	--	--	--	1
Electrical & Electronic com- pany offices	--	1	2	--	--	3
TOTAL	14	22	15	2	--	53

Note: * Some of them also operate as agents of shipping companies.

Source: Bangladesh Bank, Department of Statistics.

(b) TNCs Incorporated in Bangladesh:

Unlike the companies in (a) above, these companies are registered in Bangladesh. We have been able to get information of about 48 companies from Bangladesh Bank Annual Survey Questionnaire. There are a few more who have not responded. Most of these companies (35) were operating in the pre-liberation days either as a branch of a company registered in Karachi or in Dhaka. They were duly registered again after liberation and this fact creates confusion as to-date of commencement of activity and had to be corrected in most cases. It will be seen that trading (7) and marketing (5) are the most dominant activity of the TNCs and even

where some manufacture is involved, those are related to their marketing efforts. This is mostly true in the case pharmaceuticals and electrical units.

Table 6: Time profile of TNC Units operating and Incorporated in Bangladesh.

Sector	YEARS OF ESTABLISHMENT						Total
	Before 1950	'50-60	'60-71	'72-75	'75-80	'80-85	
Trading	1	1	4	-	1	-	7
Marketing	-	5	-	-	-	-	5
Pharmaceutical	-	1	10	-	-	-	11
Chemicals	-	1	1	1	-	-	3
Petroleum	-	-	2	-	-	-	2
Electrical	-	-	2	2	1	1	6
Warehousing	-	1	-	-	-	-	1
Tobacco	-	1	-	-	-	-	1
Food	-	1	-	1	-	-	2
Textiles	-	-	1	-	-	2	3
Fishing	-	-	-	-	3	-	3
Engineering	-	1	-	-	-	-	1
Cement	-	-	1	-	-	-	1
Shipping	-	-	1	-	-	-	1
Metal	-	-	-	-	2	-	2
Total	1	12	22	4	7	3	49

Source: Bangladesh Bank, Department of Statistics.

Of the seven companies in trading group, two are of British, three of Germany and two of Dutch origin whereas in the marketing group all five are of British origin. Of the eleven companies in pharmaceuticals, five each are from U.K. and U.S.A. while one is from West Germany. Of the six electrical companies two each are from U.K. and Netherlands and one each from Sweden and Singapore. All the three chemical companies have parent companies in U.K. In case of petroleum, one each is from U.K. and U.S.A.

It will be seen from the above, most of the companies in this category were operating before liberation of Bangladesh and there is dominance of developed countries in this sphere and most are involved in trading or marketing products.

FOREIGN INVESTMENT PROPOSALS SANCTIONED SINCE LIBERATION

It would be seen from the table below that the foreign investment proposals were not many in the initial years after Liberation. After the Mujib years ('72-75), during the Zia regime (1976-81) a large number of foreign investment proposals were sanctioned. There came a lull after Zia which was soon rectified.

It will also be seen that textiles (particularly garments) have been the hot favourite of foreign investors, followed by engineering, fishing and fish processing, leather and footwear and electrical.

It should be mentioned of these 107, only fourteen were included in list of firms responding to Bangladesh Bank questionnaire included in earlier table. An attempt by us to locate them showed 45 to be totally non-existent and only about 48 firms were in place even though the industries were not such as to require long gestation period.

Table-7: Time Profile of Sanctioned Foreign Investment proposals.

Sectors	'72-75	'75-80	'80-81	'81-82	'82-83	'83-84	'84-85	'85-86	Total
Food	-	1	-	-	1	2	-	1	5
Fishing & Fish processing	-	2	-	-	-	6	-	1	9
Tobacco	-	-	-	-	1	-	-	-	1
Textiles	-	10	1	-	9	9	3	1	33
Leather & Footwear	1	-	2	1	3	1	1	-	9
Chemical	-	-	1	-	1	4	2	-	8
Pharmaceuticals	-	1	-	-	-	-	-	-	1
Plastic, PVC, Rubber	-	-	3	-	-	1	1	3	8
Glass/Asbestos	-	-	-	-	1	-	-	1	2
Steel/Aluminium	-	1	-	1	-	2	-	1	5
Engineering	-	5	3	-	-	2	-	3	13
Electrical	-	-	3	1	2	2	1	-	9
Others	-	-	3	-	-	1	-	-	4
Total	1	20	16	3	81	30	8	11	107

Source: Directorate of Industries, Government of Bangladesh.

Note: Exact correspondence between yearly sanction and establishment as seen in this and previous tables could not be established.

A consolidated time profile of these three categories are given below:

Table-8: Consolidated Time-Profile of Three Categories.

Categories	Before 1947	'47-'71	'72-'75	'75-'80	'80-'86	Total.
1. TNC Branch Office	12	22	15	2	-	53
2. TNC Incorporated in Bangladesh	-	34	4	7	3	49
3. TNC Sanctioned	-	-	-	10	83	93
Total	12	56	19	19	86	195

Home Country Distribution of Enterprises and Investments

In this section also we shall follow the same delineation as outlined earlier, pressing our findings according to companies incorporated abroad, companies incorporated in Bangladesh and companies sanctioned for incorporation in Bangladesh.

TNC Branch Offices in Bangladesh:

It has not been possible to ascertain the investment by these companies in Bangladesh. A measure of investment has been derived from value of net assets. For this category it is measured by excess of total assets in Bangladesh over liabilities to residents in Bangladesh. In this category of companies, dominance of British companies, followed by USA and Japan is easily discernible. This not only indicates historical ties but also the influence of aid induced trade and economic relations.

An attempt was made to look into capital investment. From the available information with the Bangladesh Bank, it appears that from British Companies cash capital inflow was 15.7 million taka for 1980-85, while inventory investment was Tk. 720.3 million. Inventory valuation adjustment reflects changes in inventory as well as prices. For British companies incorporated in U.K. reinvestment of savings was of minor importance, so was investment in equipment. For the US companies, inventory adjustment was major, but unlike British companies there was noticeable reinvestment of savings, while cash inflow or investment in equipment was nominal. For West Germany and Japanese companies, cash inflow was more important. For Dutch companies, inventory adjustment was of dominating importance. For French companies reinvestment was the most important element. The picture does not change for companies from developing countries.

TNCs Incorporated in Bangladesh:

In this category we have been able to examine responses to Bangladesh Bank of fifty-four¹ firms of which seven are from Asian developing countries. We have classified the firms into primary, trading, manufacturing and services. Of the responding firms 37 including 4 from Asia are manufacturing units, including those which add very little value through assembly or bottling. There are eleven trading firms, all of developed country origin. There are four primary (fishing units), these from Thailand has since been disinvested after 1984 as has been one Indian manufacturing unit. There are two units in the service sectors, one storage and one hotel.

Table-9: Home Country Distribution of TNC Branch Units in Bangladesh by Categories of Enterprises and net Value.

(Figure in Million taka)

Distribution	TNC Branch		1980	1981	1982	1983	1984
	TNC	No					
U.K.	Agro-based	15	394.8	461.0	540.2	797.1	818.1
	Services	10	-12.7	-60.1	-70.5	-163.1	107.9
USA	Services	8	43.2	52.8	66.9	31.6	91.6
West Germany	Service	3	1.0	0.6	0.9	1.0	1.0
Netherlands	Service	2	0.6	0.1	0.3	-0.2	-
France	Service	2	0.5	-15.2	44.7	35.7	84.2
Japan	Services	7	6.7	14.8	17.4	11.8	13.9
	Construction	1	-	-	32.6	100.7	54.0
Pakistan	Services	2	-0.5	-0.6	6.8	46.6	66.2
India	Services	2	9.4	22.4	24.0	47.5	45.2
Thailand	Services	1	-	-	0.2	1.9	1.4
Others		NA	39.2	6.3	-46.8	N.A	N.A

Source: Bangladesh Bank, Department of Statistics.

Net Value is a stock concept related to value of assets of the firm.

¹. Of these 41 are of the 49 in category 2 of Table 8 and 13 are from category 3 of the same table.

Table 10: Investment Flows of TNC Branches by Countries

(In Million Taka)

Country	Category/ Investment	1980	1981	1982	1983	1984	Total
U.K.	Cash	2.8	3.6	1.9	2.9	4.5	15.7
	Equipment	-	-	-	0.7	0.2	0.9
	Reinvestment	-	0.7	-0.3	1.0	-	1.4
	Inventory adjustment	60.3	120.6	132.0	336.0	71.4	720.3
	Total	63.1	124.9	133.6	340.6	76.1	738.3
U.S.A	Cash	4.4	2.5	3.1	-	-2.4	7.6
	Equipment	0.2	2.0	1.2	0.3	5.8	9.5
	Reinvestment	11.9	27.2	29.1	37.9	15.4	121.5
	Inventory adjustment	42.5	487.3	36.3	446.3	170.1	1182.5
	Total	59.0	519.0	69.7	484.5	188.9	1321.1
West Germany	Cash	1.5	1.6	1.7	1.9	1.4	8.1
	Equipment	-	-	-	0.3	-	0.3
	Reinvestment	0.4	0.5	0.2	0.02	0.1	1.22
	Inventory adjustment	-	-	-	-	-	-
	Total	1.9	2.1	1.9	2.22	1.5	9.62
Netherlands	Cash	-	-	-	-	-	-
	Equipment	-	-	-	-	-	-
	Reinvestment	-	-	-	33.0	-	33.0
	Inventory adjustment	-	0.01	0.14	442.6	-	442.75
	Total	-	0.01	0.14	475.6	-	475.75
France	Cash	-3.7	7.5	-	-	-	3.8
	Equipment	-	-	-	-	-	-
	Reinvestment	-	0.5	4.8	9.7	23.5	38.3
	Inventory adjustment	0.1	-	-	-	-	0.1
	Total	-3.6	8.0	4.8	9.7	23.3	42.2
Japan	Cash	4.8	4.7	6.6	6.2	7.6	29.9
	Equipment	-	-	-	-	-	-
	Reinvestment	-	-	-	-	-	-
	Inventory adjustment	0.1	0.06	0.14	0.06	0.1	0.72
	Total	4.9	4.76	7.0	6.26	7.7	30.62
Pakistan	Cash	-	3.1	-	-	-	3.1
	Equipment	-	-	-	-	-	-
	Reinvestment	-	-	-	1.6	14.5	16.1
	Inventory adjustment	-	-	-	36.0	44.9	80.9
	Total	-	3.1	-	37.6	59.4	100.1
India	Cash	-	-	-	4.1	-	4.1
	Equipment	-	-	-	-	-	-
	Reinvestment	5.0	3.7	4.6	6.1	4.4	23.8
	Inventory adjustment	0.5	-0.01	-0.3	7.9	-0.02	7.07
	Total	5.5	3.69	4.3	18.1	4.38	35.97

Source: Bangladesh Bank, Department of Statistics

Ahmad : Transnational Corporations

Note: Reinvestment figures are net of repatriation.

The table 11 presents collated information on paid up value of charges and equity of TNCs. The dominance of developed country TNCs is overwhelming; the leading country being U.K., U.S.A and Netherlands are poor second and third. The other countries are West Germany, Sweden, Switzerland, Luxemburg, Japan and France.

The developing country TNCs are very weakly represented in the list with one each from South Korea, Singapore and Thailand.

Table 11: Home Country Distribution of TNC Companies Incorporated in Bangladesh with Paid up Value of Shares and Foreign Company Equity
(In Million Taka)

Country, Sector Number	Paid up Value					Estimated Foreign Company Equity				
	1984	1983	1982	1981	1980	1984	1983	1982	1981	1980
U.K.Trading (7)	22.9	21.4	13.0	9.1	8.9	18.2	16.4	9.8	8.6	8.6
Manufacturing (15)	489.6	487.4	297.6	292.6	190.0	322.1	292.6	228.2	205.0	129.0
Service (1)	0.4	0.4	0.4	0.4	0.4	0.2	0.2	0.2	0.2	0.2
Total	512.9	509.2	411.0	302.4	199.3	340.5	209.2	238.2	213.8	137.8
U.S.A Trading(6)	50.3	50.3	50.3	48.3	48.3	37.9	37.9	37.9	36.7	36.7
Canada Manufact- uring (1)	3.4	3.4	3.4	3.4	-	0.6	0.6	0.6	0.6	-
Netherlands Trading (1)	0.1	0.1	-	-	-	0.1	0.1	-	-	-
Manufacturing(4)	44.1	42.3	39.2	37.7	21.4*	28.5	28.5	23.8	16.7	-
Total	44.2	42.4	3.92	37.7	21.4	28.6	28.6	28.5	23.8	16.7
West Germany Trading (2)	7.4	7.7	7.7	7.7	0.9	4.2	7.6	7.6	7.6	0.5
Manufacturing (2)	35.5	35.5	33.6*	33.6*	33.6*	19.0	19.0	17.7*	17.7*	115.6*
Total	43.2	43.2	41.3	41.3	34.5	23.2	26.6	25.3	25.3	16.1
Switzerland Manufacturing (2)	36.9	36.9	36.8	36.8	36.4	21.8	21.8	21.8	21.8	21.8
France Service(1)	12.9	12.9	12.9	12.9	12.9	0.9	0.6	0.5	0.5	10.7
Luxemburg Manufacturing	20.0	13.0	10.0	10.0	10.0	13.9	6.8	4.0	4.0	4.0
Sweden-Trading(1)	2.0	2.0	1.0	1.0	0.8	1.3	0.6	0.6	0.6	0.6

Table-11 (Cotinued)

Manufacturing(1)	11.0	5.2	2.0	1.2	0.5	2.7	2.7	-	-	-
Total	13.0	7.2	3.0	2.2	1.3	4.0	3.3	0.6	0.6	0.6
Japan:Primary(1)	9.6	9.6	4.9	4.9	4.9	2.9	2.9	2.9	2.9	2.9
Manufacturing(1)	2.6	2.6	2.6	2.6	-	0.7	0.7	0.7	0.7	-
Total	12.2	12.2	7.5	7.5	4.9	3.6	3.6	3.6	3.6	2.9
South Korea	3.0	3.0	3.0	2.6	-	1.5	1.5	1.5	1.5	1.5
Manufacturing(1)										
Singapore	4.6	4.6	-	-	-	1.1	1.1	-	-	-
Manufacturing(1)										
India:Manufac	-	-	-	3.8	3.8	-	-	1.1	1.6	-
turing (1)										
Thailand: Primary(1)	-	-	-	-	1.1	-	-	-	-	0.5
Manufacturing(1)	0.9	0.3	0.9	-	-	0.3	0.3	0.3	-	-
Others Pry.(2)	0.9	0.9	0.9	-	1.1	0.3	0.3	0.3	-	0.2
Total	11.8	1.2	1.8	-	2.2	0.6	0.6	0.6	-	0.7

Source: Bangladesh Bank, Department of Statistics

Notes: Paid up value refers to the total for the enterprise(s).

* indicates that the value is missing for one enterprise.

Foreign Investment Proposals Sanctioned since Liberation

We could get information for 107 units of joint ventures in Bangladesh. Treating these as TNCs we have collated information on proposed total investment, estimated total equity and promised total participation in equity which ranged from zero (for two units) to over seventy per cent (for four units). It should also be noted that some of these TNCs are cooperating abroad for the first time in such a venture and some such TNCs are owned by expatriate Bangladeshis. These in true sense represents individuals, but legally is a company registered abroad.

Amongst the developed countries, dominance of U.K., U.S.A. and the Netherlands continue. However, in terms of total investment, Canada, Sweden and Japan have lead over U.K., Netherlands and U.S.A. This is also true in terms of equity participation. Amongst the developing countries, Singapore and Hong Kong have lead over South Korea, China and Thailand. In terms of total investment, South Korea has lead over Singapore, China, Thailand and others. The same is reflected in TNC equity.

Per unit investment is higher for developed countries than the developing ones, so is per unit equity participation calculated as percentage of total equity contributed by TNCs.

Table-12: TNC Investment Proposals Sanctioned since 1974-75
(Figures in Million Taka)

Country	Sector & No	Total Investment	Total Equity	Foreign Equity
U.K.	Manufacturing 10	249.54	78.9	35.7
	Service 1	8.0	2.4	1.0
U.S.A.	Manufacturing 8	83.3	41.6	29.3
West Germany	Manufacturing 5	136.38	50.9	26.3
Netherlands	Manufacturing 5	219.6	65.9	23.3
Switzerland	Manufacturing 4	145.92	52.2	25.4
Sweden	Manufacturing 2	68.34	32.2	14.3
Canada	Manufacturing 3	447.32	134.2	113.3
France	Manufacturing 2	48.6	14.6	3.8
Belgium	Manufacturing 1	4.62	1.56	0.7
Italy	Manufacturing 2	15.60	6.6	3.1
Japan	Manufacturing 4	303.35	113.3	55.4
Total Developed	Manufacturing 48	1722.57	591.96	330.6
	Service 1	8.0	2.4	1.0
Singapore	Manufacturing 15	369.1	118.2	40.1
Hong Kong	Manufacturing 10	45.1	14.4	6.7
South Korea	Manufacturing 10	272.21	92.8	30.7
Thailand	Manufacturing 6	128.3	38.5	13.7
India	Manufacturing 4	64.9	18.4	4.6
Philippines	Manufacturing 1	13.4	4.4	1.0
Pakistan	Manufacturing 2	23.74	9.0	3.6
China	Manufacturing 3	166.0	49.8	14.4
D.P.R. Korea	Manufacturing 2	413.93	160.0	60.0
Other Asian	Manufacturing 3	25.0	9.2	3.4
Total Asian TNC	Manufacturing 50	1374.91	472.6	168.2
	Service 1	7.4	2.2	1.0
Total Non-Asian Developing	Manufacturing 1	0.7	0.2	0.01

Source: Directorate of Industries, Government of Bangladesh.

INDUSTRIAL DISTRIBUTION OF ASIAN TNCs.

(a) TNC Branch Offices

Two units of Pakistani TNCs have offices in Bangladesh, one is Airline and the other is a bank. Both opened their doors in 1976. From India also we have two TNCs with offices in Bangladesh -- an airline and a bank. Third country which have such an office in Thailand for its airline.

(b) TNCs Incorporated in Bangladesh

According to returns with the Bangladesh Bank, South Korea garments units, a Thai metal furniture manufacturing unit and a Singaporean Electric manufacturing unit have been operating in Bangladesh since 1980, 1981 and 1982 respectively. Indian government unit established in 1981 was disinvested to Bangladeshi partner. The three Thai fisheries units established in 1979, 1980 and 1981 do not respond to questionnaire.

(c) TNC Units Sanctioned since 1974-75.

Singapore with 15 units leads the countries in number of proposals sanctioned, followed by Hong Kong, South Korea and Thailand. South Korea leads the countries with highest total investment with lump investment in metal and leather sectors followed by Singapore and Thailand. The most popular sector of Asian TNC investment is textiles (i.e.garments), followed by agro-industries and metals. Per unit investment is high in metal and leather and low in electrical. The other Asian TNC are from China, India, Pakistan and Philippines.

MAIN FEATURES OF OPERATION OF ASIAN TNCs

The basic approach was to cover as many as ten per cent of TNCs from developed and developing country origin. In order to approach this ten per cent mark with sectoral and country adjustment, we started with a pre-selection of 50 out of 142 units. No equity cut-off point or any other criterion was adopted. Number of response received were 30 of which 24 had data completed in somewhat meaningful manner. However, in the process appropriate country and sectoral representation was missed, even though it represents about 17 of the possible universe. We have attempted to supplement the information received from other sources as well in order to get as wholesome a picture as possible. The survey is biased in favour of Asian developing countries. Of the surveyed enterprises 20 are from that origin. This was due partly to bias in pre-

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selection. Partly due to cooperation extended and partly due to determined follow up of such firms.

Organization

Year of Establishment/Commencement

We have provided a time-profile of commencement of operation or of sanction for all 193 TNCs in the previous section. It will be seen that average annual rate of new TNCs operation in the '47-71 period was about 4 which was maintained for '72-80. There is an apparent acceleration in the years 1980-85. Our survey effort was concentrated on units established since 1974.

Type of Industries

Of the sample units, seven were established in 1974-79, three each in 1979-80, 1980-81 and 1982-83; and eight in 1983-84. In the sample textile (garments) is heavily represented with 12 units, engineering with two, chemicals with two, electrical with two, metal with one, non-metal one, fishing one, plastic one, leather one, and others one unit. (For country product breakdown, see Table 15).

Mode of Establishment and Type of Company

Of the 24 units surveyed, all the twenty four were new companies floated in Bangladesh. There was no incident of take-over or merger. However, in the universe there is only one case of take-over of an abandoned unit in the agro-chemicals sector and fifteen cases of addition to existing units.

Of the 24 units surveyed, 20 were private limited companies, and two were public limited companies. In the universe also there is a great preponderance of private limited company and partnership. This is most pronounced among the TNCs from Asian Developing countries.

Incentive Status

In terms of incentive, all Asian TNC joint ventures cited five years tax holiday, right to repatriation of capital including profit, dividends and reinvestment of savings as well as salary of expatriates, liberal depreciation allowance and availability of credit as attractive. None of them mentioned guarantee against nationalisation as offered by

Table-13: Total Sanctioned Investment and No. of Sanctioned Units from Asian Region since 1974-75.

Country & No.	Fishing Food Pro cessing, Wood, etc.	Textiles	Leather and Footwear	Camical	Plastic PVC & Rubber	Metal	Engineer- ing	Electrical	Others	T total
Singapore (15)	285.1	26.05 (4)	- (4)	-	38.9	- (3)	3.0 (1)	5.0 (1)	11.0 (2)	369.05 (15)
Hong Kong (10)	2.6	35.7 (1)	0.97 (6)	- (1)	4.9	- (1)	1.0 (1)	-	-	45.17 (10)
S. Korea (10)	8.6(1)	116.84	146.7 (8)	- (1)	-	-	-	-	-	272.14 (10)
Thailand (5)	13.5(2)	-	-	-	-	110.3	- (2)	4.5 (1)	-	128.3 (5)
India (4)	-	18.2(2)	-	- (1)	-	-	35.0(1)	-	-	64.9(4)
Philippines (1)	-	-	-	-	13.4(1)	-	-	-	-	13.4(1)
Pakistan (1)	-	-	-	-	-	-	-	-	3.7(1)	3.7(1)
China (1(3)	-	-	-	122.2(2)	-	-	-	43.8(1)	-	166.0(3)
D.P.R. Korea (2)	-	11.4(1)	-	-	-	402.5(1)	-	-	-	413.93(2)
Others (3)	-	21.2(1)	-	-	-	-	-	3.8(1)	7.4(1)	32.4(3)
TOTAL 54	309.8(8)	229.42(22)	147.67(2)	133.9 (3)	57.2 (5)	512.8 (3)	82.8 (4)	13.3 (3)	22.1 (4)	1508.99 (54)

Source: Directorate of Industries, Government of Bangladesh
Notes: Figures within Parentheses indicate number of units.

Table-14: Total Investment and No. of sanctioned Joint ventures with TNCs from Developed Countries since 1974-75

(Figures in Million Taka)

Country & No.	Fishing, food processing and wood	Tobacco	Textiles	Leather Footwear	Chemical, Pharmaceutical	Plastic PVC & Rubber	Metal	Engineering	Electrical	Others	Total
U.K.	68.0 (2)	-	-	(4)	95.52(4)	-	(2)	10.74(2)	75.28(2)	-	249.54 (10)
U.S.A.	9.08 (1)	10.0 (1)	16.98 (2)	-	20.38 (1)	-	-	5.26 (1)	10.0 (1)	11.6 (1)	83.3 (8)
West Germany	-	-	-	8.55 (1)	123.80 (2)	-	-	2.0 (1)	-	2.03 (1)	136.38 (5)
Netherlands	-	-	-	18.96 (1)	18.44 (1)	102.4 (1)	-	-	79.8 (2)	-	219.6 (5)
Switzerland	-	-	26.95 (2)	28.57 (1)	-	-	-	-	90.4 (1)	-	145.92 (4)
Italy	-	-	-	-	-	-	6.0 (1)	9.60 (1)	-	-	15.60 (2)
Sweden	-	-	-	-	45.34 (1)	-	-	23.0 (1)	-	-	68.34 (2)
Belgium	-	-	4.62(1)	-	-	-	-	-	-	-	4.62(1)
France	-	-	-	-	-	10.0(1)	-	38.6(1)	-	-	48.6(2)
Canada	-	-	-	442.0(2)	-	5.32(1)	-	-	-	-	447.32(3)
Japan	251.7(1)	-	20.65(2)	-	31.0(1)	-	-	-	-	-	303.35(4)
TOTAL	328.78(4)	10.0(1)	69.2(7)	498.08(5)	334.48(10)	117.72(3)	6.0(1)	89.20(7)	255.48(6)	13.63(2)	1722.57(46)

Source : Directorate of Industries, Government of Bangladesh.

Table-15: Country-cum-Industry Breakdown of Sample Units

Country	Food & Fishing	Textiles	Chemicals, pharmaceuticals	Engineering	Electrical	Metal	Non-Metal Rubber	Plastic, PVC &	Leather	Other	Total
Singapore		Garments (4)			Radio clock (1)			Plastic (1)		Bagging (1)	7
Hong Kong		Garments (5)		Dockyard (1)	Radio clock, Calculator (1)				Leather (1)		8
S. Korea		Garments (1)									1
China			Mosquito coil (1)	Sewing machine Parts (1)							2
Thailand	Fishing (1)				door (1)	Alum.					2
Sub-Total	1	10	1	2	2	1		1	1	1	20
Japan		Garments(1)									1
Netherlands			Paints & Varnishes(1)								1
U.S.A.		Garments(1)									1
Belgium							Asbestos (1)				1
Sub-Total		2	1				1				4
GRAND TOTAL		12	2	2	2	1	1	1	1	1	24

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Bangladesh government. Those who produce for domestic market mentioned tariff protection as another factor constituting incentive.

The Asian TNC joint ventures were asked to indicate on a 1-5 point scale reasons for setting up operations in Bangladesh. The results are reported below. (Table 16).

It appears from the response that host government encouragement, low labour cost, expected high rate of return and equipment exports opportunity were important consideration for investment by foreign companies.

Ownership and Control

Ownership is defined by the equity capital and thus equity structure is taken to reflect the ownership structure; though it may or may not reflect the control structure as well. Information on 96 companies were obtained in this regard. The distribution of companies with respect to foreign equity is given below. (Table 17).

Table-16: Mean Score of Sectors in Respect of Promotive Reason.

	Textile	Leather	Food	Chemical	Engineering	Electrical	Metal	Other
Access to RM	-	3.1	23.2	-	-	-	-	4.0
Low rate cost	2.6	2.3	1.1	1.8	1.9	2.0	2.1	2.1
High rate cost	0.7	1.7	1.9	2.2	2.4	2.6	4.0	3.6
Expl.Laby.Techn.	2.3	1.9	-	-	3.2	3.1	2.9	-
Protect Market	-	-	-	0.5	0.5	0.5	0.5	-
Knowledge of Mkt.	-	2.4	2.4	-	-	-	-	-
Export Equip.	0.3	-	-	2.0	3.0	3.2	3.3	4.0
Access to 3rd Mkt.	3.0	2.0	-	-	-	-	-	-
Quota Adv.for Expt.	4.2	1.7	-	-	-	-	-	-
Family ties	2.1	0.5	-	-	-	-	-	-
Host Government Encouragement	3.2	4.0	2.3	2.9	3.2	3.2	4.0	4.0

Note : Higher Score Indicates Greater attractiveness.

Table-17: Distribution of TNC Companies Incorporated in Bangladesh (Operating or Sanctioned) According to Foreign Equity Participation

Foreign equity as percentage of total equity	-10	10-25	25-49	49-	50-	51-	51-60	61-76	75-	Total
Asian TNCs	1	7	5	32	10	1	-	-	1	57
Units surveyed from Asian region	-	1	2	6	5	-	1	4	1	20
Developed Country TNCs	1	5	6	11	-	5	2	8	1	39
Units surveyed from developed TNCs region	-	-	1	1	-	1	1	-	-	4

Source: Directorate of Industries, Government of Bangladesh

It will be seen that Asian TNCs are generally minority shareholders and most preferred shareholding by foreign company is 49%. Of the developed country TNCs sixteen out of thirtynine opted for majority shareholding even though modal class remains 49% shareholding. We examined the sectoral classification to find out whether any pattern exists. It is difficult to find any, e.g. textile sector showed diversity of equity arrangements both for Asian and developed countries, same is true for leather, engineering or electrical. Technology content of all these industries are low; even then the diversity was examined for an answer but no definite conclusions could be reached. Market orientation also provided no clue. Only consistent clue was that established TNCs from developed countries retained their majority shareholding even when expansion or new unit was undertaken. Much of these investments were retained savings. In the survey, the pattern of equity is similar for both developed and developing country TNCs as can be seen from the table below, though it is not proportionate to the universe.

Table-18: Composition of Board of Directors and Management of responding units.

A. Asian TNC	Product	Equity Structure	Market	Royalty	Board**		Composition	
					F	L	F	L
*A	Garment	51:49	E	No	2	2	Chairman - Local	M.D. - Foreign
*B	Garment	51:49	E	No	2	2	Chairman - Local	M.D. - Foreign
*C	Garment	50:50	E	No	2	2	Chairman - Local	M.D. - Foreign
D	Garment	51:49	E	No	2	2	Chairman - Foreign	M.D. - Local
E	Garment	51:49	E	No	1	2	Chairman - Local	M.D. - Foreign
F	Textile	51:49	D	No	2	2	Chairman - Local	M.D. - Foreign
G	Chemical	51:49	D	2%	3	4	Chairman - Foreign	Vice Chairman - Local
H	Textile	70:30	D	No	2	2	Chairman - Foreign	M.D. - Local
I	Electrical	50:50	D	N.A.	2	2	Chairman - Local	M.D. - Foreign
J	Engineering	51:49	D	2%	2	2	Chairman - Local	M.D. - Foreign
K	Food	50:50	D	N.A.	2	2	Chairman - Foreign	M.D. - Local
L	Metal	51:49	D	N.A.	3	3	Chairman - Foreign	M.D. - Local
M	Leather	55:45	E	N.A.	3	3	Chairman - Local	M.D. - Foreign
B. Developed Country TNC								
N	Pharmaceuticals	40:60	D	5%	2	3	Chairman-Local	M.D. - Foreign
O	Tobacco	34:66	D	N.A.	3	4	Chairman-Local	M.D. - Foreign
P	Electrical	75:25	D	5%	3	2	Chairman-Local	M.D. - Foreign
Q	Engineering	50:50	D	N.A.	2	2	Chairman-Foreign	M.D. - Local
R	Textile	51:49	E	No	2	2	Chairman-Foreign	M.D. - Local
S	Chemical	40:60	D	N.A.	3	4	Chairman-Local	M.D. - Foreign

Source: Survey and Personal Interview.

Notes: E = Primarily Export, D = Primarily Domestic,

*F = Foreign; L = Local; M.D. = Managing Director Royalty paid for technical know-how to the foreign collaborating company.

Composition of Board of Directors and Management

In all the TNCs surveyed minimum number of members on the Board is three including the Chairman and Managing Director, and maximum is nine. The representation on Board normally reflects the equity structure. Either the Chairman or the Managing Director is from the TNC. The foreign company have often nominated their technical person as the

Managing Director or a Director on the board. Some of the developed countries have insisted on appointing a finance director as well. Most of these boards are functional boards in the sense that except for the chairman/vice-chairman, other directors are engaged as full time employees. There are exceptions to this, where Bangladesh directors are basically financiers and do not participate in the day-to-day function.

Significance in Parent Company's Global Operation

No significant information on this could be made available.

Links with Foreign Company

For the purposes of our exposition, we have grouped this linkage into four main heads i.e., management, marketing and procurement, technical assistance and finance.

We have in the previous section mentioned that generally in proportion to equity, the parent company is represented in the Board. In addition, particularly in case of substantially high shareholding by TNC the management of the company rests with them. Even with minority shareholding the TNC may take initial responsibility of management particularly with export oriented units or where new technology is in use (i.e., new for the host country) in order to protect their goodwill. We have not seen any special management contract for Asian TNCs, most of them do not lend their own name like some of the developed country TNCs incorporated in Bangladesh.

We were able to examine three management contracts -- two for hotels and one for engineering services. None of these companies have any equity participation and all of them are from developed countries. The units surveyed did not have any specific management contract besides the provisions contained in the joint venture agreement. The management supervision was provided through expatriate, personnel at the operational level and through representation on the Board at the policy level. For all joint ventures both kinds of management participation (intervention) were practiced.

Management function is viewed as consisting of planning, organizing, staffing, executing, and evaluation, executing involves financing,

procuring, installing, operating and marketing. In all these there are functions of goal/target setting involved. For our purposes we had asked supplementary question to the selected TNCs in respect of these functions and involvement of parent company in these. From response received from the management, the following conclusions were arrived at.

At the initial stage, almost all foreign companies, irrespective of sectors and countries, have participated at least in planning the technical and financial aspect of the enterprise. Annual plans are in most cases routine. These are more rigorously done by the developed country TNCs in pharmaceutical and electrical sectors. The responsibility of organizing the enterprise in case of Asian TNCs rested mostly with the local partner. While the foreign company provided advise. In staffing also the local party was more dominant except in case of developed country TNCs where, in selection of management, they had all the say. In arrangement of finance, local equity and loan (including foreign currency loan) was the responsibility of local party while foreign equity and at time foreign currency loan was the responsibility of foreign party. Only in one case of Asian TNC the foreign company agreed to provide supplementary foreign currency loan, while developed country TNCs have done it through reinvestible savings.

The dominance of foreign company was in the selection of technology and supply of machinery. In most of the agreements this became the sole responsibility of the foreign company. As a consequence they also became responsible for installation of machinery. In the case of developed country TNCs legally the responsibility rested with the newly formed company but functionally it was always the job of the parent company. Foreign procurement of raw materials has remained the responsibility of parent company.

The management operation was the responsibility of the new established company. The foreign company deputed the production manager for the initial years, at times he is called factory manager, deputy general manager or even general manager. Even after the expiry of such responsibility on the basis of contract, for all export units, the foreign company personnel remain as advisor with considerable influence, quality being his prime responsibility. Asian TNCs operate through a system of deputation on contract; the developed country TNCs most by operate the company and have tended to appoint Managing Director, Finance Director, or Production Director. They have at times attracted highly qualified Bangladeshi Executives to some or all these positions.

This is not yet the case with Asian TNCs in Bangladesh. Marketing abroad for export units have initially been the responsibility of the foreign company. Some of the local companies have assumed this responsibility over time.

Financing Pattern

Nature of Equity Participation

Capitalisation of value of equipment have been a popular mode of equity participation for Asian TNCs. Of the 20 units surveyed 12 confirmed capitalisation of value of equipment, of which 11 are in textile (garments) sector. In 3 cases the value of machinery supplied was just equal to equity, in five cases it was less and in three it was more and treated as loan. Of the developed country TNCs none in their record, showed capitalisation of machinery. Though on personnel interview some of the pharmaceutical, electrical, engineering companies admitted that their cash equity was used often to purchase equipment. The records with Bangladesh Bank indicate that capitalisation of machinery is less important than cash budgeting; however it is more prevalent with US companies than other developed countries and with Hong Kong and South Korean based units than other Asian developing countries.

Equity/Loan Ratio

There is not much of a variation. Most new units have opted for 70:30 loan-equity ratio irrespective of country and sectors. There are two cases of 80:20 ratio due to tax advantage given to locations outside so-called developed areas. There are three cases of 60:40 loan-equity ratio for units under expansion. The first indicates the preferred norm also required by law for so-called developed region.

Much of the local and foreign currency loan are obtainable from government owned the loans provided by foreign companies are generally repaid with interest as first charge within 2/3 years. Hence loans do not constitute high risk; local loan such can be rescheduled and its repayment is very often irregular as the government is willing to make concessions for tapes. Equity is risky and in this case more risky and as equity is often paid through over-invoicing of machinery or loan etc. its actual cost is less than apparent. This explains preference for loan upto the prescribed limit.

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Sources of Borrowing

A clear picture did not emerge from the survey questionnaire. The intent of the questionnaire was to know about the sources of loan of the investment fund. The answer got mixed up with the current asset structure of the company indicating either source of working capital and/or financing of loss, if any.

Of the twenty units of Asian TNCs, only the units in the export processing zone (2) reported 100% loan from parent company and others indicated that 100% loan was obtained from local banks and two companies indicated that 40% of the loan was obtained from the parent company. Of these 20 units, 15 indicated that investment loan has since been repaid. The textiles unit for their operating purposes require very little loan. Other units requirement of working capital is met largely from local banks' finances. Of the 4 developed country TNCs, only one reported 100% financing of loan from foreign partner who owns 80% of the equity. However, foreign company units incorporated in Bangladesh show loans from head office, parent company subsidiaries and parent company affiliates as shown below. (Table 19).

Operational Characteristics

Size and Factory Intensity

Size can be indicated in various ways, e.g., total value of assets, total value of sales or total employment. Total value of assets include both directly productive and other assets. This also is influenced by prices at different times and from various sources of supply. Only under conditions of stability, competitive sources of supply and general absence of unproductive assets (or idle assets), the value of assets provide meaningful comparison. Value of sales subsumes difference in product, market and terms of sales which include under or over invoicing. Only if we assume that entrepreneurs are operating in similar markets, these values would provide indications of size of operations; not of the factory size because of the shift factor. Employment given similarly in technology, provides an indication of size of operation -- a large unit operating single shift and a small unit operating three shifts may have some employment.

Of the twenty two units of Asian TNCs from developing countries the size according to these three characteristics are reported below (Table 20).

However, size distribution by size of investment is available for the sanctioned units and this is reported below (Table 21).

Table-19: Loan from Parent Company by Selected TNC units Incorporated in Bangladesh for which Returns with Bangladesh Bank are Available and Data for Loan are Recorded therein. (These do not Refer to Survey Units As Such).

Country	Sector	Head Office			Subsidiary			Affiliates		
		1984	1983	1982	1984	1983	1982	1984	1983	
1982										
U.K.										
	Trading (7)	0.5	0.6	0.3	--	--	--	95.8	17.2	14.6
	Manufacturing (15)	--	--	--	8.7	1.5	2.2	112.6	112.6	--
U.S.A.										
	Manufacturing (6)	53.4	87.6	68.0	--	--	--	63.85	57.19	27.7
Netherlands										
	Manufacturing (4)	14.5	22.1	15.8	--	--	--	4.3	6.6	6.4
Switzerland										
	Manufacturing (2)	4.6	4.6	1.29	--	--	--	3.1	3.1	--
Japan										
	Manufacturing(2)	125.1	24.9	138.3	--	--	--	--	--	--

Source: Bangladesh Bank, Department of Statistics.

Notes: Figures in parenthesis indicate number of companies. None of the surveyed units expressly indicated loan from parent company.

Table 20: Size Distribution of Asian TNCs in the Survey Sample

Sector	Total Assets (Tk. Million Total Sales(Tk. Million)										Employment ('00)		
	1	1-5	5-10	10-25	25-50	1	1-5	5-10	10-25	25-50	1	1-5	5-10
Textile	1	4	5	2	1	--	5	--	6	--	--	10	1
Chemical	--	--	1	1	--	--	--	--	2	--	1	1	--
Metal	--	--	1	--	--	--	--	--	1	--	--	1	--
Leather	1	--	--	--	--	1	--	--	--	--	1	--	--
Engineering	--	1	1	--	--	--	--	2	--	--	--	2	--
Electrical	--	--	1	--	--	--	--	--	--	--	--	2	--
Other	--	--	1	--	--	--	1	--	--	--	--	1	--
Total	2	5	9	3	1	1	10	2	9	--	2	17	1

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Table 21: Size Distribution of Sanctioned Joint Ventures since 1974-75.

(Taka in Million)

Country	Less than 1 mil.	1-5	5-10	10-15	15-25	25-50	50-100	100+
Hong Kong	2	5	7	-	1	-	-	1
Singapore	1	3	4	2	1	-	4	-
South Korea	-	3	2	2	2	-	-	2
Thailand	-	2	3	1	-	-	1	-
India	-	1	1	2	-	1	-	-
China	-	-	1	-	-	1	-	1
Others	1	2	1	3	-	-	-	-
Total								
Developing Countries	4	16	19	10	4	2	5	4
Total								
U.K.		2	3	1	1	2	2	-
U.S.A.		1	4	1	1	-	-	1
Japan		1	-	-	1	1	-	1
Netherlands		-	-	-	3	-	1	1
West Germany		2	1	-	1	-	-	1
Sweden		-	-	1	-	-	-	1
Switzerland		1	1	-	-	1	1	-
Canada		-	1	-	-	-	-	2
Italy		-	2	-	-	-	-	-
France		-	1	-	-	1	-	-
Belgium		1	-	-	-	-	-	-
Total								
Developed Countries		8	13	3	7	5	4	7

Source: Directorate of Industries, Government of Bangladesh.

It is seen from the tables that none of the TNCs are big in size; Asian TNCs are smaller.

Factor intensity has been measured by dividing total investment by labour employed. The picture that emerged is given below (Table 22).

Table-22: Factor Intensity of Selected Joint Ventures in Bangladesh. (Ratio of Capital Invested over Labour, Taka in Million).

	Asian TNCs				Developing Country TNC		
	Upto .25	.25-50	.50-1.0	1.0-3.0	Upto .25	.25-50	.50-1.0
Textile	3	5	3	-	2	-	-
Chemical	-	-	1	1	-	-	1
Metal	-	1	-	-	-	-	-
Non-Metal	-	-	-	-	-	1	-
Engineering	-	-	1	1	-	-	-
Electrical	-	-	1	1	-	-	-
Others	-	-	-	1	-	-	-

Source: Sample Survey

It is seen from the table that the units are fairly labour intensive.

Employment Pattern

Of the 20 Asian TNCs in the sample, fifteen reported presence of expatriate either in management or as technical or as quality controller or as advisors. The minimum employed is 1 and maximum 7. Ratio of expatriate person to the total of supervisory, management and professional personnel employed was calculated and the result is reported below (Table 23).

Table 23: Ratio of Expatriate to Local Supervisory, Management and Professional Employee in Selected Joint Ventures

Sectors	Asian TNCs					Developed TNCs			
	.02-10	.10-25	.25-50	.50-75	No.	.02-10	.10-25	.25-50	No.
Textile	2	2	4	-	8	1	1	2	-
Chemical	-	-	1	1	2	-	1	-	1
Electrical	-	1	1	-	2	-	-	-	-
Leather	-	1	-	-	1	-	-	-	-
Engineering	-	1	-	-	1	-	-	-	-
Metal	-	-	-	1	1	-	-	-	-
Non-Metal	-	-	-	-	-	1	-	-	1
Total	2	5	6	2	15	2	1	1	4

Source: Sample Survey

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The survey also produced wide variation in the ratio of skilled to unskilled labour produced (Table 24).

The survey data regarding employment of professional in the management as a ratio of other management personnel excluding supervisors is reported below (Table 25). One should note that data only refers to engineers and technical personnel as professionals.

Table-24: Ratio of Skilled to Unskilled Labour

Sectors Less	Asian TNC Ratio			Developed TNC Ratio		
	Less than 1	1-2	2-3	Less than 1	1-2	2-3
Textile	4	6	1	-	2	-
Engineering	-	2	-	-	-	-
Electrical	-	-	2	-	-	-
Chemical	-	-	2	-	-	1
Leather	1	-	-	-	-	-
Metal	-	1	-	-	-	-
Non-Metal	-	-	-	-	-	1
Others	-	-	-	-	-	-

Source: Sample Survey

Table-25: Ratio of Professionals to Other Management Personnel

Sectors	Ratio of Asian TNC					Developed TNC Ratio	
	Less than 1	1-1.5	1.5-2.0	2.0-2.5	None reported	No	Less than 1
Textile	5	4	-	-	1	10	2
Engineering	-	-	2	-	-	2	-
Electrical	-	2	-	-	-	2	-
Chemical	-	2	-	-	-	2	-
Leather	-	-	-	-	1	1	-
Metal	-	-	-	1	-	1	-
Non-Metal	-	-	-	-	-	-	1
Others	1	-	-	-	-	1	-

Source: Sample survey

The survey also produced information on female employment in labour force. The data on female employment in supervisory position or management was missing.

Table-26: Female Employment in Selected TNCs as a Ratio of Total employment of Production labour.

Sector	None Reported	1%-50%	50%-75%	75%-90%	90%+
ASIAN TNCs					
Textile	-	1	6	4	-
All other	9	-	-	-	-
DEVELOPED TNCs					
Textile	-	1	-	1	-
All other	2	-	-	-	-

Source: Sample survey.

Imports of Geographical Distribution

The sources of imports for textile units are tied to TNC home country or buyer. Two units reported that most of its raw materials come from the USA or EEC countries; those also supply the products to those countries. The woollen textile units reported getting 50 per cent of its raw materials from Japan and South Korea. A synthetic unit receives its raw materials mostly from Japan and Hong Kong. All seven other garment units receive raw materials in various proportions from Hong Kong, Taiwan, Singapore and South Korea. There is smaller amount of supply from Pakistan for a terry towell units. In the case of chemical unit the source of import is Japan and China. For the metal unit, the main source of supply is Thailand (70%), and there is small quantity of import from USA (3%), Singapore (20%), India (3%), Belgium (2%), and China (2%). The leather unit procures chemicals locally; the source of supply being EEC countries. For electrical units the sources of supply are Singapore, Taiwan and Hong Kong. For the engineering units the sources of supply are varied including India, Taiwan, Thailand, Hong Kong, and Singapore. The food unit procures raw materials locally.

Channels of Purchases of Inputs and Local Sales

Principal source of input supply depends on the nature of the industry and market destination. Of the 12, only one produces for local market and others sell abroad; some of these are located in the export processing

Table-27: Geographical Distribution of sources of Import of Raw Materials.

Country of origin of Foreign Partner	Type of Output	Primary sources of Raw material	Minor Sources of Raw Material	Local Purchases	Sales Destination
Singapore (4)	Garments	Singapore Hong Kong S.Korea Japan		Negligible	USA, EEC
Hong Kong(5)	Garments	S. Korea, Japan Taiwan	EEC, USA	Negligible	USA, EEC
South Korea(1) Japan (1)	Garments Garments	Hong Kong S. Korea Japan	Hong Kong	Negligible	USA
U.S.A.(1)	Textiles	S. Korea Pakistan	EEC, USA	Negligible Negligible	USA, EEC USA
Thailand (1)	Fishing	Hong Kong Local	Thailand	N.A.	Thailand, Japan. Local
(1)	Metal	Thailand	USA, India Belgium Singapore	Negligible	Local
Singapore (1)	Electrcial	Singapore Hong Kong		Negligible	Local
(1)	Plastic/PVC	Singapore Hong Kong		Negligible	Local
Hong Kong (1)	Engineering	Hong Kong Singapore	Taiwan	Negligible	Local
(1) (1)	Electrical Leather	Hong Kong Local	Singapore EEC	Negligible Mostly local	Local Hong Kong East Asia. Local
China (1) (2)	Engineering Chemical	China China	Japan USA	Negligible Negligible	Local Local
Luxemberg (1) Netherlands (1)	Non-Metal Paints & Varnishes	Canada EEC		Small amount Nil	Local Local

zone, and one which produces woollen sweaters (not included in the survey) also procures raw materials locally. For 10 of these supply comes from abroad and only one (woollen) gets 50% of its supply from a local producer. The sources of supply varies; for 3 all the supply comes from the Asian TNCs directly; for 2 supply is sent by buyers in developed country and negotiated with Asian TNCs who are partners in the venture. For 2 foreign buyer sends supply directly and the negotiation is not through the Asian TNC partner. For two, the supply comes from local affiliates of TNCs (joint ventures) on a sub-contracting basis and in one case supply comes from developed country TNC affiliate in Asia, (other than Bangladesh). In two chemical units 80 per cent of raw materials (in value) come from the Asian Partners. In two electrical units the source of supply is the Asian TNC, about 20-25 per cent of raw materials are procured from local sources (producers or importers); in the engineering sector 90 per cent of supply is procured from abroad through trade channel with the help of Asian TNC partners. In the metal unit, all raw materials are locally procured. The garment units sell abroad, only one unit reported 70% sale in local market; all other except to a limited extent leather unit (25%) generally sell in the local market.

Export and their Geographical Distribution

The export market mainly concerns the 9 garment units, of which three export exclusively to US market, and all other to USA and EEC markets. The share of US market varies from 65 to 85 per cent of export value and 35 to 15 per cent go to EEC. Amongst the EEC countries, UK, France, Sweden, Italy, and West Germany have been the buyers in various proportions in various years for the different companies. Food company is exporting mainly to Middle East and the leather company to East Asia.

Cost price Margin and Profits

The operating cost structure of the 20 Asian TNCs by industry group is given in the table below. The table also reports the profit earned as a percentage of operating cost which indicates the cost and price margin.

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The operating cost is exclusive of duty paid, cost of loan finance and depreciation, if any.

Table-28: Cost Structure and Profit on Operating Cost

Sectors	(Percentages)					
	Raw Materials	Wages	Salary	Utili- ties, etc.	Tech- nology	Profit on Operating cost
Textiles (1)	76.5	12.3	7.2	2.1	1.9	9.5-11.5
Metal (1)	82.0	10.0	2.0	1.0	5.0	5.0
Electrical, average (2)	84.5	9.5	3.5	2.5	-	12.5
Engineering*(2)	78.0	13.0	5.3	3.7	-	7.5
Chemical (1)	86.4	4.6	4.4	2.3	2.3	7.5
Leather (1)	90.5	5.7	2.3	1.5	-	6.7
Food (1)	82.0	9.0	2.0	7.0	-	N.A.

Source: Survey data

It will be seen from the table that the industries are raw material intensive units. The textiles units seem to vary widely in cost structure due to product variation and technology. Only three Unit paid technology fee in royalty. Salary and wage cost are often high for units having lower utilization of capacity.

Table 29: Cost Structure of Developed Country TNCs.

Country	Sector	(Percentage)					
		Raw Material	Wage	Salary	Utili- ties etc.	Tech- nology	Profit Operating cost.
Japan	Textile	82.0	12.0	4.8	1.2	-	10.0
USA	Textile	90.0	3.0	6.0	1.0	-	30.0
Luxemberg	Cement	41.0	21.0	10.0	18.0	-	17.7
Netherlands	Chemical	82.0	8.0	6.5	3.5	-	N.A.

Source: Sample Data.

Location in Host Country

All the units are located in and around Dhaka and Chittagong. We have examined the location of 101 sanctioned units. Of these 78 are in and around, Dhaka, Chittagong and Khulna; eighteen are in rural areas;

and the rest are in semi-urban areas. Again, only five are in Export Processing Zone (EPZ) and thirty two in industrial estates.

In our sample, all 24 are in urban areas in and around Dhaka and Chittagong; three are in EPZ and five in industrial estates.

Technology Transfer

Technology was brought in by the foreign company, even though in some cases similar or same technology existed in Bangladesh. Technology was embodied in the machinery imported.

All Asian joint venture firms surveyed confirmed that the type of technology and machinery were either same or similar to those used in parent company in home country and where the parent company is not in this line of production or is a newly formed company for this purpose, the technology is used in their country or by its affiliates. Thus no new technology was imported. The dominant source of imported machinery in textile was Japan followed by Taiwan. In the leather sector, it was Taiwan and South Korea. In the metal sector, it was Belgium, in the electrical sector it was Taiwan and Japan. In the engineering sector it was U.K., India and Taiwan. In the chemical sector it was China and Pakistan. About 40 per cent of the firms confirmed that the factor intensity was exactly the same as in the parent company or home country, 30 per cent of the firms confirmed that it was different because of more labour use and another 30 per cent indicated that they were about the same or not so much different. It is interesting to note that those with export orientation confirmed same factor intensity with greater confidence.

Of the Asian joint venture units, 45 per cent confirmed that the technology to be the latest available at the time of purchase and installation of machinery, another 40 per cent admitted that though these were not the latest but of fairly recent origin and only 15 per cent admitted that technology was fairly old of which 5 per cent said that these were no longer in use in the home country. In terms of sectors, textiles claimed to be of latest or recent origin though one admitted the technology to be old. In the leather sector the units indicated that the technology was of fairly recent origin. In food sector, technology was indicated to be old, as in some of the chemical and engineering and electrical units.

As to the query on adaptation, thirty per cent of Asian TNC joint venture units indicated some degree of adaptation required either for use

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of locally produced machinery or to install a supplementary labour intensive process. The metal engineering and chemical sector admitted of such adaptation. In the textile sector adaptation was more technical in the sense that such adaptation was needed to facilitate multiple use of some machinery or to suit modification of product mix. However, overwhelming units indicated no adaptation at all. It is to be noted that of the thirty per cent admitting adaptation, only five per cent said that it was carried wholly by foreign technicians, 20 per cent wholly by local technicians and another five per cent indicated it to be a joint work.

None of the Asian TNCs joint ventures introduced any new product, or used any new material or new production method. Besides the modification, the firms used no new machinery. Only 10 per cent of the Asian TNC joint ventures indicated some involvement in R&D all of which are in engineering, chemical or electrical sector, one reason for this is that even the parent companies are not engaged in meaningful R & D activity.

All the Asian TNC joint ventures admitted in training programmes primarily for production workers, mostly carried out in Bangladesh. Only three per cent of them admitted of training in the parent company home plants. There was training for supervisors as well but for 50 per cent of the companies. Training for management was indicated by 10 per cent of the companies. The training expenditure is quoted to be 1 per cent of wages in the first year of operation and insignificant there after.

Finally, only 20 per cent of the firms indicated some provisions for maintenance and improvement of technology in the contract between the host country company and parent company.

Benefits of TNC Investment in Bangladesh

In discussion of benefits one would like to have rigorous quantitative measures, but within the purview of this survey this was not possible, nor it seemed meaningful. Hence, the observation would be qualitative in nature.

Augmentation of Developmental Resources

All the development plans of Bangladesh targetted a high rate of growth in the industrial sector. One of the constraints has been lack of resources, particularly foreign exchange. Public sector has historically played the leading role and so-called commanding heights are still its preserve. However, private sector has been increasingly encouraged to

play a major role. Ten years of reversal of policy and liberal credit arrangement have made the private industrial investment more visible than before, even though much of the funding came from the public sector financial institutions. Even then during 1980-85 sanctions for private industrial investment (Tk. 33860 million) was far short of target and actual investment was only 11240 million. The share of foreign private investment in the sanctioned amount was only Tk. 2990 million of which estimated inflow was possibly around one-third including reinvestment and equipment supply [7]. Thus in manufacturing sector inflow of foreign funds was not significant at all.

Technology Transfer

From the list of sanctioned units for foreign collaboration, it appears that no attempt was made to transfer capability of hardware technology development. None of the units attempted development of technological capabilities beyond training in the field of normal operation and routine maintenance of imported machinery. Technology transfer in all cases was confined to training and supply of instruction material and at times drawing of equipment. Even erection in many cases were done by expatriates. This is largely due to the fact that procurement of equipment was foreign partner induced and identification of type and scale of technology was his job [10]. Hence it may be concluded that besides software no technology has been transferred as yet through foreign collaboration.

Development of exports

In recent years, there has been some structural change in Bangladesh exports. The new additions with increasing significance are garments and fish. The contribution of the foreign collaboration in the development of garment industry is notable; it has now gained its own bearings. In the other sector the contribution of foreign collaboration was neither the harbinger nor dominant. However, gross value added and net foreign exchange earning from garment sector is small.

Substitution of Imports

The foreign collaboration has been largely directed towards local market leading to substitution of imports of finished goods by assembly of components and some manufacture. It has also introduced new product, formerly not available in the local market and created new demands. There is a strong possibility that it may have created increased import

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dependence; since much of the raw materials are imported. There has been no attempt of substitution in case of major imports in this sector, viz. capital goods, staple fibre, fertiliser, cement, etc.

Net Effect on Balance of Payments

Bangladesh is heavily dependent on foreign aid and remittance to meet its widening gap in balance of payments. There has been no significant increase in exports in real terms from the foreign collaboration while the import needs have increased and is likely to increase further. The Third plan expects no significant import substitution of raw materials needed by these private sector units. Hence the net effect is likely to widen balance of payments gap.

Employment Effect.

The establishment of units with foreign collaboration either for export (garments) or import substitution has created employment opportunity when investment in public sector manufacturing has become restricted.

Spread of Linkage Effect

It appears that some spread effect due to increase in demand for sundry items and services and linkage effect for supply of minor items (i.e. labels for garments) have created some positive impact.

Social Impact

The employment of unmarried or widowed semi-literate rural or semi-urban women in garments industries has created a social impact in liberating women from traditional bondage but have also made them victim of many adverse conditions.

Skill Development

However, there is little noticeable skill development, particularly in textiles.

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ECONOMIC DEVELOPMENT AND LABOUR USE: A REVIEW

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INTRODUCTION

In this paper we shall review the relationship between employment growth and development strategy, or more specifically between employment growth and economic policy. The current literature is filled with discussions of how the policies followed in a large number of countries have paralysed employment growth. Almost all of those discussions are concerned with the growth of the demand for labour, and therefore, imply some sort of explanation of why the demand for labour grows less rapidly than does output or less rapidly than necessary to make a satisfactory dent in the problem. It is therefore convenient to begin with a discussion of those explanations that are concerned primarily with the demand for labour.

The kind of unemployment that economists understand the best and have the most unambiguous policy recommendations for is that due to a deficiency of aggregate demand, the kind of situation out of which Keynesian economics was born. While these may be individual developing countries here and there or now and then where this explanation is generally relevant, few economists would accept it as widely applicable. Aggregate supply is rarely perfectly elastic in a developing country, so that pushing ahead with deficit financing would be expected to produce inflation or balance of payments problems or both. It would however, be wrong to dismiss the aggregate demand argument completely. Increased 'aggregate' demand does not necessarily mean greater demand for each commodity, and there are some commodities that supply of which is perfectly elastic. In particular, it is frequently the case that more demand would elicit more output and more employment without problems, if it could be directed at specific sectors.

Increasing unemployment and under-employment, side by side with growth rates exceeding UN targets, lead some to recommend raising these targets (say from 5 per cent to 8 per cent) so that countries without having to change their structure or growth path, can solve both problems

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simultaneously. It leads others, for example, the Indian Planning Commission (at least until recently) to support the 'secondary strategy', mainly public works, to mop up the unemployment left in the wake of the pursuit of a basically unchanged primary development strategy. Still others point out that the old (and slightly tarnished) growth now, distribution later' argument can be given new life by substituting employment for distribution. Finally, some politicians, and also technicians, have been increasingly heard to say that LDCs must now be willing to give up growth for the sake of more employment and better distributive outcomes.

Most contemporary LDCs find themselves with an initial stock of unemployed or under-employed labour; moreover, they are faced with labour force explosions, resulting from prior population explosions, which threaten to substantially augment this stock over the decades ahead, even if (to take an extreme case) planned parenthood programmes were to be instantaneously successful in achieving zero population growth as of tomorrow.

Some of the literature has argued that since employment and labour productivity are at loggerheads, countries are immediately confronted with an output/employment conflict and can "solve" their employment problem only by making inefficient output mix and technologies choices. Elsewhere the dual nature of LDCs has been recognized and the employment problem defined in terms of the need to reallocate labour from low (or even zero) productivity occupations in one sector, subsistence agriculture, to higher productivity employment in another,

Experience during the 1960s revealed a variety of aspects about development that were inadequately appreciated at the beginning of that period. In the broadest terms what became clear was that the mere achievement of an acceptable rate of growth of Gross Domestic Product—say 5 per cent or more per year—was not assurance that development was proceeding in a satisfactory fashion now seems clear that good growth rates of GDP can be achieved for 5 or 10 years by means that create a set of conditions that in effect impede or prevent continued growth. We also mention that just any sort of growth does not necessarily resolve a number of vital social and economic problems. Among such unresolved problems is that of unemployment. Unemployment has both economic and social implications that are universally recognised as harmful both to society at large and to the individual who is without work. A development process

that fails to produce sufficient employment opportunities is therefore not one that is acceptable.

A BRIEF REVIEW OF EMPLOYMENT THEORIES

A solid body of theory on the subject of employment and growth in underdeveloped countries does not really exist. The immediate important task of economic science seems to be that of gathering dispersed factors, refining them, and developing an integral analysis within this vast field of economic policy.

Three years ago the ILO began its World Employment Programme; before then it was possible to identify, especially in Latin America, four 'models' or positions.

The first followed the classical school, which states that full employment would simply be a by-product of free competition, under free competition productive resources would be permanently well allocated, with an adequate distribution of national product among different factors of production and with a rate of economic growth consistent with the capacity of the economic process to accumulate capital, thus increasing productivity. Within this model, which was supported by almost all countries a relatively short while ago. The elimination of poverty among great masses of population was considered only a matter of time, of adherence to international trade laws.

The second model utilised to deal with problems such as unemployment and a low income level in poor countries is based on the need for stimulating aggregate demand for goods. To some extent, this model is based on Lord Keynes' theory. According to the conclusions of Lauchlin Currie, the problem of poor countries does not rest so much in scarcity of capital, or in constraints deriving from the deficit in the balance of payments, as in insufficiencies of effective demand. If effective demand is stimulated, mainly through the implementation of significant investment plans in housing, a sector where demand is greatly restrained, a series of impulses will be generated in other economic sectors, which will then grow more rapidly, creating a great number of employment opportunities.

In contrast to these two concepts, with possibly incomplete since they do not take into account structural problems of developing societies, Fei and Ranis in their "Development of an Economy with a Labour Surplus"

propose a model based on the existence of natural process of labour absorption from the traditional sector (with a labour surplus because of unemployment and under-employment) to the modern capitalist sector (where the continuous process of investment creates the possibility of additional jobs). The labour surplus would vanish if the investment process could be performed without interference. The main task of economic policy would be to ensure the existence of a "favourable institutional framework", in order for the absorption process to work with maximum flexibility. A necessary condition for this is, for example, that wages in the modern sector do not go beyond subsistence level: these enterprises will be able to reach a maximum level of profits to be reinvested.

Another condition for optimal absorption is that enterprises adopt production processes characterised by labour intensive technology. Within this process, the agricultural sector has a two-fold role; on the one hand, to provide a labour supply with a low wage level and, on the other hand, to increase agricultural productivity, thus creating an additional labour surplus, which will be transferred to the industrial sector to strengthen its ability to reinvest profits.

Paul Prebisch presents in his "Transformation and Development" (1970) another, global policy of which a higher level of employment is the central goal. His book marks the culmination of a long process that he personally headed from 1950, in the Economic Commission for Latin America. He describes the urgency to promote a greater level of employment by planned and deliberate action. This action must be able to overcome the traditional constraints on steady and accelerated growth. His final point is the existence of a "dynamic insufficiency" in the economics of the region, because of which it is necessary to increase dynamism by higher rates of growth of the national product. He points out the necessity of providing for the immediate necessities and expectations of the great masses of population and not waiting for solutions based on the passage of time or on the mere process of capital accumulation in the modern sectors. Prebisch speaks of "correcting the dynamic insufficiency of the economy with a great social orientation". This means not only dealing with the basic needs of poorest groups of the population but also searching for a type of growth that will supply the maximum quantity of new job opportunities, both in industry and in agriculture. Agrarian reform turns out to be of significant importance to Prebisch, as does his preoccupation with revindicating the role of the rural sector, in the light of the impressive growth of cities.

Prebisch says that the employment problem in development countries cannot be solved by a simple process of accumulation in the capitalist sectors. But he concludes that the solution essentially depends of a "critical rate" of investment and an increase in productivity. In essence, the solution continues to depend on the acceleration of growth in the modern sector where a major share of savings has been available. This sector, however, has occupied a relatively unimportant place within the global context.

DEVELOPMENT POLICIES AND EMPLOYMENT GROWTH

CAPITAL FORMATION

In many economic growth models, especially of the pre-1960 period, primary, even exclusive, emphasis was placed on increasing the rate of capital formation. Evident also was (and is) the fact that the most apparent difference between rich countries and poor countries is the amount of available capital per labourer. For these and possibly other reasons, development policy has placed, and continues to place, great emphasis on capital formation. In pursuit of higher rates of capital formation a great variety of inducements have been offered the inventor. Such inducements have taken the form of tax holidays, tariff exemptions, overvalued exchange rates, import licensing advantages, and many other arrangements. In almost all cases the inducement takes the form of making the cost of capital lower than it would otherwise be. Evidently this type of approach to encouraging investment created incentives to use capital at the expense of labour, where such was technologically possible.

This set of policies to raise the investment rate may also be defended on the grounds that, though it may sacrifice employment in the short run, the greater capital intensity will produce both a higher growth rate and a higher saving rate from a given level of income, and thereby lead to a higher rate of capital formation (than would be achieved with less capital intensive techniques). Over a period of several years therefore more employment opportunities will be generated than would be the case where capital formation not subsidized.

Empirical and qualitative evidence accumulated by a large number of investigators suggest that substitutability between capital and other inputs is substantial, and economic agents do respond to factor price signals. Therefore, policies that result in reducing the cost of capital relative to

other inputs will result in increased capital intensity. The assumption of rigidities that underlies capital output and foreign exchange-saving gap models and policies built from those models are now rather widely believed to have penalized employment growth. The sources of substitution are not only within the same activity, but among activities as well. Thus, the measures aimed at increasing the rate of capital formation have contributed to the emergence of types of activities—as well as techniques of production—that are alien to the resource endowment of the developing countries. This alienness seems to have penalized further the kind of adaptations and modifications that might have produced greater labour absorption.

While many observers now believe that the form that the emphasis on capital formation has taken has penalized employment growth, there is less evidence on how much the penalty has in fact been. Estimates of the elasticity of substitution and of the wage coefficient in demand-for-labour regressions suggest considerable variation among sector. This variation suggests that had more suitable factor prices prevailed, a different set of activities would have emerged as well as less capital intensity in all activities. The question of how much the subsidizing of capital has penalized employment is important because we need to know the extent to which simple elimination of capital subsidies would help. Also, of course, there may be costs involved that would have to be weighed against the increased employment.

WAGE POLICY

Along with policies that reduce the cost of capital there are many developing countries that seek actively to raise wage rates. Among such practices are minimum wage laws, laws that make dismissal difficult and expensive, laws that require many fringe benefits, and extra legal pressures to keep wage rates rising. Such practices are often motivated by the most humanitarian reasons, and do in fact usually help those who work. But the same arguments and evidence referred to above indicate that rising wage rates do hold down the growth of employment. However, the design of a correct wage policy does not immediately follow from this fact. Wage earners are, in most developing countries, a minority, and it is not clear how labour payments affect the various other categories of work. Public sector employment, often large, may also be affected in a variety of ways by wage rate changes. Employment in the service sector is also affected, probably negatively, but we do not really know exactly how.

Despite all these qualifications and complexities, most observers would agree that both employment and output objectives are furthered by constant wage and other labour payments. Therefore, those policies that push up wage rates are generally regarded as harmful to the employment objective. Similarly, where incentives seem necessary, a system based on the rate of increase in employment, rather than the level of investment is preferred. Still we do not know how harmful it might be, or indeed exactly how the employment picture would look, if payments to labour were constant over time. This too would be useful to know. Similarly, urban wage rates in many countries are rising in the face of increasing numbers of unemployed. The exact process by which wage rates are pushed up in such circumstances is not completely clear.

Another side of the wage picture has to do with the structure of wages. Structure here has two dimensions. The first has to do with relative wage rates among various skills. Such variation often misrepresents both relative supply and social productivity.

Wage rates that are simply "too high" can be corrected to some extent by devaluation, but where the labour market is so imperfect that the relationship among wage rates in different activities is distorted, devaluation is not the appropriate instrument. The existence of high wage and low wage sectors is commonly observed. Less frequently noted are the distortions in wage rates among several sectors due to a variety of causes. The policy objective should be to eliminate these sources of distortions, but such a statement does not help much until we can pinpoint the source of the distortions. The literature and the policy maker have concentrated on 'the' price of labour relative to 'the' price of capital. This, of course, is a fundamental question, but it now also seems that the structure of wage rates in the economy is important in understanding employment issues. Finding ways to correct this structure may be more difficult than correcting the average labour capital price ratio. The other dimension of the structure of wages has to do with urban-rural differences.

IMPORT SUBSTITUTION

The most frequently found approach to development policy is that characterised as import substitution. The details of this approach have been explored at length by numerous economists, and attention here is limited to the employment effects of that approach. The essential nature of import substitution is simply the imposing of impediments on the importation of certain products, particularly manufactured consumer

goods. It is immediately evident that such an approach means that new investible resources are allocated very much on the basis of demand conditions, with little reference to supply capabilities. In particular, there is the presumption that the imports being curtailed are less demanding of those resources with which the developing countries are most abundantly endowed. Otherwise such products would presumably, have already been produced domestically. For such an approach to be very satisfactory requires significant adaptation as to techniques of production as well as increases in overall productivity. Such adaptation has occurred rarely, partly because of the kind of factor pricing noted above, and generally the import replacement activity remains a virtual mimic of that in the advanced countries.

Import substitution has affected employment in another important way. As a new activity is created behind protective barriers, a growth rate of output in excess of that to GDP is expected. After this import replacement is accomplished however, the growth rate will decline. Further growth will depend primarily on the rate of growth of GDP, since only now and then have these new activities been able to enter the export markets. At the same time some more or less regular increase in labour productivity is expected. Such increases are due to a learning effect (on the part of both labour and management), economies of scale, and occasionally new technology embodied in new machines. The consequence of this increased productivity on employment depends on what happens to wage rates and to output and the value of the elasticity of substitution between capital and labour.

The import substitution strategy has also accounted for a considerable part of the factor price distortion perviously noted. This approach to development has had other consequences for employment, but the points made above are surely fundamental. The great policy moral of the import substitution experience seems to be that a development strategy what links directly with domestic factors supplies and indigenous institutions is necessary. That this involves much greater attention to exports is generally agreed, but it is less clear what else is involved, and less clear exactly how to establish a development strategy that is more indigenously oriented than is import substitution.

PRODUCTIVITY GROWTH

In recent work on the sources of growth, increases in productivity have been shown to be as or even more important than increasing inputs. A

growing economy is therefore necessarily one in which the productivity of labour is growing, and policies or circumstances that dampen productivity growth necessarily dampen output growth. Also it has been shown that productivity growth, with wage rates (deflated by product prices) constant, should encourage employment growth. A rise in productivity with wage rates constant is equivalent (and more practical) to a decline in real wages with constant productivity. But if the rising productivity is to produce increased employment, not only must wage rates be constant but output must expand. The policy objective then must be to increase productivity within a context that permits growing output. The productivity growth must also be such that it does not favour the use of capital more than that of labour. The problem of growth of demand has already been noted. Consider now some of the issues associated with technical change as a major source of increased productivity.

The frequently noted point that the technology of the advanced countries is not suited to the factor supply situation in the developing countries is of course vital. Therefore the simple borrowing of technology creates many problems, among which are those having to do with employment.

Technological change that penalizes employment must take one of two forms. It must affect more favourably those activities that already make use of relatively more capital than do other available techniques. In this event, optimal techniques at prevailing factor prices become even more capital intensive than they were. Conventional wisdom has it that technology has developed in this fashion in the West largely because of increasing costs of labour. When such technology is transferred to a labour surplus economy, it means that even with a much lower wage-capital cost ratio the relatively more capital intensive techniques may still be optimal. This getting factor prices to reflect relative factor supplies may not be sufficient to prevent increasing capital intensity, if technology is imported from capital rich countries and no modifications or adaptations are made in that technology. In this case the technological change eventually makes the more labour intensive techniques technologically inefficient, i.e., they are no longer economic at any set of factor prices. To choose a technique that is technologically inefficient would, in this event, mean using not only more labour, but also more capital. It is indeed difficult to define a situation in which sacrificing output to get greater employment does not also result in a higher capital output ratio. In choosing a more labour intensive technique does in fact result in lower output than is possible with another technique and less labour, the marginal product of labour must be

negative. This result almost necessarily implies differing technologies between the relatively more and less capital intensive techniques, and therefore creates a strong likelihood that capital productivity also falls if the relatively more labour intensive technique is used.

The second form that technological change may take that can affect employment is through its impact on produced inputs. Usually emphasis is placed on the substitutability between capital and labour with no reference to produced inputs. Changes in the produced inputs or changes in their quality may, however, impose technological restrictions on productive processes. Raw material processing and handling is sometimes in this category. Changing speeds of operation in one part of a process often require changes elsewhere that substitute capital irrespective of changes in wage and capital costs. Similarly, the argument is often noted that tractors do not so much replace labour as that they are land using. It is this latter characteristic that penalizes employment. On the other hand, an improved seed that results in quicker maturing and permits two crops per year is in effect equal to an increase in land and thereby is employment creating. We shall come back to the technology issue later on.

FOREIGN TRADE POLICY

There are wide range of ways in which foreign trade policy has affected employment growth. As already noted, import replacement activities are generally less labour intensive than are export activities, and the common neglect of exports has doubtless produced an employment growth rate below what it would have been had exports grown along with output. Two specific areas of policy are especially important exchange rate policy and policy toward foreign investment.

EXCHANGE RATE POLICY

The ubiquity of the overvaluation of domestic currency and the consequent employment and export penalizing effects have been emphasized often. Less attention has been given to what constitutes the 'right' exchange rate. It is generally recognized of course, with any form of protection, and exchange rate that equates demand and supply for foreign exchange will be less favourable to exports than would the rate prevailing under free trade. (This fact means incidentally that when capital goods are admitted free of duty, they are admitted at exchange rates more

favourable than would have been the case with free trade). There are however, more complicating difficulties. A country that depends heavily on one or two export commodities that are doing well can support an exchange rate that puts the costs of a large part of the activities of the economy above foreign prices. The problem is more severe if the export sector has few technical links with the rest of the economy. The extreme example of this phenomenon is Kuwait where virtually everything tradeable is imported. Kuwait is almost unique of course, but it does illustrate the nature of the problem. Substantial inflows of aid and foreign investment also help support an exchange rate that omits misleading signals. Thus defining an exchange rate in terms simply of maintaining a strong balance of payments position is generally not a sufficient definition of a correct exchange rate for allocative purposes. The set of circumstances that can produce an overvaluation also of course, militate against exports and add to the inducements to use foreign inputs at the expense of domestic ones.

There is another issue that is linked--to the exchange rate. The import substitution approach to development provides protection for infant import replacements. It does not provide protection for infant exportables, but of course, penalizes them. There is no priori reason why current imports are more suitable for protection than are new exports. But export protection is rare. In some sense what is needed is protection for domestic activities, but we are not very clear on how to devise policies that do that. This point has implications for exchange rate policy as one form of export protection is an 'undervalued' domestic currency. Undervalued is in quotes to emphasize that the definition of equilibrium exchange is ambiguous in the context of the developing country.

POLICY TOWARD FOREIGN INVESTMENT

Foreign investment has many links with employment. When capital formation was viewed as the primary or exclusive source of growth foreign investment was considered simply another source of capital and thereby a source of employment. Questions that have arisen concern the extent to which foreign investment is of a form and content that is most suitable for the economy. In many respects the employment problems caused by foreign investment are the consequence of the kinds of policies reviewed in the preceding pages. There are indeed reasons to believe that these policies affect employment in foreign firms more directly than domestic firms because the former are better equipped to evaluate opportunities and explore alternatives. Some evidence exists to suggest that foreign

owned firms are likely to choose more labour intensive techniques, where these are profitable, than is the domestic firm.

The chief source of difficulties arises from the fact that the foreign firm often has access to funds and to raw materials to prices different from those faced by domestic firms. In this even domestic policies may not be very relevant to the decision making of the foreign firm. This is surely correct to some extent. It is, however, equally important to emphasize that in many instances, probably in most, the various incentives offered to foreigners are unnecessary to attract them, and do encourage activities which are less domestic resource using than they would be in the absence of the incentives. These incentives also tend to encourage firms (domestic and foreign) to locate in central cities where access to imports is relatively easy. (This location effect is increased if the central city is the seat of government). It is also apparent that foreign firms find it politically convenient, and economically possible, to pay wages that are generally higher than would be necessary to attract their required labour force.

Two generalizations appear justified as far as the relationship between foreign investment and employment are concerned. First, the whole range of policies described earlier as dampening labour absorption affect foreign firms in a direct way. Modification of these policies therefore should relieve some of the difficulties associated with the foreign firms. Second, the foreign firms are strategic agents in exporting. Encouraging them to establish in an economic environment that is essentially discouraging to export means that one of the foremost advantages from foreign investment is lost. This second point is especially important as technology increasingly permits single aspects of processing activities to be done in different countries. Declines in the relative costs of international transportation have also added to profitability of firms performing one step in a manufacturing process in one country, and a second step in another. This kind of processing can be especially labour using, and a number of countries—Korea, Hong Kong, Mexico—have found this activity to be an effective way to use labour. The central objective should therefore be to affect the impact, foreign investment has, rather than to seek to curtail its total.

EDUCATION POLICY

In few countries has education policy been related very closely to employment. The result has been not only the appearance of educated unemployed, but also bottleneck shortages in various parts of the

economy. As noted earlier the fact that people with some education are employed is, if unskilled jobs are available, a behavioral phenomenon. Such workers are able to choose unemployment rather than take a job which they feel does make satisfactory use of their training. It is not their education that makes them unemployed; it is their refusal to accept jobs other than those for which they have specific training. To accept lower level jobs would mean that the return on the investment in education is lower than if the person could get job commensurate with his training. But that is another matter. If the individual accepts a education, the resources allocated to education are less than optimally used, i.e., too many resources are engaged in educational activities, and the rate of return on investment in education falls.

Again the exact policy to follow is not completely clear. Simply cutting back on educational opportunities has numerous social and political implications. So too would increasing the cost borne directly by the individual attending the school. Evidently a reduction in demand for places in educational institutions would be the most satisfactory way to meet the difficulty. Three general points are relevant in this connection. To a very large extent demand for education beyond elementary school is a demand for a job in modern, urban activities. Some of this demand is due to absence of opportunities and to unpleasant living conditions in rural areas. One attack on the problem might then be to try to make rural activities more appealing and more remunerative. This might mean a greater effort in education in particular areas than now, but considerably less in urban areas. It would probably also mean decidedly less emphasis on university level work.

The second general point has to do with the role of the job training. Greater emphasis on this form of training greatly facilitate meshing supply and demand for specific skills and reduces the likelihood of too much or misdirected training. There are problems of course, and doubtless some form of subsidy or tax relief is essential. Finally, high wage rates in jobs that (as noted earlier) carry an educational prerequisite (frequently arbitrary) make such jobs unduly attractive. If wage rates in jobs calling for education can be established more nearly in accord with the prevailing demand and supply of educated labour, they (wages) would surely fall relative to other wages. This too may tend to discourage people from seeking as much education as they now do.

These various arguments approach the problem from the demand side. Another key element would be simply more employment

the less well educated, thereby raising the opportunity cost of attending school. All of these devices would dampen demand for education possibly significantly, with less social and political consequences than would accompany attacking the problems simply by reducing supply of educational opportunities.

POPULATION POLICY

Rapid rates of growth of population produce rapid rates of growth of the labour force, and the latter add to the employment problem. Population policies are found less infrequently now than a decade ago, but because of age distribution effects the labour force growth even in such countries is yet to be affected. Thus the failure of countries to pursue an effective population policy in the past is now penalizing employment. One can, of course, design assumptions as to substitutability, market mechanisms and technology such that rapid population growth rates produce low income, not unemployment. Few observers would so argue now, and a population policy then becomes part of the attack on unemployment. This area of the problem has been explored so frequently that further comment here is unnecessary.

AGRICULTURAL EMPLOYMENT

The policies reviewed in the preceding section have dampened employment growth in agriculture no less than in other sectors of the economies. Examples abound of product and factor pricing practices that encourage substitution of capital for labour and do little to raise yields. There are several studies that demonstrate that prices of machinery relative to that of labour affects in a significant way techniques used in agriculture. These machines are almost invariably more labour replacing than output increasing. They also benefit large farms substantially more than the smaller farms, and it is the latter in most countries that are most desirable from a social and employment point of view. The various aspects of the import substitution strategy that have dampened export possibilities have in many cases penalized agricultural (including forestry and fishing) output and employment in a rather obvious way. Also credit procedures to finance fertiliser, new seeds, and local water distribution arrangements almost slways favour the larger units, which in turn have the greater incentive to seek ways to substitute machinery for labour. In most countries the fiscal systems are frequently ineffective in agriculture, both with respect to land and agricultural incomes. This has resulted not

only in substantial profits going untaxed, but also creates difficulties for affecting the techniques used and the products produced in agriculture.

Perhaps the most important element acting on agricultural employment is technological and seed development. When the labour force in agriculture is rising rapidly but the quantity of land under cultivation is increasing slowly (or not at all), rising output per man implies rising yields per hectare. If yields per hectare increase more rapidly than output per worker then employment per hectare rises. Thus in this situation (rapidly growing labour force and slow growing area under cultivation) any innovation that raises yields per hectare without reducing labour per unit of output will increase employment per hectare. Yield increasing innovations are therefore equivalent to an increase in land. Such an innovation then would have the effect of requiring more use of the relatively abundant factor (labour) and less use of the relative scarce factor (land). As noted earlier, it is this category of technical change that is most effective in attacking the employment problem in any sector.

The evidence available to date indicates that the new high yielding seed varieties (the Green Revolution) are augmenting in the sense just described. The new high yielding varieties of seed affect yields in a number of ways: they are more responsive to fertilizer, they respond better to improved cultivation and weeding practices, and in some instances are better suited to double cropping than previous seeds were. These results make profitable the use of greater labour input and the higher yields also help the farmer finance his purchase of new inputs. They do, however, seem to place greater importance on water than ordinary varieties.

Available studies of Taiwan, Japan, Thailand, Philippines, and Mexico, suggest the importance of this kind of picture of the technological evolution of the agriculture sector. Even now with her significantly higher wage rates, Japanese rice production is more labour intensive than that in a number of other rice growing areas.

In Mexico the modern agriculture sector has applied both yield increasing and labour displacing technologies, and the larger traditional sector, being poorly placed to adopt or compete with them, weakens as a provider of livelihoods.

TECHNOLOGY AND EMPLOYMENT IN LDCs

The magnitude of unemployment and underemployment in developing countries appears to be enormous and growing. Despite conceptual and measurement difficulties in identifying precise quantities, it is undoubtedly true that in many (probably most) LDCs the numbers of people seeking modern sector jobs far exceeds the jobs available. This growing problem has arisen despite substantial investment and fairly rapid rates of growth of output in many countries. It is natural to conclude from this that something must be wrong with the nature of investment carried out or put in another way, the wrong technology must have been adopted.

Technology has been defined as the "skills, knowledge and procedures for making, using and doing useful things." This broad definition will be adopted in this paper. Technology thus includes knowledge of organization and methods of production in all economic activities, public and private. Vertically, it includes administration and management systems as well as types of machinery. It covers knowledge about the structure of production--in terms for example of scale, and the nature of ownership--as well as the nature of the process adopted. Horizontally, it includes the production of services e.g. banking, education and health--as well as goods, and it covers the nature of the goods and services produced--the different ways in which needs are fulfilled--as well as the different ways in which these goods are produced. Technology often tends to be identified with the hardware--the machines and processes. This is to restrict the field too much, leaving out many important aspects. But using the broader definition has its difficulties. In particular, it will be impossible to give all aspects full covers; and what can be correct said about one aspect of technology, may be untrue of others. Both these factors should be borne in mind, and allowed for, in what follows.

A distinction needs to be made between technological possibilities available--which is a form of knowledge about methods of production, and the technology in use, or the methods actually being used. Often technology is used interchangeably for those two aspects and this can result in confusion. The technology in use is limited (obviously) to known methods. Normally only some of the known methods are actually being used. Thus, the technology in use may be changed by adopting a different subset of the known methods, without changing knowledge at all. In arguing that LDCs have adopted inappropriate technology it is the technology in use that is normally being described as inappropriate. This

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situation could arise because the wrong methods were being selected from all the known methods, and could be put right by changing the selection. Or it might arise because appropriate knowledge was not available. In the latter situation no amount of change in the system of selection would bring about the appropriate technology in use. Here it is necessary to create new technology, since the inappropriate technology in use is a reflection of inappropriate technological knowledge whereas in the former case it resulted from inappropriate selection system.

The knowledge possessed by different people/institutions/countries is not only a function of total world knowledge in the area in question but also of how much of that world knowledge has got through to the institution in question. Technology may be inappropriate because of weak communications.

Possessing or not possessing knowledge is not always a simple thing like knowing or not knowing the distances between the main capital of the world. It is more often a question of knowing where to go to acquire the detailed knowledge; and it is also a question of price. If the price of acquiring the knowledge is prohibitive it may not be communicated for that reason alone.

Thus inappropriate technology may arise in a number of ways:

1. through wrong selection systems;
2. through weak communication systems--this may be at an inter-country level, or within the country;
3. through expensive technology transfer;
4. through inadequate supply;
5. through inadequate world knowledge.

Item 4 above--Inadequate supply--describes a situation where appropriate methods are known, but the inputs, particularly machinery, essential for adopting them are unavailable, e.g. where production of 19th century appropriate machines has ceased. The solution to the problem of inappropriate technology in use will differ according to which of these factors is primarily responsible. As we shall see the use of inappropriate technology in developing countries, may in part be due to each of these factors, though observers differ on the weight to be attributed to each, and the methods to be used to change the situation in each case.

There is no single employment (or unemployment) problem in LDCs, rather a syndrome of interrelated problems, displayed in different ways,

and to different degrees in different countries. The employment problem cannot be simply identified as one of insufficient employment opportunities, and measured by the rate of open unemployment. For one thing only the (relatively) rich can afford to be unemployed, in societies without systematic provision for the unemployed, where those who are seeking work have to rely on support from their relations or their past savings. For another thing, in many societies which are clearly exhibiting employment problems, there is work to be done. The ILO Mission to Sri Lanka found agricultural employers unable to hire the workers they needed, fields that required weeding, and numbers of workers imported from South India as toddy tappers, despite 550,000 (or 14% of the labour force between 15 and 59) who were openly unemployed. Recently many observers have suggested identifying the employment problem with low incomes. This classification then automatically includes the openly unemployed, and also those scraping a living in rural or urban areas with inadequate equipment and markets. Poor societies are, by definition, characterised as having low incomes and productivity on average. To identify an employment problem, as against a general problem of poverty, the incomes approach to employment problems suggested a criterion of low incomes, in relation to the rest of the society.

The income approach to employment problems suggests that the key problem is one of the differential access to income earning opportunities. The relative poverty of some members of society is due to their relatively poor access to good income earning opportunities. High levels of open unemployment, massive rural-urban migration, the very high ratios of applicants to modern sector jobs, the main systems of the employment problem, can all be seen as a consequence of the large differences in productivity and earning opportunities between the modern sector and the rest of the economy. They are signs that people are trying to shift into the modern sector. Thus the employment problem is not a matter of an absolute lack of useful things that might be done, but a shortage of modern sector jobs in relation to the number of people who would like them. The employment opportunities that exist are in the informal or traditional sector and offer only relatively low incomes.

This view of the employment problem is presented graphically below. LL' represents the total labour forces in a developing country. It is assumed that the economy is neatly divided into two sectors--the 'modern' and the 'traditional' or informal. LM shows how output changes as employment in the modern sector increases. (It shows diminishing marginal productivity as employment increases; the dotted line LM'

shows an alternative, fixed proportion case where the employment/ output does not vary). Let us assume that modern sector employment is limited to LM^* .

We discuss below the factors that might limit it in this way. Then the remaining labour force, M^*L' , may be totally absorbed into the traditional sector, or may be partially absorbed and partially unemployed. In either case there will be big differences between average (and marginal, as shown by the slopes of the output curves) productivity in the two sectors, and between incomes in the two sectors. Open unemployment, rural-urban migration and other symptoms of pressure for modern sector employment can be seen as attempts to shift into the higher income modern sector. Anyone using low productivity (relatively) as a guide to underemployment will tend to include many of those employed in the traditional sector. This approach is, of course, a tremendous oversimplification of reality. Economies do not fall into two easily differentiated and internally homogeneous sectors. However, it is possible crudely to classify employment opportunities in a many economies, in this sort of way.

In the modern sector the technology is imported from developed countries--not just the machinery but also the systems of management, ownership, labour relations, etc. The informal or traditional sector tends to use local technology and local systems of ownership, control and management. In the modern sector wages are subject to Trade Union and Government regulation. In the traditional sector incomes are determined competitively or on traditional lines. Thus the major distinguishing characteristic between the two sectors is the nature of the technology. This explains the differences in labour productivity shown in the diagram. The imported technology exhibits higher labour productivity than local technology for two reasons; first, because it is generally associated with much higher levels of expenditure on capital equipment per employees; and secondly, because the methods of production have high factor productivity because they have been developed using the scientific and technological resources of developed countries.

There are of course all sorts of marginal firms, and employment opportunities, which do not easily fit into either category. However, so long as the broad distinction remains relevant this need not invalidate the approach.

ELEMENTS OF AN EMPLOYMENT POLICY

An integral employment policy, prepared within the framework of the World Employment Programme of the ILO, is based on the factors mentioned below. These ideas have been incorporated into the reports of High Level Missions that the ILO has to sent to Colombia (1969), Sri Lanka (1970), Iran (1971), and Kenya (1972). They have also been applied by Human Resources Planning Groups and regional employment teams, which have constituted the central activities of this programme.

These high-level delegations are autonomous technical teams, and the conclusions they reach depend mostly on their leaders' points of view. Therefore, it is not possible to state with certainty that other missions, for example, those completing their tasks in the Philippines and the Dominican Republic, will reach the same conclusions as those of the four previous missions. However, a number of essential subjects should appear in the context of every policy effectively trying to improve the employment situation with a certain degree of urgency. These subjects includes:

1. How to increase the emphasis given to employment and income distributiIn, in the context of national planning and economic policy instead of framing goals solely in terms of the growth of production. This generally implies the development of models with sectoral employment goals.
2. How to indicate or strengthen social programme of action in sectors of the economy that are disconnected from the central process of capital modernisation and accumulation. These programme are particularly important for the traditional rural sector and for small industry.
3. Whay is the magnitude of financial, technical, and administrative resources that can and must be transformed in relation to these programmes.
4. How to introduce and execute a technological policy and a policy of relative prices for factors of production that will enable the best utilization of both scarce capital resources and abundant labour resources.
5. How to adapt educational programmes to the needs of development directed towards employment. This task requires the establishment of a comprehensive system of human resource planning including every level of education and training, formal and informal.

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6. How to integrate in the best possible way the modern sector, which has a dynamic of its own, and the traditional sectors, which are to be the subject of constant and special assistance for their improvement.
7. What kind of population policy must be followed in order to avoid excessive pressure on available resources.

These factors have been analysed with different degrees of intensity in the four reports mentioned above. There are doubts about the precision of the adopted recommendations and their feasibility. The technical work required to clarify all the subjects involved in this type of restructuring of development must be continued, because this is only the beginning. But the important conclusion derived from the reports is the failure of traditional policies in the solution of a great social and human problem, and the urgency of undertaking intense efforts in order to rectify the goals.

CONCLUSIONS

There are many other policies that have effected employment growth, but those just reviewed appear most important quantitatively and are common to more countries than others that might be discussed. It appears beyond doubt that this set of policies has significantly penalized the growth of employment opportunities in all sectors of the economies of the less developed countries, and has encouraged a movement of labour from rural or traditional sectors into seeking jobs in urban, modern activities. It also seems reasonably well established that modifications in these policies in the directions indicated above would have significant positive effects on labour use. The evidence supporting this latter point is both quantitative and descriptive. Several papers by Professor Gustav Ranis provide a large number of examples of practices that have encouraged labour absorption in countries where the commitment to the policy package outlined above has been less strong. Similarly there are numerous studies published in the *International Labour Review* discussing labour intensive techniques in a wide range of activities, include public works, agriculture and industry. On the quantitative side, regression equations of a great variety of shapes and forms have demonstrated the vulnerability of employment growth to increases in wage rates, the substitutability among inputs, and the way in which the policies outlined above create price signals that penalize employment growth.

ECONOMICS OF LABOUR AND LABOUR ORGANIZATIONS--CASE OF BANGLADESH IN THE POST COLONIAL THIRD WORLD CONTEXT

ABDUL AWAL KHAN^{*}

THE PARADIGM

Economics of labour is expected to deal with the demand and supply, employment and unemployment, wages and movements of labour and the like. Not until the middle of the present century did it receive considerable attention when legal and organizational aspects of the subject came into prominence. Gradually, labour was recognised as the principal agent of production and of distribution. Its precedence over money, machinery or raw materials attracted the mind of Marxists and non-Marxists alike, although their interpretations differed accordingly to their political ideologies.

The capital importance of labour in social sciences has been underscored specially by those social scientists and political thinkers who pointed to labour as the determining factor in the process of radical transformation of the existing social order. Marx considered labour "as exclusively human" and Braverman called labour capital. Labour received due attention by the Webbs and it was not disregarded even by some other non-Marxists who called labour a "unique factor of production and even pointed it out as the "source of all value".

Labour became an economic concept when productive human efforts were brought to market for sale and purchase. The concept as such had not existed in slave societies or in those where one individual was the property of another. The rise of capitalism entailed a situation where labour could no longer be bought "body and soul". Even since this social transformation the labour power has entered into a condition of bargaining between capital and labour. In this condition of bargaining, capital—the owner of the means of production—however does not refrain from exploiting labour, rather it persists in it. Now, changing its strategy it seeks means of exploitation in the terms and conditions of bargain with the labour. Individually, on the other hand, the sellers of labour power are very weak as bargainers, who, in consequence, for self-protection need

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labour organisations. To the extent that the relationship between seller and buyer of labour power grows complex the structural and operational modes of this organization becomes complicated.

The worker enters into employment agreements because social conditions leave him or her no other alternative to earning a living and thereby exploited. To enter into this organization, on his or her part, is an attempt to lessen the extent and intensity of such exploitation. This does not threaten or topple the capitalist structure as capital is capable enough of starting it off. In Marx's words: "Pauperism forms a condition of capitalist production... capital knows how to throw this, for the most part, from its own shoulders on to those of the working class".

Even Adam Smith and David Ricardo, in the period before Marx, had recognized this capitalist blackmail as the basis of social inequality, but they could not see it as unfair, and hence the necessity of class struggle escaped their attention. When Marx brought this fact into sharp focus, the concepts of class struggle through organised labour action began to be popular. Marxists hold the view that the emancipation of labour is consequent upon the elimination of the capitalist exploitation of labour power, although for the Webbs the solution consists in collective bargaining.

In Lenin's view, labour organisation is the sole and whole weapon of the proletariat in their struggle for power. The growth of monopolistic power on the side of the employing units inevitably has led to the development of what has been called by Galbraith a sort of countervailing monopoly power on the side of labour within labour markets, in the form of large and often potent labour units. By labour, Lester says, is always understood organised labour because it is the labour's counterfront to fight capitalist power. Adam Smith also took cognizance of the necessity of belligerent labour organization because, as he says, the organization should not only unite labour but also have to be: "...desperate and act with the folly and extravagance of desperate men, who must either starve, or frighten their masters into an immediate compliance with their demands".

But the Marxian theory of labour movement goes deeper into the *raison d'être* of labour organization than simply to gain short term financial benefits for labour. According to it, "more is at stake than simply the short-run economic status of the working class" short term tangible gains for the working class through labour movements were strongly condemned by Marx, Engels, Gramsci and many others. Because they were certain that

these pinnacles would serve only to divert the labour movement from what they thought was its real purpose, i.e. to capture political power. They viewed state power as the target of class struggle and emphasised the need of capturing political power by the working class for moulding the economy in its interest. Ross et.al., have described the nature of "mature trade union" as being primarily a political institution, with leaders motivated largely by political considerations. Here, of course, the maturity of trade unions must not be understood to be dependent on that of either democracy or capitalism. Thus unlike American unions, those in some post-colonial Third World countries like India, may pose a revolutionary threat to the capitalist social order. Perlman's theory of labour movement that the development of any labour movement depends primarily upon the "resistance power of capitalism" is relevant here. Perlman argues that this resistance power determines whether the capitalist employer group can maintain itself as the ruling group and survive the revolutionary onslaught of employed groups. This resistance power of the capitalist group is also conditioned by the degree of its alertness in a given time and place. The resistance power is further enhanced whenever the major portion of the society, specially the manual workers, accept the basic principles of capitalism, such as private property and initiative. In fact, the strength of capital and refined management in developed capitalism tends to blur workers' militancy and class consciousness by allowing them various incentives and motivations within the broad framework of capitalism.

Perlman's theory is deemed relevant in the post-colonial Third World context wherein under-developed capitalism, characterised by the nascent and lumpen nature of the bourgeoisie, can afford little or no concession to the workers. Authoritarian management and autocratic regimes leave no other alternative for them than to fight for their existence. Extreme repression and exploitation keep them under constant struggle and make them aware that they are exploited. Repressions by the state and bourgeoisie tend to accentuate their militancy and despite many drawbacks (such as leadership opportunism, kinship and rural ties of workers, etc.), push them close to the flashpoint of a revolutionary outburst for a new society.

Now the pertinent question is, what role at this moment do the trade unions have in post-colonial Third World context to play? There is no doubt that trade unionism is a capitalist phenomenon, and under normal circumstances does not disturb the fabric of capitalism. But it turns into capital's most fierce enemy in an explosive circumstance. This circumstance arises when petty economic benefits can no longer

postpone or put-off the labour crisis or, as Crouch argues, Capital: "... makes no concessions and shows a bold front of total resistance—a characteristic unlikely to be displayed by capitalism and is more frequently found in autocratic pre-capitalist regimes. "Under such circumstances, trade unions can act as the media of violent labour protest against repression, which generates much more than mere frustration and alienation. Even in their weak form, trade unions can still be a threat to the process of exploitation in the Third World context. It is to be kept in mind that repression and exploitation is the most significant crystalizing force in the formation of working class in the Third World countries on which those trade unions have a direct bearing.

THE SCENARIO

Trade Union movements in post-colonial Third World countries have some distinct features:

- (1) Because unemployment or underemployment is the norm, work takes on a meaning that is radically different from that in advanced industrial countries. Work is synonymous with existential survival, and joblessness means sure extinction in the offing. Availability of cheap and abundant labour force creates for the individual workers an extremely competitive labour market where purchase of employment by sale of labour is a tight-rope walk. Even when they are employed, each morning begins in anxiety and uncertainty, because their replacements are continually floating around them, who are in Marx's terms "latent", "floating" and "stagnant" sections of the relative surplus population. Compulsive circumstances plunge them into an endless affair of existential survival. Most of them eke out their low wages, by maximising effort rather than fighting for higher wages for the same amount of work through trade union activities which are considered risky, because in the event of failure, participation in union activities involves fear of enormous sacrifice. Many of the workers under such circumstances are most likely to concede that grub comes before politics.
- (2) The industrial workers in cities are migratory in character and maintain strong rural ties and kinship connections with their village homes. Legal and social persecutions make them feel more and more helpless and throw them back on their rural ties.

This generates backwaters in the labour movement and produces regressive effects on it as a consequence.

- (3) The existing economic situation in these countries is such that the vast majority of expeasants are absorbed in the informal sector than in the modern capitalist sector which is poorly developed and weak. Most of these countries have, in the post-colonial period, been able to increase industrial employment only very slowly. This might account for the small size of the industrial labour force in view of the vast size of floating labour pool. Consequently, the precondition for a successful labour movement, i.e. the existence of a vast size of a class-conscious industrial proletariat, remains unfulfilled. This is embedded in the trade union movement as a grievous flaw and is in fact the cause of low union membership and participation, inadequate finance and poor organizational activities. Moreover, it is characteristic of labour in the post-colonial Third World context that industrial bases are positioned in a few urban centres, which is to admit that organised labour militancy is confined only in these few industrial bases.
- (4) Though small in size this organised labour only in name graduated from slave and forced labour to so-called free labour because it still remains subject to the vagaries of crude colonial labour policies. The market and the capitalist labour process as before have kept it fixed under its pre-colonial disadvantages. This cornered and coercive situation compels them often into the withholding of their labour, deserting of their posts in large numbers and sabotaging of equipment. In short post-colonial arbitrariness vieing with colonial high handedness has given rise to the need of organized labour militancy, which in turn enlightens them on the fact of their existence as exploited labour.
- (5) Trade Union movements in these post-colonial countries are found to have been intimately associated with nationalist struggles for independence. It was primarily because the employers who were themselves foreigners were also associated with the ruling power, hence "the struggle against the employers had to involve the unions in political activities. In many a case trade union leader and politician was one and the same person. Such leaders used the organised strength of labour to advance their own political ends. Thus the battle-cry of the working class ended up in the battle-cry for national independence, although in

most cases the labour movement stood at the centre of a coalition of class forces (including the indigenous bourgeoisie, the students, and the petty-bourgeoisie) all of whom opposed colonial rule and exploitation.

- (6) The prominence of the working class in strikes and demonstration which challenged imperialist control in the 1940's was not evident in the struggles of later decades. The reason is that the economic development of the 1950's and 1960's was of such a type as to increase drastically the relative size and influence of the urban petty bourgeoisie, office-workers and students. These new elements were radicalised and anti-imperialist, but not working-class, so that the democratic nationalist ideologies they espoused quite over-shadowed the aspiration of the working class in the newly independent countries.
- (7) Post-colonial labour movements in these countries may be called rebellious rather than revolutionary because the strikers and demonstrators are concerned primarily about those things which they believe the existing system is capable of giving them—higher wages, more benefits, more work etc. Moreover, the strikes, in most cases, are the result of purely local conditions, and if they result in any gains at all, such gains affect only small and isolated groups; they have little effect on the working class as a whole. Also in most cases, the leaders and their organizations rise with the strike and/or movement and disappear soon after it has been settled. On the whole the reaction of workers to labour and income conditions and the resulting stimuli to the formation and development of organised labour are inherently conservative. They seldom contend for "a bigger piece of the cake." Nevertheless, their virtue is in their protest against the falling of real wages. In the post-colonial context of half-backed nascent bourgeoisie and blockbusting governments, the working class always nurtures a militant mood against their ever-worsening human conditions.

The characteristic features of labour movement in the post-colonial Third World context, as stated, might appear quite frustrating and these might lead one to conclude that the very basis of a class conscious proletariat for a revolutionary upsurge is a distant reality in these countries. But it might be argued here that, using a historian's skill, one

might well find some rays of hope for the emancipation of labour in the context of Bangladesh on the following grounds:

(1) Stark economic inequality and pauperisation that has been created over the years has prepared the ground for a massive social unrest. The working class has been experiencing a rapidly falling real wage and a degradation of their material life. Proletarianization has been on the increase through landlessness and polarisation of income distribution, which make for an explosive situation in general and emancipation of labour in particular. The extent of exploitation and repression that are in practice leave the labour force with no other alternative than to join forces with those other sections of the masses whom Franz Fanon has called the wretched of the earth.

This is however, evident that the workers, who participated the Liberation War in 1971 and made supreme sacrifices for independence with an expectation that political independence would ensure them a society free from exploitation could not be misled by the crisis in politics and trade union leadership through the ever increasing operations of coercion and bribery practised by the ruling regimes since independence. This has been demonstrated by the outbursts of the recent labour movements under the SKOP; in which about 2 million workers successfully defied the government and employers. These movements showed, beyond doubt, that there is a revolutionary zeal among the urban industrial workers, who, under a developed leadership, could have brought about a proletarian revolution.

It is found that the trade unions in the country remain weak in promoting the economic welfare of workers in normal periods and was strong during periods of political unrest when they pour out to realise their demands through agitations, strikes and other unilateral actions, as has been the case over the last one hundred years. Events from both the colonial and post-colonial periods well indicate that despite the failure of leadership to take care of it, the more the workers suffered the more they became conscious of themselves as a separate class, which forced them to build up an ever stronger solidarity among the greatest possible numbers of them in crisis. They have been raised to a higher level of political consciousness through experience of exploitation and repression during the successive coercive regimes in the post-liberation period. A feeling of relative deprivation among the urban workers is also heightened since the capitalists and the ruling elites are urban dwellers par excellence and flagrantly display their material wealth.

The history of the country's labour movement indicates that the working class, in spite of the almost insuperable difficulties that have plagued them since the colonial days, have been desperately attempting to achieve some form of organization of their own. Thus it happens that whenever leadership gets divided on their own personal interests, the working class maintained and sustained pressures on them to get reunited. The result has been that whenever a national crisis becomes imminent unity of labour becomes more evident and broad-based than that of any other section of the population.

Most paradoxically however, politicization has remained both a weakness and a strength of the country's trade union movement. As is well-known it has caused political divisions among the ranks of the union leadership and membership, thereby creating multiplicity of unions both at the grass-root and national levels, with all its attendant disadvantages for the working class. The workers and their organisations are found to be fighting against each other and thereby giving political parties in general and the ruling regimes in particular to play them off against each other for their respective political ends. But on the other hand politicization has helped, specially under the guidance and leadership of the left-wing political parties, to make a sizeable portion of the workers politically conscious and to understand the process of exploitation and repression imposed upon them by the greedy bourgeoisie and the autocratic regimes. So it is found that although the large majority of the plant level leaders tend to be opportunistic and join palms with the ruling regimes under the counter, the rank-and-file membership remains politically conscious and anti-Government in general. In this sense the process of state bribing and forcible occupation of unions by the ruling regimes proves self-defeating, because although they can occupy many unions by force, they are left with few loyal members, among workers. Inevitably they lose a channel of communication with the largest body of workers in the country and no regime has so far been successful in making a foothold among the masses of workers. So, it has become a characteristic feature of the Bangladesh trade union movement that whenever a regime falls, its labour front and unions also disintegrate.

It might be argued that the ruling regimes in the post-colonial period have been more regressive than those in the colonial days. They have used all means to make direct interference in trade union affairs, including the use of violence and police actions to thwart the development of any genuine trade Union organisation in the country. They have, time and again, taken away the workers' rights of trade unionism, striking and election to CBA, but all these have back-fired. Since the breaking of laws by regimes has tended to provoke workers' militancy and make them law-breaking in an ever increasing proportion. Now it has rather become a

truism that the workers can achieve nothing unless they violate the legal process that always acts against them. Nationalisation of major industries of the country just after liberation has, no doubt, facilitated direct interferences in trade unionism by the Government and ruling party but it has at the same time ironically helped a labour unity in independent Bangladesh. In the public industrial sector, the state being the remote employer, and the enterprise a piece of public property, the workers enjoy a sense of ownership and to a certain extent of security, too, compared to those in the private industrial sector because in the latter case their implacable owner, the profiteering hard-task master, is pacing and grumbling right in front of them. In the context of the nationalised sector of Bangladesh, the existence of a single employer (i.e. the state) has placed the workers in an advantageous position to clearly identify their class enemy, which has consolidated and mobilised them for their objectives against that central focus of the employer state (as against the previously highly differentiated, dispersed, ill-organised and protracted strikes for lack of this central target of their salvoes).

The mechanism of state control over industries in post-liberation Bangladesh has brought to light the actual character and role of the state vis-a-vis the bourgeoisie and the working class. The comprador role of the state in promoting the interests of their international donors and benefactors has been made more clear by the privatisation policy of the regimes, pursued vigorously and ignominiously by the military regimes in general and that of General H.M. Ershad in particular. The waves of labour unrest that have followed the policy of wholesale denationalisation by the existing regime well indicate that the workers are not only anti-regime but are also anti-bourgeoisie and that they are ready to foil any conspiracy against their interests in spite of their leaders' dilly-dallyings. The recent 5-point movement under the SKOP is a further indication that a unity of the national level trade unions can bring so much pressure on the government and bourgeoisie that they cannot help bowing down.

CONCLUSION

In the British and Pakistani colonial periods, it is seen that there was repression of the working class and coercion of its leaders. But there was not this new phenomenon of political bribing of leaders. So there were very few cases of suborning at that time. But this has become a standard practice of the military regimes since 1975. Unless this practice is stopped no working class leadership can be formed though there could be a faint hope of a trade union movement only through a national unity of the working class. It is true that no viable trade union movement can come about under a bribable leadership. In the context of the Bangladesh trade union movement and in consideration of the above facts it can be said that there is the gunpowder but there is none to ignite it, there are almost all requisites for food but there is no dependable cook.

ACCOUNTING FOR INFLATION IN A BUSINESS ENTERPRISE: ITS IMPLICATIONS FOR MANAGEMENT AND CREDITORS

MD.SHAMSUL HAQUE*

1. WHAT IS INFLATION ?

Inflation is defined as the 'persistent' rise in the average level of prices in an economy. The persistent indicates continuous rise in prices, a one shot jump in prices is not inflation. And during a given period prices of some goods and services may go up, others may go down, still others may not change at all. It is the average change of all prices, thousands of them, taken together when goes up from one points in time to another, we designate it as a rise in average level of prices. Usually such an average price level is measured by constructing an index of a sample of prices of goods and services considered as important, such as the cost of living index or consumer prices index and wholesale prices index. If inflation exists in an economy the purchasing power of the currency declines and more currency is needed to buy the same basket of goods. Hence higher levels of earnings are demanded by wage earners and businessmen etc. which is known as "cost-push" inflation.

2. HOW INFLATION AFFECTS US ?

For the common people inflation is felt in reduced purchasing power of the monetary unit (e.g. Taka or Dolar). That a currency buys less and less quantity of goods and services per unit or we need more and more currency to buy the same quantity. For that reason we need, and demand for more money-income to maintain our standard of life, or a given standard of living. For business enterprise, the effects are also more or less the same, since they should also want to maintain (and raise) their real rate of income or profit or return. In order to maintain real return during a period of inflation, the nominal or money-return must rise as is shown below:

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Table: -1 Rise of Nominal or Money Return during the Period of Inflation.

Year	One plus Nominal Rate (1)	Price Index (2)	$\frac{P_t - 1}{P_t}$ (3)	One Plus Real Rate (1x3)=4
19x1	1.1	100		
19x2	1.10	106	0.94	1.03
19x3	1.11	114	0.93	1.03
19x4	1.12	124	0.92	1.03
19x5	1.13	136	0.91	1.03

The Table above demonstrated why the nominal rate went up from 10 per cent in 19x2 to 13 per cent in 19x5 just to maintain the real rate of 3 per cent when purchasing power of Tk.100 in 19x1 fell to Tk.91 in 19x5 due to rise in the price index from 100 to 136 over the same period. This is, of course, easier said than done in business. In the following sections we shall present why it is difficult to deal with inflation. What is needed to be accounted for and to what extent inflation accounting can serve the intended purpose for an enterprise and those who are interested in its performance including shareholders and bankers.

3. PROBLEMS OF MANAGING UNDER INFLATIONARY CONDITION

A business firm, a manufacturing enterprise in particular, is affected by two sets of prices: one, prices of its goods; two, prices of the various inputs e.g., materials, fuel and spares, labour and other items of expenses. Generally known as relative prices, input and output price changes affecting an enterprise may be entirely different from the average level of inflation in an economy. That is an enterprise has to forecast the relative prices of its output and input if it has to use them in estimating the nominal rate of return required to be earned during the next year or so in order to maintain the historical or real rate of return. Tracing historical changes in relative prices is one thing but to forecast what are they going to be in future is not an easy task. It is difficult because there are uncertainties in the future about each of the prices with which we have to deal with including the prices of the goods produced for sale by an enterprise. Although output prices are affected by demand and competition in the market, the management may exercise some control over fixing prices for

their products. Input prices are more difficult to forecast. Supply as well as prices of raw materials, specially imported raw materials, are again determined by the availability and the price of foreign exchange. A ten per cent devaluation of taka accompanied by a 10 per cent increase in prices abroad will amount to $1.10 (1.10) = 1.21$ about 21 per cent rise in domestic prices of raw materials. Besides forecasting individual prices of input items (including wages and salaries) and output prices, there is a need to match the timing between cost and price increases if an enterprise has to maintain its profit margin. A three-month delay in passing production cost increases to output price increase may drastically reduce profit margin may suffer from a chronic lag in price adjustment if management does not act well in advance, since it takes time for revised prices to take effect on the final consumers. In brief, planning and forecasting which is crucial for successful management of an enterprise, becomes all the more difficult when inflationary conditions prevail in an economy. Working capital requirements, for example, are found to be closely associated with relative price changes affecting an enterprise. As it is well known, many of the newly set up enterprises in Bangladesh either failed or are performing very poorly for shortage of adequate working capital, which was not properly planned, given the inflationary condition which was not properly planned, given the inflationary condition in Bangladesh. Many of the public sector enterprises also suffered from shortage of working capital, although it has been known to government planners and donor agencies that inflation increases the need for finance in all spheres of economic activities. Expected inflation is also taken into account in forecasting money supply for the next year by the monetary authorities.

4. WHAT IS INFLATION ACCOUNTING ?

So far we have discussed inflation and managing under inflation in general terms. We now turn to the specific topic of inflation accounting.

Conventional or generally known as historic cost accounting for costs, revenues and profits worked well for a long time when there was little problem with relative price changes or when there was little or no inflation. When inflation became rampant conventional accounting proved inadequate to match current costs with current revenues. Under historic cost accounting certain costs remain uncharged or under-charged against revenues of a given period. As a result profit is overstated. The existing tax laws recognize such accounting profit as taxable and tax is charged accordingly. This reduces the real profit measured in cash flow terms further and it has been observed that when inflation runs at 15 to 20 per cent per annum a substantial balance of accounting profit is wiped out

after accounting adjustments are made for inflation. During high inflation of the seventies real profit turned out to be large negative figures for manufacturing companies in the U.K. USA, and other industrially developed countries. That is when inflation accounting came to the forefront of academic and public debate because conventional financial statements which are supposed to provide a 'true and fair' view of an entity were found to be grossly distorting. Reported profit and asset values have had little to do with profit and asset values in reality. Financial resources were sucked out of enterprises by government through taxes when companies needed them most for their survival. Governments in those developed countries recognized the problem after prolonged debates and tax laws were amended to provide some relief from the cash flow crisis in the manufacturing enterprises.

5. SOURCES OF DISTORTION OF ACCOUNTING FIGURES DURING INFLATION.

Primarily there are two sources by which current costs remain under-charged against revenue of a period during inflation (hence profit is overstated). One, cost of inventory or stocks; two, depreciation on fixed assets. The following sections deal with these two topics in detail. First depreciation and second, stock appreciation.

DEPRECIATION

Under historic cost accounting, the cost of purchasing fixed assets which are expected to have a useful life of more than one year is not charged in full to the profit and loss account for the year in which they are purchased. There are alternative conventions for calculating the appropriate proportion of depreciation to be charged, such as straight line, reducing balance, or annual capital charge. The most common is the "straight-line" method, under which the total amount to be depreciated is divided by the number of years of estimated useful life of an asset.

However, it is widely accepted that in conditions of continuing inflation, historic cost depreciation seriously understates the full cost of an asset and its use to an enterprise measured in terms of the purchasing power of the period in which the asset was acquired. The following table provides an illustration of the effect of changing prices on historic cost depreciation and fixed asset valuation in the balance sheets of two hypothetical companies.

Table-2: Effect of Changing Prices on Balance Sheet.

	Stable Prices End Year 1984 Entries		50% Price Increase during 1984, End year 1984 Entries.	
	1	2	3	4
	Company		Company	
	A	B	A	B
Fixed Assets	100	100	100	150
Depreciation	20	10	20	15
Net	20	90	80	135

The table shows a simple comparison between the entries in respect of fixed assets in the end year 1984 historic cost balance sheets of two companies A & B, which purchased identical fixed assets at the beginning of 1983 and 1984 respectively.

Columns 1 and 2 show the entries in the historic cost balance sheet for the end year 1984 when there had been no change in the price of the asset. Columns 3 and 4 show what happens if the price of assets of the type purchased by both companies increases by 50 per cent during 1983 after Company A buys its assets, but before Company B makes its acquisitions. The nature of the escaped cost and distortions arising thereby in profit calculations of the two companies may be observed in columns 3 and 4. While the depreciation charge for company A remained constant at its position under stable prices, the depreciation charge for Company B went up by 50 per cent. If there were no other costs and if product prices were fixed on the same mark-up on historic cost depreciation, Company A's price would have been lower by 50 per cent compared with Company B's prices in 1984. The relative under-pricing would result because the replacement cost of the used-up facility would be 50 per cent higher than the historic cost depreciation charged in product cost. If we assume that the mark-up was 50 per cent, then the entire sales receipts of Company A in 1984 would be absorbed in replacement investment corresponding to the use of physical capacity of fixed asset.

A more fundamental issue that is involved with depreciation is related to the recognition of cost of capital in computing periodic depreciation charges. It has been suggested that depreciation methods, which recognizes cost of capital (interest) are attempts to discount the values of successive dose of inputs in a meaningful way. In fact, it has been argued that "any depreciation policy based upon acquisition cost which does not

take account of interest charges on the capital deployed in the asset will understate the full cost of the latter—even in the complete absence of inflation".

Some orders of magnitude of the shortfall of historic cost depreciation may be provided comparing its level with the levels that may be derived from an economic model for computing an annual depreciation charge.

The following Table and Notes show comparative depreciation charge between two methods:

Table- 3: Annual Capital Charge A, as a Function of Asset Life W and Cost of Capital r.

W/r	0.01	0.05	0.10	0.15	0.20	Ao/W
1	1010	1050	1100	1150	1200	1000
5	206	231	264	298	334	200
10	106	130	163	199	293	100
15	72	96	131	171	214	67
20	55	80	171	160	205	50

Notes: 1. Ao is an assumed asset acquisition cost of Tk.1000.

2. Ao/W is annual depreciation calculated on a fixed instalment basis.

3. The annual capital charge C is given by:

$$C = A_o \frac{r}{1 - (1+r)^{-W}}$$

Taking a particular example from the table: when a company's weighted average cost of capital (r) is 0.05 (5 per cent per year) possibly a reasonable value in conditions of zero inflation and the expected life (W) of an asset is 10 years, the annual capital charge exceeds conventional depreciation by 30 per cent i.e. (130-100)/100. Assuming that inflation is anticipated by lenders and to some degree is embodied in the value of r, the discounting rate, the extent to which historic cost depreciation is understating the true cost of replacement capital expenditure during a period of high inflation could be very large. Recognizing this fact the British Government allowed companies to charge twice the amount of historic cost depreciation as tax deductible expense in 1976, as an ad-hoc measure.

B. COST OF STOCK

Stock or inventory is a general term used to cover not only stock of raw materials and components, but also work in progress and finished goods awaiting sale. The matching of cost of stock against the revenue earned

during a period is a difficult area of accounting for which conventional methods have been developed. The most commonly used convention in this country is the "First in First Out (FIFO) convention, by which it is assumed that the units of stocks consumed during the year are those which have been longest on hands. Although FIFO is the most commonly used convention in many countries there are a significant number of companies using alternative conventions, such as Last in First Out (LIFO) and the Base Stock Method. In the USA the tendency to use LIFO has increased sharply in recent years. A survey in the year 1976 by the American Institute of CPA showed that 52 per cent of 600 industrial and commercial companies sampled used LIFO accounting in 1975 as against 25 per cent using that method in 1973. It may, however, be pointed out that whatever valuation policies are used, no convention has been developed concerning the level of physical stock which companies should carry. This contrasts with inventory theories which basically seek to maintain minimize the cost of providing and maintaining an inventory. Given this and also the existence of various methods of computing accelerated depreciation charges, one could argue that what used to be done for pricing purposes might differ from what was done in the company accounts.

Companies also vary widely with respect to the average time for which stock is held. Whatever the average time for this, the FIFO convention leads to the cost of stock consumed in the year (or any period) being charged to the profit and loss account at the purchase cost of the oldest stock on hand, which may be anything from a few weeks to some years old. The mechanics and determinants of working capital investment, of which stock appreciation is the principal element, have been presented elsewhere. However, the following illustration indicates the nature of cost omission that occurs under the conventional accounting system in periods of rising prices.

Table- 4: Stock Appreciation, Escaped Cost and Prices Policies—A Numerical Example

Company A—Cost Increases of 10% per Period (e.g. quarters)

Periods	P ₁		P ₂		P ₃	
	Unit	Taka	Unit	Taka	Unit	Taka
Company A	-	-	100	745	100	82.50
Variable Costs	1000	750	1000	825	1000	907.5
Fixed Costs		250		275		302.5
Closing Inventory	1000	1000	1100	1175	1100	1292.5
	100	75	100	82.5	100	90.95
A. Cost of Sales	900	925	1000	1092.5	1000	1201.75
B. Cost Incurred		1000		1100		1210
B Minus A (Escaped Cost)		75		7.5		8.25
Cost of Sales Per unit		1.028		1.092		1.202
Sales Price		1.233		1.310		1.44
C. Sales Revenue		1110		1310		144
D.C-A(Profit margin)	16.6%	185	16.5%	2175	16.6%	239.25
E.Cash margin (C-B)	9.9%	110	16.0%	210	16.0%	231.00
F.Cost Absorption (D.E)		75		7.5		8.25

Further Assumptions:1. There were no delays in cost-pass-through

2. Period 2 Price Period $\frac{\text{Period 2 unit cost of sales}}{\text{Period 1 unit cost of sales}}$ x Period 1 price & so on

3. Price was fixed to give 16.6% pre-tax profit margins.

6. STOCK APPRECIATION AND PRICE POLICY

The company in question commences business at the beginning of period I. The company's sales volumes and output level remain at a constant level of 1000 units and maintains an inventory, valued at a variable cost on FIFO basis, representing 10 per cent of physical output and sales. Variable costs are assumed to increase at 10 per cent per annum.

As the comparison between lines A and B indicate, the cost of sales recorded in the company's profit and loss account will, under the assumption of continuing cost increases, understate the cost actually

incurred in every period. This periodic understatement of cost actually incurred is matched by the increase in the value of stock (stock appreciation) over the individual period in question. The accounting profit will be spuriously inflated by the amount of the omitted cost, but will not be matched by a corresponding cash inflow.

Cost omission or absorption in the same manner would arise if the increase in stock values were due to volume increase, some indication of which may be obtained from period I data in the example. It was also demonstrated that if two companies were apart from their inventory valuation policies, in all other respects identical, the company whose unit inventory values and/or its volume were higher would in general have a lower 'cost of sales' and therefore a generally higher level of conventionally calculated profit. Rising level of inflation will cause higher and higher level of accounting profit as well as cost absorption. Net debtors (Trade debtors minus trade creditors) position is also likely to increase during inflation. It will have similar effect on accounting profit like stock appreciation.

Some evidences of under-charging of 'depreciation' and cost of stock in the manufacturing industry in Bangladesh may be obtained from the aggregate level data in the Census of manufacturing Industries (CMI) Report for the year 1981-82:

A.	1.	Total Depreciation	Tk. 1231,931.00
	2.	Addition to Fixed Assets	Tk. 1318,803.00
	3.	(2 divided by 1)	107 times or 7%
B.	1.	Beginning Inventory	Tk. 1,1901,058.00
	2.	Ending Inventory	Tk. 1,5395,530.00
	3.	(2 minus 1)	<hr/> Tk.3494,472.00

7. WHAT ARE THE LESSONS TO BE LEARNT FOR MANAGING UNDER INFLATIONARY SITUATION ?

(a) Construct an index or indices of major inputs that are required by your firm based on historical record of prices and costs. Beware of the trends of average level of inflation in the economy and monitor forecasts made by government departments and other national and international agencies, such as the World Bank. Keep track of possible devaluation of the local currency against major foreign currencies. Estimate the effect of the expected input price changes on your profit margin and adjust prices

upward according to your policy subject to market conditions. Finalise all preparation in advance to revise prices in time. Delay in cost-pass-three will result in reduced margins.

(b) Attempt to change accounting policy relating to inventory and fixed assets valuation. Change from FIFO to LIFO and charge depreciation to reflect current cost of replacement of the fixed assets may be revalued upward by using an index of current prices of those kinds of assets. If government policy on taxation of company profits are not changed to reflect rising cost make an attempt to reduce the level of inventory volume at the end of the financial year and spend large sums for maintenance of fixed assets as tax deductible expenses. In other words, try to maintain your production capacity intact and do not follow a self liquidating path by neglecting maintenance of fixed assets.

(c) Lending agencies should insist on the preparation of projected profit and loss and balance sheet and cash flow forecasts for the borrowing firms and prepare cash flow earnings statement for the last one or two years. The former will determine the additional requirement for funds (especially for working capital) and the later will indicate the bottom-line condition of performance in cash-flow terms and demonstrate borrowing and repaying ability. A short-cut method to estimate cash-flow earnings for an enterprise is given below. From the profit and loss statement and the balance sheet of an enterprise for the last two years cash-flow earnings for a year can be estimated as follows:

- A. Net Income before tax for the latest year;.....
- B. Add depreciation and other non-cash charges.....
- C. Fund from operation.....
- D. Less working capital investment:
 - increase in inventory over last year (-,+)
 - increase in debtors over last year (-,+)
 - increase in creditors over last year (+,-)
- E. Less addition to fixed assets
- F. Cash flow from operation (C-D-E)
- G. Less taxes paid
- H. Net cash flow earnings before dividends (E-G)
- I. Less dividend paid
- J. Net cash-flow (surplus/deficit (H-I)
- K. Finance to/from...
- L. Increase/Decrease in cash and bank balance.

DEVELOPMENT OF ENTREPRENEURS TO ACHIEVE TECHNOLOGY TRANSFER

M. MAINUL HAQUE

1.0 INTRODUCTION

Economic development is a dynamic process and the related technological implications too must be viewed as a dynamic trends. The speed of economic growth will not be dependent on technology per se but on the rate at which technological changes happen and their overall impact. Technological changes can take place through innovation and technology transfer. Developing countries like Bangladesh are mostly dependent on technology transfer process to get the benefit of any technological changes. This however does not undermine some of the innovations for developing appropriate technology that are taking place in developing countries.

Generally, the term "transfer of technology" is interpreted as being a process in which "technology" in use in developed industrialized countries is made available to less developed countries, without knowledge of the technology in question. This simplistic view gives a rather misleading picture of what technology transfer involves. We may very usefully define technology transfer as the transmission of know-how to suit local conditions, with effective absorption and diffusion both within a country and from one country to another. There are broadly four stages of accumulation of technology [1]. These stages are (a) ability to make independent technological choice; (b) effective utilization of technology which includes ability to make minor modifications and adaptations; (c) to make minor innovation and (d) capacity to create new technology. To achieve technology transfer entrepreneurs have definite role in planning and management at all the four stages of technology accumulation.

The objective of this paper is limited to the identification of specific role of the entrepreneurs in a logical technology transfer model and to emphasize the need for entrepreneur development planning to achieve technology transfer in developing countries like Bangladesh. The basic premise of this paper is the underlying fact that the critical factors limiting economic growth in developing countries are compounded by lack of entrepreneurs.

2.0 UNDERSTANDING ABOUT TECHNOLOGY AND ENTREPRENEUR

2.1 *Technology*

Technology means a variety of things. Many people think of it as only the technical heavy equipment aspect of applying modern science to economic activity. It is basically more than just the heavy equipment [2]. However, it is the capability of applying science to economic activity or production. Hence, it includes all the hardware, software, and other supporting activity. In other words technology denotes the sum of knowledge, experience, and skills necessary for manufacturing products and for establishing an enterprise. It may be noted that in developing countries usually technology transfer covers not only the specific product or the process of its manufacturing but also knowledge and expertise necessary for setting up a plant.

2.2 *Entrepreneur*

The term entrepreneur is said to have introduced by the French Economist Cantillon. He defined entrepreneur as "the agent who purchased the means of production for combination into marketable products". Many years later Dawing viewed an entrepreneur as a promoter who transformed ideas into profitable business [3;215-254]. Schumpeter saw an entrepreneur as an administrator with the ability to carry new combinations of practices in running a business [4]. These combinations include introducing new goods and new methods of production, opening new markets, finding a new source of raw materials, and carrying out a new organisation of any industry.

It is evident from the above definitions that an entrepreneur should be a highly motivated and trained person who tries to perform well regardless of the nature of the job. There ore, entrepreneur must be trained and developed to become an opportunity seeker and a decision maker. This is very important because the entrepreneur is the agent i.e. sender and receiver in technology transfer process.

3.0 ROLE OF ENTRPRENEURS TO ACHIEVE TECHNOLOGY TEANSFER

Since the process of technology transfer involves a transferer, a transferee and a host of other intermediaries, the perceptions on technology transfer vary quite considerably. Ideally, a holistic view of all the issues involved in the process would be desirable. Such a view helps the recipient in comprehending the possible gains from the transfer

process and provokes the transferer into appreciating the real needs of the transferee [5;72].

Basically, there are two ways of acquiring new technology: develop it or import it. Developing countries obtain most of their technologies from developed countries mainly through importation. Technology transfer occurs because of the existence of buyers and sellers and as such technology like other commodities is bought and sold in the world market.

In a technology transfer process the role of entrepreneurs is dominant because they are both buyers and sellers. For developing countries, the technology transfer is monodirectional and hence the success of technology transfer would depend on the receiver i.e. technology buyer. Therefore it is evident that achieving technology transfer would seek scientific and rational ways of decision making on the part of the buyer (entrepreneurs). To note that when a technological initiative is implemented by bureaucrats with no entrepreneurial skills and little experience of down to earth production functions, it often becomes problematic without the person concerned ever realizing that a real problem exists. However, technology transfer initiative would generally follow a preconceived policy framework pursued by the country under question. Such rational policy as regards transfer of technology will call for solving a set of problems like: what would be the type of technology needed; do the developing countries need the technology that the developed countries can offer, and how can it be ensured the transfer of right kind of technology needed for; how the payment could be made for the technology bought; and many others. These wide range of questions should receive due attention while formulating policies to ensure technology transfer [6;27].

As regards the role of entrepreneurs, it is self explanatory from a technology transfer model presented at figure 1. From the figure it is evident that entrepreneurs play the central role in a technology transfer process. Apart from sending and receiving technologies entrepreneurs also make assessment of the technologies under their own conditions. It is also observed that in spite of the felt need the sender must be ready as well as willing to transfer the technology and on the other hand the receiver must also be prepared to receive the same. Therefore, both sender and receiver must be well trained and provided with adequate information to handle the technology to be transferred amongst them.

It is also noticeable from the figure that determining the appropriate technology that the receiver needs and transferring it effectively are most difficult tasks. The appropriateness of the technology must be assessed

on the basis of numerous factors. Some of these factors are: markets, raw materials, labour, know-how, scale of production, willingness and ability of the receiver etc. Therefore, the entrepreneurs must have the background to consider judiciously all these factors for decision making concerning technology transfer.

Another important aspect that need to be mentioned is the fact that if the entrepreneurs are well trained and equipped with adequate know-how then capacity to bargain sufficiently by both sender and receiver leads to efficient transfer of technology to the benefit of both the parties. Entrepreneurs from most of the developing countries do not posses the required bargaining capacity and as such the technology transfer initiative is mostly dictated by the sender i.e., the entrepreneurs from the developed countries. Therefore, adequate skill transfer is necessary to develop entrepreneurs in developing countries so that they can play their due role in a technology transfer process.

From the strategic point of view, without such skill transfer, there can be no entrepreneur development and particularly it would be critical for the general public to be acquainted with the scientific way of thinking while conceptualizing a venture involving implementation of technology transfer mechanism [7]. Therefore, a movement for skill transfer to develop entrepreneurs should form an integral part of a long-term policy for achieving maximum benefit from technology transfer initiatives.

4.0 CONSIDERATIONS FOR ENTREPRENEUR DEVELOPMENT

From the foregoing discussion it is evident that entrepreneur development is a key issue which deserve serious attention to achieve technology transfer. Technology transfer perceptions suggest that maintaining the right level of skill and knowledge is essential so that the recipient country can benefit in attaining technological self-reliance. Obvisously, successful entrepreneur development is related to, and in fact, is dependent on the exisitence of a "technology culture" which nurtures an innovative environment in a country. The creation and promotion of such an environment on the other hand is a prerequisite for technology development also, particularly in countries where social and economic patterns and customs are bound by tradition.

It should be recognized that entrepreneur development as part of human resource development can be ensured only through education and training and as such would depend greatly on national education and training facilities. In the developing countries, the primary and secondary school levels lay more emphasis on liberal arts rather than sciene and

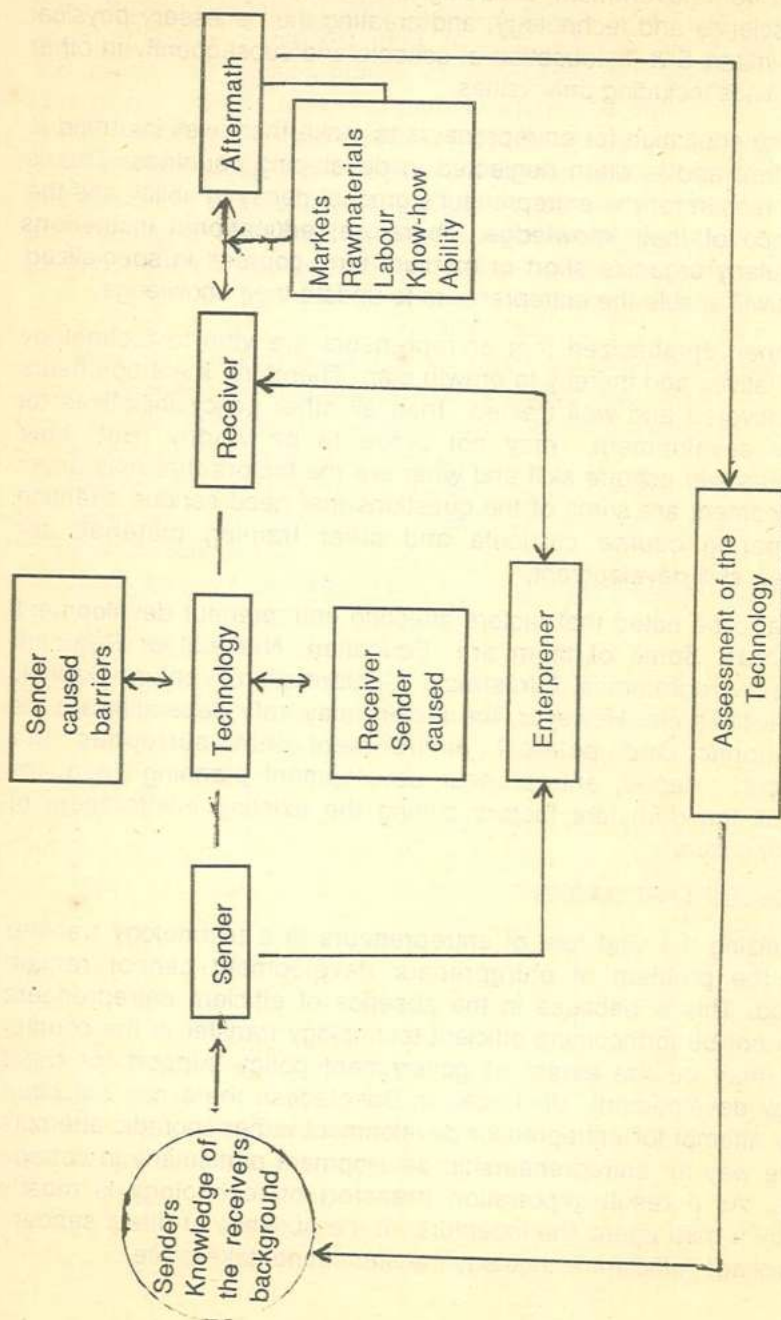


Fig: 1. Technology Transfer Flow Model.

technology. This trend should be reversed. This would require a deep commitment from government, including additional resources for teacher training in science and technology, and creating the necessary physical facilities to impart S & T education at schools and subsequently in other seat of learnings including universities.

Continuing education for entrepreneurs to make them well informed is very important and is often neglected in developing countries. This is usually the reason for the entrepreneur's gradual decay in ability and the obsolescence of their knowledge. Therefore, educational institutions should regularly organize short or medium term courses in specialized areas. This will enable the entrepreneurs to update their knowledge.

It has been emphasized that entrepreneurs are vital to technology transfer initiatives and thereby to growth plan. Therefore, if entrepreneurs are not motivated and well trained then all other policy initiatives for technology development may not prove to be worthy. But, how entrepreneurs can acquire skill and what are the factors that may affect their development are some of the questions that need serious attention while preparing course curricula and other training materials for entrepreneur skill development.

It may also be noted that factors affecting entrepreneur development are numerous. Some of them are: Education, National or Regional development programmes, Infrastructure, Information, Venture Capital, Training facilities etc. However, the factors may vary depending on the socio-economic and political environment that surrounds the entrepreneur. Hence, entrepreneur development planning need to consider all the dominant factors suiting the existing environment of "technology culture".

5.0 CONCLUDING REMARKS

Recognizing the vital role of entrepreneurs in a technology transfer process, the problem of entrepreneur development cannot remain unattended. This is because in the absence of efficient entrepreneurs there can not be forthcoming efficient technology transfer in the country whatever may be the extent of government policy support for rapid technology development. Until now, in Bangladesh there has not been made any attempt for entrepreneur development rather sporadic attempts are on the way for entrepreneurship development particularly in cottage industries. As a result importation (transfer) of technology is mostly handled by a third agent—the indentors. In the absence of direct sender-receiver linkage, efficient technology transfer cannot take place.

Therefore, the background, training and outlook of the entrepreneur class has to be developed in a planned way to make them conducive to learning modern management techniques for successful selection, absorption and implementation of technology in business and industrial enterprises. To this effect technology transfer is only a part of the whole game. Under the circumstances there is no option for the developing countries like Bangladesh rather than to feel the necessity for the training and retraining of personnel to produce capable entrepreneurs. Otherwise the absence of skilled entrepreneurs would hinder successful negotiations for importation of new technology (both hardware and software).

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MARKET MECHANISM AND GOVERNMENT INTERVENTION: DOES ONE SUCCEEDS WHERE THE OTHER FAILS ?

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The market mechanism is often credited with the virtue of the most efficient resource allocative device. It has also been denounced as the most potent inequality-dispensing mechanism. But for some goods and services, markets may not exist at all. Even where they do, their allocative function is not as efficient as it could be, thus calling for public intervention either as a market substitute or as its supplement. What are then the activities in which the government should legitimately be involved in? Obviously, there is no unique standard by which the legitimacy of any action can be judged. The liberal economists tend to look upon the competitive market mechanism as the standard, and hence competitive market failure as the necessary condition for governmental intervention in economic activities. According to this view, the government should confine its involvement in those activities in which the market fails to perform at all, or in which it can not do "sufficiently well".

But what constitutes a market failure which alone, according to liberal economists, justifies governmental correction? Given the belief in consumer sovereignty, efficiency of the competitive market mechanism is defined in terms of Pareto optimality. The market failure is then the failure to achieve Pareto optimality which refers to an allocation of resources (and the resulting output) such that it is impossible by re-allocating resources to make at least one consumer better off without making anyone else worse-off.

Competitive market mechanism may fail to achieve Pareto optimality, when a number of necessary conditions for its success are not met in practice. The purpose of this short essay is to review non-technically a few cases where markets are either inefficient or ineffective so that public intervention is required. The discussion will also throw light on several paradoxes like the failure of cooperation to materialise in situations where everyone concerned stands to gain from it, or the failure to determine the

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use of a resource owned by a private individual in whatever way he pleases.

PRIVATE VS. PUBLIC GOODS

Economic goods (broadly defined to include services also) can be classified on the basis of two characteristics:

- (a) whether they are rival in consumption, and
- (b) whether they are excludable.

If Mr. Karim's consumption of a kilogram of potato reduces the amount of potato available to other consumers, then potato is said to be rival in consumption. Consumption of some units of such a commodity by an individual will imply that those units are unavailable for consumption by anyone else. Not all goods have this particular characteristics. Take the example of a lecture delivered by a scholar in a large hall. The consumption (listening) of this lecture by a person does not affect how much of it will be available to others present in the hall. The lecture is thus non-rival in consumption.

Some goods exhibit another distinctive characteristics. The owner of such a good can, if he wants to, exclude others at reasonable costs to himself. Suppose Mr. X owns a pond which is currently being used by his neighbours to wash their cattle. The pond owner is not paid for the facilities used, and he thus wants to stop the practice. His ability to do so depends on several factors. First, the law of the land must give him the exclusive right to determine who will use the pond and in what ways. These are known as his property rights. Secondly, he must have the resources to enforce his rights. For example, he may have to sue the trespasser, or put up fences, or engage someone to keep an eye on his neighbours. These are known as his exclusion costs. Third, the pond owner will have to decide whether the costs of exclusion are low enough to make the attempt worthwhile. If the answer on all three counts is in the affirmative, then the pond owner might decide to take steps to keep his neighbours from unauthorised use of the pond.

Other goods do not share this distinction. For them, exclusion is either impossible, or is very costly. Suppose a marine fisherman is to exclude other fisherman from fishing in the sea which is usually a free access resource, because the law does not give anyone the exclusive right to fishing. Therefore, no fisherman can exclude others from fishing in the sea legally. Even if he had such rights, he would soon discover that it is very costly to detect the violators and get them punished, particularly when

(a) the number of potential violators is quite large, (b) the punishment prescribed by law is relatively light, and (c) the technological aspect of detection devices is crude and traditional (and therefore costly).

Commodities having both the rivalry and excludability characteristics are known as private goods. These goods may be provided through the market by voluntary transactions between the consumers and the producers, usually without state intervention. The consumer of a private good has to reveal his preferences for such a good whenever he wants to buy it. The revelation of preferences is a necessary condition for voluntary exchange to take place.

In contrast, in the case of public goods, government intervention is necessary. The term has been variously used in the literature to refer to goods with one or more of the following characteristics:

(a) Every member of the society (or of the region) consumes the entire amount of the good produced.

(b) If the good is produced at all, the cost of supplying it to an additional consumer is zero.

(c) A person's consumption of the good does not reduce the amount available to others.

Goods having all the three characteristics are often called pure public goods. Since non-exclusive consumption is the common characteristic of all public goods, they must be intangibles.

The light house is a classic example of a pure public good. All the ships in the neighbourhood of the light house consume the same amount of the service (beacon light). It is impossible to parcel out services to suit the requirement of the individual ships. Evidently, the cost of supplying the service to an additional ship in the vicinity is zero. Finally, the light house service enjoyed by one ship does not reduce its availability to other ships. National defence expenditures and pure information are other examples of public goods. Information is said to be pure when it can be costlessly transmitted. Weather forecasts may be an example of pure information because the marginal cost of serving one more customer within the command area is zero. Some people may not, however, be aware of the forecasts, or may not benefit from them equally. Therefore, weather forecasts will not, strictly speaking, qualify as pure public goods, but they nevertheless have certain public goods characteristics.

It should be noted that not all public goods share the excludability property, though all have the non-rivalry property. To illustrate, let us take

the case of a park. My consumption of its scenic beauty does not reduce the same available to others. The park authority can, if it chooses to, bar a person from entering or going near the park, if he refuses to pay the entry fee. Examples of public goods with non-excludability property have already been given - the national defence expenditures, and the light house services. If defence protection is given to one citizen, it is given to all. The value that different citizens place on defence protection may of course vary widely. For example, people living near the border may put higher value on border patrol than people in the interior. Similarly, a sailor or a farmer will presumably gain more from weather forecast than a poet or a painter.

On the other hand, there are public goods whose consumption can be varied to suit individual requirement. Television and radio services are examples. One can consume various amounts of these services including zero. These goods are known as optional public goods. Non-optional public goods are those which must be consumed in the amount provided, for example, the defence services.

MARKET AND PROVISION OF PUBLIC GOODS

The difficulties of providing public goods through the market follow from their characteristics, and can be easily illustrated. Let us suppose that every year floods wash away crops in a certain locality. Everyone affected by the flood feels the necessity of flood control devices. Will a private construction company go into the venture? The company should be interested to know how much the beneficiaries are willing to pay for flood protection services in order to determine whether the construction of the facilities will bring enough revenue to cover the costs and to yield reasonable profits. A company executive visits every house-head in the area. Each of them assures him of payment in return for flood protection services. Problems will, however, arise on the sharing of costs. Obviously, not all farmers will benefit equally. Benefits accrued will depend, among other things, on the amount of land owned in the flood prone area. One way of sharing will be in proportion to the amount of land owned. Farmers are unlikely to agree on this principle voluntarily.

Because of the public good nature of the output of the project, flood protection for one implies the same for others, though they may value it differently. If it were a private good, say potato, anyone who wanted 2 kilograms could be made to pay twice as much as another who wanted only one kilogram. This is possible because the total output (however small) may be divided among consumers in different quantities and

charged differentially. In contrast, even though the amount of protection services may be scaled up or down, whatever amount is produced must be supplied to one and all, no parcelling out being possible. This gives rise to a kind of opportunistic behaviour known as the free-rider problem.

THE FREE RIDER PROBLEM

This problem arises because a beneficiary has the incentive to believe that he can freeride i.e. enjoy the service, even if he does not pay for it, provided others are willing to do so. The basis for this kind of belief is the non-exclusive nature of consumption. As a farmer in the above example, I would be tempted to say that the flood protection is worth very little to me, probably none, because I may be asked to pay as much as I say it is worth to me. I know that I can continue to consume the service, if provided, even though I refuse to pay. The same temptation exists for all other beneficiaries, especially when their number is relatively large. As a result of concealing the true preference for the service, the company executive will discover that even though all farmers say that they stand to gain, the total (understated) demand (and hence benefit) is not large enough to justify private investment. The private sector supply of the flood control service will be zero, because it has no way of determining the true level of demand and of making the customers pay accordingly.

As mentioned above, the free rider problem is likely to be quite serious if the number of potential beneficiaries is quite large. In the small number case, each may realise that if he refuses to pay for the good, it may not be produced at all. Even here each will try to convince the other that his demand is quite low, and perhaps he can do without the service. The private market will in any case undersupply the public goods (in extreme cases the supply may be zero as we have already seen).

PUBLIC GOODS AND PUBLIC AUTHORITIES

Public authorities must therefore come forward with appropriate devices and methods to elicit true preferences of the beneficiaries in order that the public goods are supplied. But it is not necessary that the authorities engage in the production of public goods. What is crucial is the estimation of demand for various public goods. The government may then undertake their production or have them produced by the private sector. For example, national defence will usually be provided by the government, while the roads, highways and education may be left to the private producers. In this essay, we shall not deal with the methods of eliciting preferences for the provision of public goods.

EXTERNALITIES

We shall now turn to another important concept known as external effects, or simply externalities. External effects are said to arise when the decision of a producer or a consumer directly (other than through the market mechanism) affects the production and consumption decisions of other producers and consumers. Clearly we are referring to the so-called technological externalities which have important implications for public policy, because some of their effects are transmitted through non-market channels. For example, when an aluminium factory emits clouds of smoke near residential buildings, the inhabitants who have to inhale the smoke are adversely affected. This is an example of undesirable externality created by a producer for consumers. If there is also a laundry in the vicinity, it has to incur extra costs to keep the clothes clean. In the latter case, the negative externality flows from one producer to another.

Externalities can also run from consumers to producers and vice versa. If people throw litter near the entrance of a restaurant which has therefore to incur costs of cleaning, they create (negative) externality for the restaurant owner (consumer-to-producer externality). If, in the place of a restaurant, we have another person's lawn, the externality created is a consumer-to-consumer externality. In all the examples, the external effects created are negative, i.e., they adversely affect the party or parties concerned. But external effects can be positive too. If I am a music lover, my satisfaction increases, if you play the kind of music I love. Or, take the well-known example of the bee-keeper in the vicinity of an apple-grower. Each is helpful to the other. Bees help the apple grower by cross-pollinating the apple trees, while the apple trees help the bee-keeper by offering apple blossoms as feed for the bees. This is also an example of reciprocal externality.

MARKET EXCHANGE AND EXTERNALITIES

External effects create problems for provision of goods affected through the market. To see how the problem arises, let us again consider the case of the aluminium factory. When the inhabitants of the neighbourhood suffer from the smoke that it emits, they have to incur costs of medical treatment, which uses up society's valuable resources. Therefore, from the society's point of view, the cost of production of aluminium wares should also include the cost of treatment of affected citizens. If the factory owner is not required by law to compensate the residents, the private cost of aluminium products is lower to the extent of the costs incurred for medical

treatment. In short, the social cost of production is larger than the private cost, because a part of the cost is external to the firm.

The owner of the factory will have the incentive to produce a larger quantity of the aluminium products than when he has to absorb the external costs as his own. This in turn implies that he is committing to aluminium products more of society's resources than the society wants. In other words, the market allocates more resources to aluminium products than are socially desirable. The reason for resource misallocation can be more clearly seen if the economic agent affected is, for example, a laundry owner, rather than the neighbourhood residents. The laundry owner has to absorb the external costs imposed upon him by the aluminium factory owner. Since his private costs go up, he responds by producing a lower level of laundry services. He, therefore, devotes fewer resources to production than the society wants him to. The upshot is that in the absence of the externality, the aluminium output would have been lower and the laundry output higher than with externality. Since this is exactly the opposite outcome that the consumers want, the externality has certainly caused misallocation of society's resources between the production of the two products. Private markets will not automatically correct this externality-caused misallocation.

It is now easy to deduce that resource misallocation may also result from external benefits as well. If an economic agent creates external benefits for which he is not compensated, his output will be lower than what is socially desirable. If you benefit from what I do, and you do not compensate me for that, the level of my output will be determined solely by my private cost benefit calculation, your benefit playing no role in it. Now suppose you propose to subsidize me. I may look upon it as a decrease in my (marginal) cost, or an increase in (marginal) benefit for both of us (social benefit). In either case, I would be willing to increase my output, now that I receive side-payments in the form of subsidy. The misallocation of resources will thereby be corrected.

Another type of externality known as pecuniary (as contrasted with technological) externality is of less significance for public policy, because its effects are duly taken care of by the market itself. For example, the expansion of output by one producer may affect other producers through an increase in the prices of factors used. While it will change the previous allocation of resources, it will not cause any misallocation in the Pareto sense. Therefore, public intervention will be unnecessary on efficiency ground, though income distribution considerations may justify it.

To sum up, for pure private goods (not plagued by external effects), the institution of competitive market, through voluntary exchange between consumers and producers, can in principle, ensure an efficient outcome. If externalities are present, markets will cause misallocation of resources which, in the small number case, may be corrected by public intervention in the market or in the realm of law to adjust the existing property rights. For public goods (non-exclusive consumption), markets may not even exist, despite the fact that scales of output are possible at which the total benefits to consumers exceed total costs. The government has therefore to come forward for public production or for public expression of demand (the two may not necessarily involve the same goods).

DEALING WITH EXTERNALITIES

We shall now touch briefly on a few methods of dealing with market failures caused by externalities. The problems and methods of public expression of demand will not be discussed. When the markets for goods fail, the cornerstone of the remedy is to make the parties concerned face the socially optimal prices so that inefficiencies of markets are removed.

(I) TAXES AND SUBSIDIES

One way of confronting parties concerned with social rather than private prices is to give subsidy to the benefactor (such as the person playing the music which his neighbour enjoys) and to tax the perpetrators of external costs (such as the aluminium factory owner who imposes costs on the laundry owner). Subsidies and taxes tend to correct the misallocation in the following way. The polluter's cost of production goes up as a result of taxes. Other things remaining constant, this will induce him to curtail his level of production. The costs which were external previously are now made internal by taxes of the appropriate type and size. If taxes can be appropriately chosen, then he will presumably produce the socially optimal level of output.

The administration of tax and subsidy programme noted above is relatively simple, if the externalities are of the aggregate type, an example of which is road congestion. An additional vehicle on an already congested highway would add to the total amount of congestion. But any individual driver does not care who is causing the additional congestion. The externality caused here is of the aggregate type, because the discomfort created by congestion is dependent on the aggregate amount of driving, the identities of individual drivers being unimportant or irrelevant. Another example of aggregate externality would be a group of

factories situated around a lake from which each uses water as a cooling agent. All the factories release used (hot) water back into the lake. The water temperature therefore goes up, reducing its effectiveness as coolant, but an individual factory does not care who are responsible for this. It simply adjusts the amount and duration of water used in successive rounds. This is thus an example of aggregate production externality. For this type of externalities, the task of tax formulation and administration is made easier by the fact that a single tax (subsidy) paid by (to) all consumers or producers will suffice for optimality.

On the other hand, if the externality is not of the aggregate type, the job of the tax authority becomes impossibly complex. Here people care not just about the externality producing activity, but also about who are creating it. To correct this type of externality, the government will have to design a set of taxes (subsidies may be regarded as negative taxes), one for each of the 'n' people consuming or producing the externality generating good. It is unreasonable to expect that the government can come up with an appropriate set of corrective taxes for a single good in such a case, let alone for many goods.

(II) INTERNALISATION

Sometimes externalities can be corrected through internalisation. Let us illustrate what it is. Imagine that the aluminium factory owner of our example acquires control of the laundry through purchase. In deciding upon the aluminium output level, the new owner will take into account the damage it used to cause to the laundry firm, because it is now his firm. As he is interested in maximisation of profit from both the firms, he will balance the marginal profit from an additional unit of aluminium output against the increase in cost and hence decrease in profit at the margin from laundry output. Thus his interest coincides with the social interest, and the externality problem will disappear. Incidentally, the taxes and subsidies mentioned before, properly interpreted are devices for internalisation of externalities in the sense that the government forces the persons involved to take decisions on the basis of social optimality.

(III) CREATION OF MARKET

A novel way of coping with externalities would be to create market for them. This prescription logically follows from the definition of externalities. Let us take the case of a leather factory that releases chemical wastes into a river thereby adversely affecting the fish production of a down-stream fishery. We can say that the leather factory produces two products instead of one-leather and pollution. If somehow pollution could be correctly

priced, the factory will be induced to produce the 'correct' mix of the two products. The first requirement for the emergence of a market for pollution is the assignment of property rights. It does not matter for efficiency who is assigned the right to pollute or the right of not to be polluted, though it may have profound income distribution implications.

Let us assume then that the leather factory has the legal right to pollute with impunity. Therefore, it will not change its present level of output, unless it is assured of compensation by the fishery for the decrease in profit caused by restriction of output (and hence diminution of pollution). Suppose the fishery proposes to do so and the factory owner agrees. Now if the latter diminishes aluminium output so as to reduce one unit of the pollutant at the margin. This will lead to some marginal gain for the fishery, but some marginal loss of profit for the leather factory owner. This marginal gain represents the upper limit to what the fishery will be prepared to pay the leather factory in order to buy the right to be free from a unit of pollutant at the margin. The factory, on the other hand, must be paid at least the equivalent of the marginal loss of profit as a result of reducing output in order to induce him to sell the right. The amount of right bought and sold (and hence the amount of pollution produced in equilibrium) will be determined by the equality of fishery's marginal gain and factory's marginal loss of profits.

In the process, fishery's output will go up, while that of the leather factory will fall (as required for optimality). Notice that the result has been obtained by reviving the market mechanism through voluntary negotiation, and without any intervention by the state except through the assignment of property rights by modification of the country's law. As mentioned before, the same result will emerge, if the fishery enjoyed the right of pollution-free water. In that case, it is the leather factory that will make offers to buy the right to pollute from the fishery.

A moment's reflection will show that the creation of markets for pollution may work if there are two parties (or a few parties) to the negotiation. When a large number of people are involved in the negotiation, the possibility of reaching a mutually satisfactory settlement is reduced, for lack of a consensus to share the benefits and costs of the bargain. To illustrate this point, let us assume that we have one leather factory, but many fisheries. Let us further assume that the fisheries have the right to enjoy pollution-free water. Will the private market be able to do the trick now? The answer is probably 'no'. Why?

First, the problem of sharing the costs and benefits will now be vastly increased, because the externality will approach the characteristics of

pure public good as the number of persons affected increases. Secondly, it will be very difficult to locate and organise the actual and potential victims. The more scattered the victims are geographically, the more difficult it will be to organise them into a bargaining group. In other words, the transaction cost of reaching an agreement will be too high to dissuade the organisers from embarking on the venture. Thirdly, even if the costs of organisation can be kept within reasonable bounds, problems may arise about the sharing of costs of buying the right of pollution-free water. Each of the victims will have the tendency to play down the extent of his benefit from the bargain. Because of this tendency to free-ride, the attempt may fall through, even though all stand to gain from the bargain. The problem is the same as with the flood control project referred to earlier. A potentially beneficial bargain fails to materialise, and hence the resource allocation continues to remain non-optimal. Unfortunately, the victims who are really willing to pay their fair share cannot have the bargain struck, even if they were willing to tolerate some free-riding. If an individual victim suffers an insignificant part of the total damage caused by pollution, a single victim or a small number of them may fail to contribute enough resources to bring a law suit against the polluter.

WILL THE GOVERNMENT DO BETTER?

While the market failure indicates the necessity for governmental intervention, it does not necessarily follow that the government's actual performance will be any better than the market's. The corner stone of liberal philosophy in economic matters is the firm belief in consumers' sovereignty. Given this, the public policy is intended to achieve the same goal as the competitive market system will. The goal is the maximisation of well-being of the members of the society expressed through the preferences of the individual citizens, either through the market (in the case of private goods) or through a political (voting) process (in the case of public goods).

Some of the problems surrounding the tools of governmental action (e.g., taxes and subsidies) have already been briefly noted; but there are many more. In addition, there are several questions of fundamental nature. Many of them follow from the principle of consumers' sovereignty. When the government participates in economic activities, what is the guarantee that the government officials will not interject their own preferences on policy matters in disregard of consumers' sovereignty which dictates that the government should function as an agent of its citizens? This is not simply a problem of good faith on the part of the government officials. For example, if they must respect consumers'

preferences, what should they do, if preferences of citizens clash, as they most probably will?

At the philosophical level, another problem crops up. When a technical condition of Pareto optimality fails, a new set of Pareto optimal conditions are derived, taking the failure into account. Then it can be shown that the government, acting through say taxes and transfers is able, in principle, to achieve the latter set of Pareto optimal conditions. But in reality, it may not be able to apply its tools to realise the intended results. The question then is: Is governmental intervention justifiable in the hope of uncertain, but potentially better results? Moreover, can the governmental intervention be limited to the affected markets only, leaving the job to decentralised competition in other markets? If constraints exist on the forms that the public policies can take, we have a policy environment in which it is no longer possible to say that the government policy should try to achieve what the market could in the absence of its failure.

PRODUCTIVITY OF A CHAIN STORE

MUZAFFER AHMAD*

RETAIL MARKETING IN BANGLADESH

This section deals with retail marketing of consumer goods in Bangladesh. The findings are based on a survey conducted by Bureau of Economic Research sometime back. That is one of the few scientific work done in this area. The survey attempted an appraisal of the organization and operative conditions of the retail stores including problems and efficiency. The survey results are based on interview given by 192 retailers and 419 consumer families. For limiting the sample size temporary shops, mail order house and peddlers were excluded. A retailer is defined to be one with a permanent location and selling one or more of eight items included in the study. The survey was limited to urban centres located at zilla townships of the then 52 such townships; five were selected: one from north-western part, one from south eastern part, one metropolis, one port and a central township. The population and shops registered with the municipality were used for distribution of the total sample over these townships. The shops were randomly selected from a list obtained from municipal office. The consumers were similarly selected from those areas.

CHARACTERISTICS OF RETAIL TRADE

The retail operation in Bangladesh is characterised by smallness of operation and individual ownership. Over 80% of the retail stores are owned by sole traders and only 17% are partnership organization. Private limited companies or cooperatives are virtually insignificant in number.

Table -1: Ownership Pattern of Retail Stores

location	Sole-owner	Partnership	Private Ltd.Co.	Cooperatives.
Metropolitan				
City(M)	82.22	15.56	2.22	-
Port City(P)	80.00	16.00	-	4.00
Central Medium				
Township(M)	79.17	20.83	-	-
North-Western	76.00	24.00	-	-
small township(NW)				
South-Eastern	88.00	12.00	-	-
small township(SE)				
Average(AV)	81.47	16.94	1.06	0.53

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Ahmad : Productivity of a chain store

Such ownership of retail shops is consistent with small scale operation. Only about 20% of retailers have other business and this is true only in metropolitan area and port city. On average only about 28% of owners run their own shops.

Table-2 : Percentage of Shops run by owner himself

M	44.0
P	72.0
CM	41.7
NW	8.0
SE	40.0
AV	27.5

More than 30% of retail shops do not employ any salaried staff. In non-metropolitan areas this is even higher. The shops are run by owner alone or with assistance from family members.

Table-3: Number of Salaried Staff (% of Shops)

Location	Nil	1	2	3	4	5+
M	24.4	28.9	16.7	6.7	8.9	14.4
P	48.0	20.0	4.0	8.0	16.0	4.0
CM	54.2	33.3	8.3	4.2	-	-
NW	12.0	52.0	28.0	8.0	-	-
SE	40.0	12.0	12.0	16.0	8.0	4.0
Average	31.8	29.1	14.8	8.0	7.4	8.9

Retail stores are open long hours-12 hours a day; some are open as long as 15 hours. This is made possible by sole ownership of trade and employment of family members or closely related people. This is also necessitated by nature of business.

Most of the retail shops seem to be new, more so in metropolitan areas. About 78% of shops were established a year ago, 25% two to three years ago, 20% aged four to eight years, another 19% nine to twelve years. This may be indicative of high turnover in ownership as well as expansion in retail trade.

Table - 4: Age Structure of the Shops

	Upto				
	1 year	2-3	4-8	9-12	12+
M	21.11	18.89	33.33	24.44	12.23
P	20.00	24.00	12.00	20.00	24.00
CM	12.50	20.83	20.84	8.33	37.50
NW	8.00	48.00	12.00	20.00	12.00
SE	24.00	28.00	20.00	8.00	20.00
Average	18.35	24.89	19.57	19.04	17.97

Most retailers obtain supply from the wholesalers who in turn get it from the manufacturers or importers. At times the retailers buy directly from manufacturers or importers or their sole agent. But in those cases the retailers buy is large quantity. Wholesellers supply about 75% of the retail merchandise, while the manufacturers supply about 13%. About 5% supply is obtained from sales representatives, other traders or own manufacture. Majority of retailers (over 80%) contact suppliers in person.

Table-5: Distribution of Shops according to Sources of Supply

	M	P	CM	NE	SW	AV
Wholesellers						
in Dhaka	58.3	29.0	46.1	25.1	8.0	47.6
Outside	5.6	39.2	8.1	54.9	76.4	19.0
Importers						
in Dhaka	2.5	0.4	1.4	-	-	1.8
Outside	0.5	0.2	-	0.9	1.5	0.6
Sole Agent						
in Dhaka	12.0	0.3	3.8	-	-	8.4
Outside	-	5.9	3.0	2.6	5.5	1.5
Manufacturers						
in Dhaka	9.0	1.9	1.5	2.6	0.5	6.9
Outside	3.9	0.1	11.9	1.2	-	3.0
Other traders	2.4	14.0	3.8	2.7	3.1	4.0
Direct	1.0	3.8	8.2	0.5	4.7	2.0
Importers						
Others	4.8	5.2	12.2	9.5	0.3	5.0

The retail shops are small. Most of them invest less than US \$1000 in fixed and circulating capital. Next to this model group invest no more than US \$ 2000. Shops in metropolitan area invest higher amount an average.

Table -6: Percentage Distribution of Shops According to Capital

	(US\$000)					
	Upto1	-2	-4	-6	-10	10+
M	33.3	26.7	8.9	12.2	6.8	12.1
P	32.0	16.0	20.0	8.0	20.0	4.0
CM	56.5	30.4	8.7	4.4	-	-
NW	60.0	4.0	28.0	-	8.0	-
SE	48.0	16.0	16.0	8.0	8.0	4.0
AV	41.5	21.3	13.8	8.5	8.0	6.9

The ratio of fixed to circulating capital varies around 1:2 and 1:3. For Metropolitan city the ratio of fixed to circulating capital was found to be 34:66, for port city 26:74, for central medium township 32:64, for northwest small town 24:76 and for southeast small town 27:73.

Much of the finance for business was from own sources (two-thirds) and others were loan financed. Bank loan and suppliers credit are important. Where bank are not fully operative, trade credit have assumed greater importance. It may rany of the retailers do pay in advance to

Table 7: Sources of Capital (percentage of total)

	Own	Bank loan	Suppliers Credit	Others
M	67.2	14.1	17.6	1.1
P	71.1	9.2	19.4	0.3
CM	85.4	0.1	14.0	0.5
NW	64.6	-	29.4	6.0
SE	60.2	27.2	9.1	3.5
AV	67.5	13.5	17.6	1.4

obtain the merchandise; others pay on receipt of goods or later. It appears that nearly one-fifth of circulating capital is funded by trade credit. It is highest in North West region (38.8%), followed by metropolitan city (26.6%), port city (26.1%) and central medium township (20.4%). This is lowest in the southeast small town (12.5%).

The monthly average sales in a retail store is also low. About 30% of shops sell no more than US \$200 in a month. Another 25% sell between 200 and 400 dollars worth of merchandise in a month. Another one-fifth

Table-8: Monthly Average Sales (US\$)
(Percentage distribution of shops)

	Upto 200	-400	-600	-1000	-1500	-2000	-4000	Above
M	24.3	30.0	17.8	8.9	7.8	4.4	5.6	2.2
P	28.0	12.0	16.0	20.0	16.0	4.0	4.0	-
CM	37.5	29.2	20.8	8.3	4.2	-	-	-
NW	44.0	28.0	16.0	2.0	-	4.0	-	-
SE	33.3	16.7	29.2	8.3	8.3	-	4.2	-
AV	30.9	25.3	18.6	10.1	6.5	3.2	3.2	1.0

sell between 400 and 600 dollars worth of goods. Higher sales is concentrated in metropolitan and port city areas; more so in port city.

Most of the sales (90%) are conducted in cash; though many retailers (72%) indicated that there are some credit sales as well. The study indicates seasonality in business. Besides festivals, the seasonality coincides with traditional harvesting season; more sales in winter than in summer.

The retailers normally add a mark-up over procurement cost. At times retail price is also suggested by the manufacturers. The retailers also exact a scarcity premium in areas where supply seem to be irregular and for commodities which indicate sticky demand characteristics.

Retailing expenses include wages, rents, electricity, taxes, transport and other charges. These charges vary according to size and location of the stores; however efficiency of retailing operation affect these cost elements. It is difficult to estimate the cost of retailing in Bangladesh, because of the fact that considerable variation exist from shop to shop and from area to area. For example rent payments are related to ownership of premises, location and area. The BER survey indicates the share in the consumer "Expenditure unit" of cost of goods and elements of retailing cost which is reproduced below.

Table-9. Share of cost elements in buyer's "Taka"

	Salaries & Wages	Rent	Tax	Profit	Cost of Goods
M	4.8	1.6	0.4	7.6	84.6
P	4.8	2.7	0.5	7.6	84.4
CM	2.1	1.7	0.0*	7.6	88.6
NW	5.5	1.5	0.6	5.8	86.6
SE	6.1	3.0	0.3	6.1	84.5
AV	4.7	1.9	0.4	6.2	85.8

*Insignificant

This indicates that on average a little more than 14% of consumer payment is retailers margin of which a little more than 6% is profit and the rest account for various cost.

Salary and wages account for about 5% of consumer Taka. Amount paid varies from US \$ 8 to US \$ 50 a month. As an organization increase, number and size of the shop would increase, requiring more absolute expenditure on this account. This would not increase share of the total cost if the retailing is done more efficiently i.e. of value of retail trade increase more than proportionately.

The employees of retail shops are unskilled and there is large reservoir of unemployed labour available. Hence the pressure for increase in salary and wages would not come from the supply side. It would be basically due to increase of money-wages as subsistence cost goes up.

Rental and electricity charges have gone up substantially since the survey was undertaken. The electricity charges varied between US \$ 6 to US \$ 30. Rental charges are high in larger town and within those areas in busy shopping districts.

Tax incidence on consumers, as mentioned here, do not include indirect taxes. These are holding tax, income tax and license fees. The amount of such taxes have also increased overtime. The taxes paid, according to survey, varied between US \$ 7 and US \$ 53; the average being US \$ 46. However most of the retailers pay no more than US \$ 10 per annum.

Transportation costs depends on the distance of the procurement point and mode of transport. It was not possible to calculate actual share of transport cost per unit of consumer taka.

Insurance is almost non-existent in retail trade even for shipment of goods within the country. Storage cost also do not seem to be an element of cost at all as retailers do not store much merchandise.

The profit on invested total capital seem to be reasonable. It was estimated to be 16.0% in metropolitan stores, 15.4% in port city, 30.5% in central medium township, 18.0% in Northwestern township and 15.1% in Southeastern township. However profit/sales value ratios were 7.68, 7.67

7.67, 5.8 and 6.1 per cent respectively. This profit however includes remuneration for owner-operator.

The survey indicates that the reasons for low retailing efficiency are disproportionately large fixed capital requirement, seasonal capital shortage, untrained salesman, transport problem, irregular supply, poor quality of product, and absence of modern retailing technique.

The survey also focused on consumer behavior. They seem to buy from shops within 1-3 mile radius. The purchase decision are largely taken by male head of the family. They buy as and when needed. Evening and weekends are preferred shopping periods. The consumers demonstrate shop-loyalty. They enjoy bargaining; people from low income strata seem to prefer it more. Consumers feel that shop do not provide adequate information and they discourage visitation for 'merchandise, price and quality' information only. The consumers have an alleged preference for foreign goods but the consumers claim to prefer quality for its price.

II. RETAILING IN CLOTH AND CLOTHING IN DHAKA CITY.

In the previous section, we have discussed in general retail marketing in Bangladesh based on a survey conducted by Bureau of Economic Research. In this section, we shall focus on retail marketing in cloth and clothing based on two surveys conducted in Dhaka city. The sample were not large. It included 120 hawkers/peddlers (out of estimated 3,000), 70 temporary shops (out of estimated 5,000) and 45 shops (out of estimated 4,500). The hawkers were interviewed in 12 different locations on twenty four different days; the locations were randomly chosen, not the hawkers. The 70 different temporary shops were chosen from five different locations where such concentration exist. Shops are largely of the some physical size. Selection were made on visual impression of differences in product-mix. The shops were similarly chosen from three different locations and in selecting the shops size variation was also taken into consideration. The sample is not random as such but generally indicative enough.

Table-10: Ownership of Business

	Sole Proprietorship	Partnership	Cooperative
Hawker/Paddler	100*	-	-
Temporary Shops	98	7	-
Permanent Shops	78	21	1

It is seen from the table above that more "permanent" is the business in the sense of a location and structure, the sole-ownership declines as investment in fixtures, furnitures increases requiring more capital. We also found that 98% of hawkers run their own business and 2% were working for others. As to temporary shops 84% shops were run by owners themselves. In case of permanent shop only 35% were so run.

Table -11: Age Structure of Business (%)

	Upto						
	1 years	1-2 years	2-5 years	5-7 years	7-10 years	10-15 years	15+
Hawkers/Peddlers	7	13	25	27	19	6	3
Temporary Shops	1	3	39	37	18	2	-
Permanent Shops	-	-	3	15	45	18	9

Age structure of these business also varied considerably. There are differences as to salaried staff employed by them.

Table-12: Business Classified as per Salaried Staff

	Percentage distribution					
	Nil	1	2-3	4-6	7-10	10+
Hawker	7	23	-	-	-	-
Temprary Shops	30	49	21	-	-	-
Permanent Shops	-	7	39	30	13	15

The hawkers depend on their own production of cloth or production in his own area.

Table-13: Sources of Supply of Merchandise

	Percentage distribution of Sales		
	<u>Hawkers</u>	<u>TemporaryShops</u>	<u>Permenent Shops</u>
Wholesellers	5	3	15
Sole Agents	-	-	3
Importers	-	3	13
Manufacturer	22	50	61
Own production	73	43	6
Other Traders	-	1	2

The temporary shops dependence on production by others increases considerably though they seem to retain their own supply as well. Their dependence on wholesalers and importers do not seem to be high. For the permanent shops the principal source of supply are the manufacturers followed by wholesalers and importers. Some shops also have a source of their own production.

The shops employ capital from their own sources. The amount of fixed capital investment in case of hawkers is small, where as it is substantial for permanent shops.

It is interesting to note that there seem to be nearly neat distribution of the state of trade and capital requirements. However, it may also be mentioned that the capital are expressed in actual terms and has therefore been influenced by current value of money. Some of it has been corrected by translating taka value into dollars by corresponding exchange rate. As the two surveys were taken at different times (1978 and 1981), some price distortions are present. When compared to retail trade situation in the earlier, section, it will be noted that trade in cloth and clothing seem to have a higher capital investment at least at the bottom level for the permanent shops.

Table-14: Percentage Distribution of Shops according to fixed and Circulating Capital.

	(US\$)								
	Less than	-500	-1000	-2500	-5000	-7500	-10,000	-20,000	More than
	100								20,000
Hawkers	63	26	1	-	-	-	-	-	-
Temporary Shops	-	-	15	23	49	13	-	-	-
Permanent Shops	-	-	-	2	11	26	47	13	1

The ratio of fixed to circulating capital varies with the state of trade. For hawkers fixed capital accounts for less than five per cent on average; the ratio being 1:19. For the temporary shops, the ratio is 1:11 and for the permanent shops it is 1:25.

Sources of finance also varies according to the state of business. For the hawkers for 70% of them the total capital was their own and for 23% loan from friends and relatives were obtained. As a percentage of total capital the loan amount was less than 12%. As they are largely their own

suppliers, they have had some trade loan for obtaining raw materials, which accounted for another 33%.

Table-15.: Business as per Sources of Capital

	Percentage Distribution					
	O	O+R	O+T	O+R+T	O+B	O+B+T
Hawkers	69	13	8	10	-	-
Temporary Shops	58	8	21	8	3	2
Permanent Shops	44	2	17	3	12	21

O=own, R=Relative, T=Trade, B=Bank

For temporary shops only a small percentage have access to bank loan. Trade loan is important for them as a resource. Relatives at times have supplied part of the required capital. Own capital has however remained the predominant source of finance. The same picture repeats for the permanent shops except that for them relatives are no longer an important source of finance and bank loan and trade loan are more readily available. However, the importance of such sources of finance vary widely. For hawkers own capital accounts for 88%, while for temporary shops it is about 75%, and for permanent shops it accounts for about 67% only. However as a percentage of circulating capital only the percentage of trade credit accounts for 12%, 41% and 49% respectively. The bank loan was largely used by the establishment for financing fixed capital or as a form of bank guarantee for supply of merchandise.

Table-16: Distribution of Business according to Monthly Average Sales (US\$)

	Less than	Upto	Upto	Upto	Upto	Upto	Above
	250	500	1000	2500	5000	10000	10,000
Hawkers	23	76	1	-	-	-	-
Temporary	9	24	50	14	3	-	-
Permanent	-	2	13	65	15	4	1

The lowest sales reported by hawkers is around US\$100 a month. This is partly because, he does not hawk every day. He does it at most once a week. It is difficult to compare it with others. However most of the hawkers do not have more than US\$500 sales a month. The data furnished by temporary shops indicate that most of them have sales between 500-1000 US dollars a month. The modal sales for permanent shops seem to be above 1000 and less than 2500 US dollars a month.

Hawkers and temporary shops conduct cash sales only. However hawkers allow credit sales for longstanding customers. 10% of hawkers

admitted to have done so. The temporary shops seem to do less sales on credit. Only 2% of them admitted to have done this occasionally. The permanent shops also carry their business on cash only. However 5% of establishment admitted selling on credit. All three types of cloth merchants carry business on cost plus basis. For merchandise obtained from mills, there as a mark up indicated by manufacturers. For imported cloth, the policy is what the market can bear. For own manufacturers, the price is fixed on the basis of cost and going-sales of comparable cloth.

It was difficult to obtain cost information. Whatever information was obtained from whoever responded provide the following information.

Table-17: Share of cost elements in 100 Taka sales

	Salary & Wages	Rent	Taxes	Utilities	Transport	Profit	Cost of goods
Hawkers	2	-	-	-	1	12	85
Temporary Shops	6	1	-	1	1	9	83
Permanent Shops	7	3	1	1	1	6	81

This information should be taken as an indicative of shares, but in all probability the average would come to be around such proportions. However, the profit on invested capital is said to be around 15-20% by permanent shops and 10-25% for temporary shops. The hawkers could not furnish adequate information about this. But it was estimated from available information that they have 10-20% profit which include their own wages as well.

The customer profile of these shops were attempted. The information guarante provide us with the following picture.

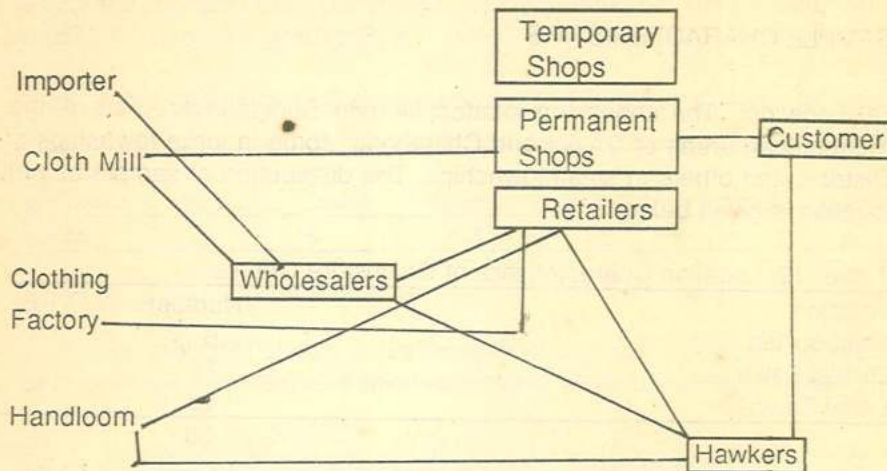
Table-18: Customer Profile

Profession/ socio economic group of customers	(in percentage)					
	Hawkers % of numbers	Temporary Shops %of sales	Permanent Shops %of numbers		% of sales	%of sales
Dailywage earners including Rickshaw pullers	11	9	5	6	1	*
Low income salaried group	39	45	7	6	6	5
Middle income sala- ried group	7	9	31	34	26	35
High income salaried groups	-	-	8	14	18	19
Low income Businessman	18	12	9	4	7	3
Middle income Businessman	13	20	28	30	29	30
High income Businessman	-	-	2	4	4	5
Others	12	5	10	2	9	3

*Not significant.

Before concluding this section, we shall briefly mention the trade channel in a diagram below.

Fig 1: Trade channel



No estimate of share of business is available. A casual empiricism puts the share of hawkers at 10%, that of temporary shops at 40% and of permanent shops at 50% of value.

III.A PRODUCTIVITY ANALYSIS OF A CHAIN RETAIL STORES DEALING IN CLOTH IN BANGLADESH.

Bangladesh does not have the tradition of chain store in retail marketing. The traders have preferred to operate in one (or at best 2-3) locations. For the purpose of our study we selected the retail outlets of Bangladesh Textile Mills Corporation. This all started in 1977 as a measure to ensure fair price at the end point. But soon it was allowed to proliferate and over 100 such shops were established all over Bangladesh. We shall be dealing with a sample of 38 such outlets.

It should be mentioned that these outlets together were not made into an autonomous company. Besides the employees in these shops, there is a coordinating manager in the Head Office and nearby Mill Manager is required to oversee the shop as and when necessary. The shops on requisition are supposed to receive goods directly from the composite mills

on credit which is to be paid before the next requisition is made. Thus their circulating capital needs have been minimised but it has created problems due to non-reconciliation of accounts. The retail prices are fixed by the Corporation.

SAMPLE CHARACTERISTICS

(a) *Location:* The shops are located all over Bangladesh; some in the metropolitan areas of Dhaka and Chittagong; some in large townships of Districts and others in small townships. The distribution of sample as per location is given below.

Table -19: Location Characteristics of Chainstore Outlets

Location	Number
Metropolitan	6
District Town	14
Other Towns	18
	38

(b) *Population and area coverage:*

It is more interesting to see coverage of these shops. For our purpose we have taken the area of township and the population of the township for consideration

Table 20: Coverage of the Chainstore Outlets

Area (sq m)	1-10	10- 50	50+
Number of shops	22	12	4

Population (in 000)	10	10-50	50-100	100-200	200-500	500+
Number of shops	6	12	6	7	3	4

Except for Dhaka city, the corporation has not established more than one shop in any town and this has resulted in wide divergence in terms of area and population coverage. As would be expected, GDP of these areas would vary considerably. No cognignce of this was taken in planning the location of shops.

Ahmad : Productivity of a chain store

(c) Investment in shops

Investment in shops vary considerably. As the shops are located in rented premises, these investment reflects mostly the cost of furnitures and fixtures. The lowest such expenditure recorded for the sample is Us \$100 and highest being US \$6000. The distribution of the sample outlets of BTMC stores are given below.

Table-21: Distribution of Stores according to Fixed Investment

	US\$					
Investment	100-350	350-700	700-1000	1000-1350	1350-2000	2000+
Number	7	16	5	3	4	3

(d) Floor Space:

It is an indicator of size and should normally have relation with volume of business. As rentals vary this relationship is not necessarily linear.

Table-22: Distribution of Shops according to Floor Space

	(Sq. ft.)					
Area	190-300	300-400	400-500	500-700	700-800	800+
Number	18	5	5	6	2	2

It will be seen from the above table that shops are normally very small in size.

(c) Employee:

Number of employees is related to volume of business. There are a minimum of 2 and a maximum of 9 employees in these shops. The distribution of shops by number of employee is given below.

Table-23: Distribution of Shops according to Number of Employee

Number of Employee	2	3	4	5	6-7	8-9
Number of shops	2	7	13	9	5	2

(f) Sales Volume:

The value of sales for 82-83 varied widely from a low around TK.140 thousand to high around TK. 4125 thousand. The distribution of shops by sales volumes are given below.

Table-24: Distribution of Sales according to Annual Value of Sales

(TK. 000)							
Sales value	140-300	300-500	500-750	750-1000	1000-2000	2000-3000	3000+
Number of shops	2	10	12	6	5	2	1

US\$ = 25

High sales are generally recorded in metropolitan areas, and some of the large towns.

(g) Age structure:

The earliest shop was opened in 1977 and we collected information of 82-83. The oldest would be 6 years and youngest one year old. The table below gives the age structure of the sample shops.

Table-25: Distribution of shop according to age

Age in years	1-2	3	4	5	6
Number of Shops	2	4	1	17	12

(h) Volume of Net Profit

The sale centres made profit and losses. The highest amount of loss was about Taka 28.6 thousand, whereas the highest profit recorded for the sample for the year 82-83 was Tk. 184 thousand. The distribution of shops according to net profit is given below.

Table -26: Distribution according to Net Profit (Loss) for 82-83

(TK in 000)									
Amount of Profit/Loss	(-30)-(-10)	(-10)	400	00-10	10-30	30-50	50-75	75-125	125-200
number	6	5	6	13	4	3	-	1	

Ahmad : Productivity of a chain store

It would be seen from the table less than a third of the sample stores made loss that year. The modal profit for that year was around TK.20,000.

(i) Cost of Retailing

Of the sellers 100 taka, a maximum of 12.2 and a minimum of 3.5 was spent on salaries of staff in the sales centres. The distribution of the sales centres as per this criterion is as follows.

Table-27: Distribution of Shops as per Salary Cost Expressed as % of Sales Value

Salary x 100 / Sales	3-4	4-5	5-6	6-7.5	7.5 -10	10-12.5
Number	2	4	8	7	10	7

Rental cost varied from 0.1 of sales value to 2.6. The distribution is given below.

Table-28 : Distribution of Shops as per Rental Cost Expressed as % of Sales Value.

	0.0-0.4	0.4-0.6	0.6-1.0	1.0-1.5	1.5-2.5	2.5+
Sales Number	7	8	9	8	5	1

Transport cost varied from 0.2% of sales value to 3.0% of sales value. The distribution is given below.

Table-29 : Distribution of Shops as per Transport Cost Expressed as % of Sales Value

	0.0-0.4	0.4-0.6	0.6-0.8	0.8-1.0	1.0-2.0	2.0-3.0
Number	9	6	6	3	11	3

Insurance cost varied from 0.1 to 3.4 per cent of sales value. The distribution is given below.

Table-30 : Distribution of Shops as per Insurance Cost/Sales Ratio

	-0.5	0.5-1	1-2	2-3	3+
Number	14	13	8	2	1

Electricity cost varied from 0.05 to 0.3. The distribution is given below.
 Table-31: Distribution of Shops as per Electricity Cost.

	-0.05	0.05-0.1	0.1-0.25	0.25-0.5
Number	16	13	5	3

The administrative cost varied from 0.1 to 2.6 The distribution of shops as per administrative cost is given below.

Table - 32: Distribution of Shops as per Administrative Cost as a percentage of Sales Value.

	--0.3	0--0.5	--0.7	1.0	--1.5	--2.0	--3.0
Number	7	10	7	4	5	3	2

(j) Profit/Loss Situation

The profit as a share of TK. 100 sales varied widely. Ten units incurred loss ranging from -0.5% to -7.4%. Another 28 units earned profit ranging from +0.3 to 2.3%. The distribution of shops as per profit/loss is given below. The distribution of shops as per profit/loss as a percentage of sales value is given below.

Table-33 : Distribution of Shops as per Profit/Loss as a Percentage of Sales Value.

Profit/Loss x 100	(--7.5)	--(--5.0)	(--5.0)-(0.0)	--(+2.5)	--(+5.0)	(+7.5)
Number	5	6	14	11	2	

IV RATIO ANALYSIS

Productivity is a ratio between output and input. Productivity in retail distribution is difficult to measure and there are conceptual disagreement as to the appropriate measure for this. In our study we have combined 'operating efficiency' measures with traditional 'productivity' measures . A list is given below.

1. Sales/Floor Area (in sft.) (in Taka)
2. Operating Profit/Sales (in %)
3. Wages/Sales (in %)
4. Manhour/Sales (in %)
5. Net Profit/Total Assets (in %)
6. Administrative Cost/Sales (in %)
7. Fixed Assets/Sales (in %)
8. Inventory/Sales (in %)

Appendix- 1: Elements of Cost and Profit (Loss) as a Percentage of Sales Values

*	Sales	Salary	Rent	Transport	Insurance	Electricity	Adm.	Other	Profit(Loss)
1.	Su	5.4	0.7	0.2	0.8	*	0.5	0.2	2.9
2.	u	4.7	0.6	0.6	0.5	*	0.4	0.3	2.2
3.	u	10.3	2.4	0.8	1.4	*	1.4	0.1	(-0.8)
4.	Su	6.3	0.9	0.5	0.5	0.1	0.6	*	0.8
5.	u	8.0	0.6	0.5	1.4	*	0.9	0.9	(-0.5)
6.	Su	12.2	0.5	2.7	1.9	*	2.5	0.2	(-6.6)
7.	M	4.4	1.5	0.7	0.7	0.1	0.7	0.4	2.8
8.	u	6.9	0.4	1.5	0.7	0.1	0.3	0.2	3.6
9.	M	7.0	2.6	1.4	0.3	*	0.4	0.7	0.1
10.	M	3.8	0.1	1.6	0.1	0.1	0.3	0.4	4.5
11.	M	5.7	0.7	1.3	0.4	*	0.4	0.8	5.0
12.	u	7.6	*	1.0	0.9	0.1	0.3	0.6	4.8
13.	u	7.2	1.5	0.6	0.7	0.3	0.4	0.4	(-1.6)
14.	u	5.6	*	0.3	*	*	0.4	4.3	0.1
15.	Su	10.0	1.3	1.0	*	0.2	0.7	0.2	2.4
16.	Su	9.5	2.0	0.2	*	0.4	1.2	0.3	(-7.3)
17.	Su	11.0	1.2	0.4	*	*	0.7	0.2	6.5
18.	u	7.0	0.9	*	*	0.1	0.5	1.1	2.0
19.	Su	12.0	0.7	0.7	1.3	0.1	0.5	0.1	0.5
20.	u*	4.8	0.4	0.8	0.6	0.05	0.7	1.6	3.0
21.	u	11.0	1.4	3.0	1.0	*	1.8	0.4	(-2.3)
22.	Su	9.4	0.6	1.5	1.0	0.1	0.2	0.3	3.3
23.	Su	5.1	0.6	0.4	1.0	0.8	0.5	0.9	5.3
24.	u	7.9	1.3	0.4	0.6	0.2	0.9	0.1	(-0.9)
25.	Su	8.8	1.6	2.2	1.2	*	0.9	0.3	(-1.4)
26.	Su	5.5	0.9	1.4	0.8	0.08	1.8	0.1	2.2
27.	Su	8.6	1.3	2.0	2.1	0.2	2.0	0.5	(-5.1)
28.	Su	5.6	0.5	1.1	0.4	0.1	1.0	0.2	2.0
29.	u	5.4	1.8	0.4	0.7	*	0.4	1.5	2.7
30.	Su	8.1	0.9	1.8	1.5	*	0.3	0.2	0.2
31.	Su	11.9	1.4	0.6	0.6	*	1.2	*	(-6.5)
32.	u	6.4	0.4	1.5	0.5	.05	0.8	0.6	0.5
33.	u	9.6	2.4	1.9	3.4	0.2	2.6	0.7	(-6.5)
34.	Su	7.9	0.8	1.7	1.0	0.2	0.2	0.1	2.2
35.	Su	4.7	0.6	0.8	0.3	0.2	1.5	0.1	1.1
36.	Su	5.5	0.6	0.6	1.8	0.1	0.7	0.1	3.7
37.	u	5.0	1.0	6.4	0.5	0.1	0.2	*	3.7
38.	Su	7.5	*	*	2.1	*	1.2	*	1.7
overall	*	6.4	0.9	1.0	0.7	0.8	0.1	*	10.4

Su= Small Town , u=Larger town M= Metropolitan

Sales to floor Area ratio indicates efficiency in utilization of floor space. If the ratio is high (i.e., sales are high in terms of floor space) it means higher turnover or higher sales of high value items. Since the product range is the same for all these shops, it indicates, higher sales volume. A low sales/area ratio would signal a need to cut the size of the store and a high ratio signals the opposite. However, there is no known standard. The highest ratio is 8592.2 and lowest is 230.4. The average of the ratio comes to 2267.0. The distribution of stores as per this ratio is given below.

Table-34 : Distribution of Shops according to Sales/Floor Area (in sq. ft.) Ratio.

Ratio	200-500	500-1000	1000-1500	1500-2000	2000-2500	2500-3000	3000 4000
Number	3	3	8	3	10	2	7

2

A scanning indicated that of the eleven loss making shops, seven have low ratio indicating uneconomic use of floor space.

Net Profit Over Sales indicates how much a shop has earned per unit of sales, measured in monetary unit. Since the basic cost of procurement is the same, profit varies due to variation in other costs and ability to spread some of the fixed costs over larger volume of sales. The ratio varies from (-7.3) to 6.5. The average is about 1.09. The distribution of shops according to this ratio is given below.

Table-35 : Distribution of Shops according to Operating Profit/Sales Ratio (in %)

Ratio	(-7.5)-0.0	0.0-1.0	1.0-2.0	2.0-2.5	2.5-3.0	3.0-5.0	5.0-7.5
Number	11	5	4	5	4	7	2

Wages/Sales ratio is a measure of relationship between labour cost and sales. A lower ratio represents higher level of efficiency in labour cost management and a higher ratio represents the opposite. There exists, as expected, wide variation and the highest in 12.20%. The distribution of the shops as per this ratio is given below.

Table-36 : Distribution of Shops according to Wages/Sales Ratio (in %)

Ratio	3-5	5-7	7-9	9-11	11-13
Number	5	12	11	6	4

The distribution of shops according to Manhour/Sales ratio is given below.

Table-37 : Distribution of shops according to the ratio of Manhour to Tk. 100.00 Sales.

Ratio	0.0-0.5	0.5-1.0	1.0-1.5	1.5-2.0	2.0-2.5	2.5-3.0	3.0+
Number	2	8	15	5	2	3	3

The ratio of Administrative Cost to Sales indicates whether administrative efforts were efficiently used. The lower the value the more efficient is the firm in respect of administration. The ratio varies from 0.181% to 4.695%, the average being 1.472%. The distribution of the shops according to the ratio of Administrative cost to sales (in %) is given below.

Table-38 : Distribution of Shops according to Administrative Cost/Sales Ratio (in %)

Ratio	0.0-0.5	0.5-1.0	1.0-1.5	1.5-2.0	2.0-2.5	2.5-3.0	3.0-3.5	3.5+
Number	3	9	12	8	2	2	1	1

Fixed Assets/Sales ratio indicates the efficiency in utilization of fixed assets vis-a-vis sales. The lower the value the better it is. Higher value indicates possible over investment in fixed assets. The value of this ratio varies from 0.297% to 16.129%, the average being 2.002%. The distribution of shops as per this ratio is given below.

Table-39: Distribution of Shops according to Fixed Assets/Sales Ratio (in %)

Ratio	0.0-1.0	1.0-2.0	2.0-3.0	3.0-4.0	4.0+
Number	16	10	7	3	2

It appears from the distribution that at least in twelve shops having values in the range of 2.0 and above there has been over investment in fixed assets.

Inventory/Sales ratio is used to see as to the sufficiency of inventory accumulation. Over inventory involves cost and insufficient inventory results in loss of sales. Micro level product wise analysis provides a better

picture in this respect. We have calculated average of opening and closing inventory and ratio of inventory to sales was calculated on that basis. The lowest figure is 20.1% and highest is 133.0%. The distribution shows that about 18 shops keep inventory below 50% of sales 9 between 50% and 75%, 8 between 75% to 100% and 3 shops keep inventory over 100% of their sales. Of the eleven losing shops only 2 had less than 50% inventory and 2 had more than 100% inventory. The distribution of shops as per this ratio is given below.

Table-40: Distributon of Shops as per Inventory/Sales ratio (in %)

Ratio	20-50	50-75	75-100	100+
Number	18	9	8	3

Return on investment was calculated on the basis of net profit before tax over fixed plus circulating capital. The ratio varies from (-14.2) to 61.3, the average being 5.4. Since in this business fixed investment is relatively small, the outcome is heavily influenced by circulating capital. The distribution of shops as per their return on investment is given below.

Table-41: Distribution of Shops according to Return on Investment (in %)

Ratio	(-16.0)-0.0	0.0-2.5	2.5-5.0	5.0-10.0	10.0-20.0	20.0+
Number	11	6	5	10	2	4

The distribution show that eleven shops (i.e. about 29% of shops) are incurring loss.

For temporary shops only a small percentage have access to bank loan. Trade loan is important for them as a resource. Relatives at times have supplies part of the required capital. Own capital has however remained the predominant source of finance. The same picture repeats for the permanent shops except that.

V. REGRESSION ANALYSIS

In this section we try to select some variable on a prior basis and test the independent factors influence on the productivity of the sales centres.

For convenience we recapituate the defination of the variables.

Ahmad : Productivity of a chain store

Appendix-2 : Ratio.

Sl. No.	$\frac{S}{Fe}$	$\frac{P}{S} \times 100$	$\frac{W}{S} \times 100$	$\frac{L}{S} \times 100$	$\frac{A}{S} \times 100$	$\frac{I}{S} \times 100$	$\frac{FA}{S} \times 100$	$\frac{P}{C} \times 100$
1.	3443.5	2.9	5.38	1.323	0.779	51.0	3.704	4.2
2.	3723.6	2.2	4.74	1.112	0.838	32.7	1.259	6.7
3.	2038.7	(-0.8)	10.31	1.318	1.645	107.5	2.381	(-0.6)
4.	3617	0.8	6.29	1.464	0.731	27.2	0.967	1.7
5.	2150.3	(-0.5)	8.00	1.174	1.890	42.8	0.749	(-0.5)
6.	1080.2	(-0.5)	12.20	2.725	2.817	78.2	0.964	(-7.0)
7.	2404.5	2.8	4.39	0.726	1.176	38.3	3.802	6.0
8.	2075.0	3.6	6.94	0.993	0.539	57.0	1.290	9.0
9.	3375.0	0.1	7.09	0.416	1.136	94.9	2.950	2.5
10.	8592.4	4.5	3.22	0.963	0.765	39.6	0.717	61.3
11.	9080.0	5.0	5.75	0.991	1.214	53.0	2.801	17.7
12.	1222.2	4.8	7.69	2.364	1.010	61.3	1.271	5.7
13.	1593.1	(-1.6)	7.30	1.332	1.010	52.5	0.297	(-1.8)
14.	2254.4	0.1	5.95	0.752	4.695	32.7	0.887	0.05
15.	1349.0	2.4	10.20	1.548	0.907	78.8	0.959	2.0
16.	815.8	(-7.3)	9.62	2.597	1.520	84.2	2.833	(-18.0)
17.	1227.7	6.5	11.11	1.536	0.948	98.0	2.695	5.9
18.	2080.5	2.0	7.04	1.220	1.621	45.9	0.816	5.4
19.	866.2	0.5	11.90	3.288	1.307	113.6	2.427	0.2
20.	2576.6	3.0	4.81	0.723	2.392	34.1	4.950	5.4
21.	1359.9	(-2.3)	10.99	2.155	2.288	66.7	1.391	(-2.6)
22.	1229.6	3.3	9.35	1.161	0.427	46.5	1.394	41.4
23.	3158.6	5.3	5.15	1.412	1.401	40.3	1.00	21.6
24.	2223.6	(-0.9)	7.87	1.486	1.015	75.3	3.559	(-2.0)
25.	1659.0	(-1.4)	8.77	1.802	1.206	92.3	1.464	(-0.6)
26.	1189.9	2.2	5.58	1.080	1.916	34.8	0.432	4.8
27.	721.0	(-5.1)	8.55	1.333	2.598	43.8	1.289	(-14.2)
28.	1728.8	2.0	5.62	0.861	1.166	20.1	0.972	6.0
29.	1307.9	2.7	5.38	1.121	1.536	22.5	0.898	5.2
30.	2433.6	2.5	8.13	1.215	0.527	91.0	1.052	1.9
31.	2232.5	(-6.5)	11.90	1.923	1.295	56.4	0.850	(-6.6)
32.	230.4	0.5	6.49	7.519	1.718	60.6	16.129	1.0
33.	382.9	(-6.5)	9.71	2.809	3.333	133.0	2.404	(-0.9)
34.	2009.5	2.2	7.94	1.506	0.357	66.2	0.948	3.4
35.	3368.8	1.1	4.69	0.812	1.626	28.0	0.958	5.0
36.	2597.7	3.7	5.49	1.305	0.851	37.8	1.001	14.8
37.	4307.9	3.7	5.05	0.946	0.181	39.0	1.339	12.4
38.	3550.1	1.7	7.52	3.390	1.235	22.0	0.455	7.1

NOTE: S = Value of annual sales.

FI = Floor space (sft.)

FA=Value of fixed assets

P = Net profit

W = Annual wages

C=FA+Circulating capital

L = Manhour

A = Administrative cost

I = Average value of inventory.

O = Own source, R=Loan from relatives T=Trade loan,

B = Bank loan

Investment is defined as the gross fixed asset, it includes premises acquisition cost, furniture, office stationary. We exclude intangible assets like goodwill, trade mark etc.

Area means total floor space of the establishment in square feet.

Employee is measured by the number of all working man in the establishment.

Total factor productivity (TFP) and total labour productivity (TLP) are defined by the following formulas:

$$TFP = \frac{\text{Value added}}{\text{Total manhour} + \left(\frac{\text{depreciation} + \text{leased equipment worked}}{\text{Average hourly wage}} \right)}$$

$$TLP = \frac{\text{Value added}}{\text{Total manhours worked}}$$

THE MODEL

We use the following two model in our analysis. The first model is

$$TFP = B_0 + B_1 A + B_2 E + B_3 I + E$$

Where TFP=Total factor productivity

A =Area in sq. feet

E =Number of employees

I =Total Investment

E =Random error term with mean 0 and σ^2 variance

The second model incorporates the same variables but the form of the equation is nonlienier. the second model is as follows.

$$TFP = P_0 B_1^A B_2^E B_3^I E$$

We develop similar equations with total labour productivity as the dependent variable.

SELECTION OF VARIABLES ON A PRIORI BASIS

Productivity changes over time could be caused by a number of factors. These include skill training, motivation, health, adaptibility and mobility of

the workforce; quantity, age, capacity and type of capital equipment, quality of management; level and advance of technology; scale of production, as well as environmental factors such as availability of natural resources, industrial location in relation to markets, the size of accessible markets and government policies on trade, industry, labour, education etc.

Not all these factors could be defined for quantitative analysis due to data limitation and possible measurement problem.

For our purpose the dependent variable is total factor productivity and total labor productivity. Initially we decided to treat total capital productivity in a similar manner but as we do not get meaningful result for total factor productivity and total labor productivity, we don't try proceed to fit the equation for total capital productivity.

In case of independent variables we have taken three variables, investment, area and the number of employees. We measure investment in taka, area in square feet and the number of employees as the total number of employees working in the sales centre. As these sales centres are not that big, there is no classification of employees as managerial and operating staff.

We know that the production is a function of land, labour, capital and entrepreneurship. In other words $P=f(l,lb,c.e.)$, we have taken the total investment for each sale centre as the capital. We have taken the total area of each of the sales centre as the measure for land. We have taken the number of employees as the measure of input for labour. The sales centres are owned by Bangladesh Textile Mills Corporation (BTMC), a government sector corporation. So, we don't try to include any variable to measure entrepreneurship effect into our analysis. We expect a positive relationship with investment as according to our hypothesis the larger the investment, the larger the productivity keeping all other factors constant as such investment would be prompted by expected or actual profitability So in the analysis we expect a positive sign for the coefficient of investment. Similarly we also expect positive sign of the coefficient for area and labour.

We try both linear and non-linear equation to test our hypothesis. We have tried linear equation because some other study of this sort found meaningful results when binearly was asumed. And we try nonlinear relationship We did as not get any thing meaningful in the linear relationship, Results of the analysis are given in Table-41 and Table-42.

Table - 41: Results of Linear Analysis

	TFP	TLP
Constant	58.85	58.97
Investment	.129x10 ⁻⁴	.203x16 ⁻⁴
partial R ²	.008	.019
Area	.807x10 ⁻²	.808x10 ⁻²
Partial R ²	.007	.007
Labour	-1.164	-1.184
Partial R ²	.004	.004
R ²	.02	.03
F	.298	.709

Table - 42: Result of Non-linear Analysis

	TFP	TLP
Constant	3.1277	3.047
Investment	.0834	.0939
Partial R ²	.04	.05
Area	+.086	.0858
Partial R ²	.01	.01
Labour	-.277	-.205
Partial R ²	.05	.06
R ²	.117	.13
F	2.47	2.16

NO. t statistics and F value is significant

ANALYSIS OF THE RESULT

The result of the two analysis do not lend support to our hypothesis.

None of the statistics are significant at 10% level and the overall variance ratio i.e. the 'F' value is not also significant at 10% level.

In linear analysis, we get positive relationship of productivity with investment with partial coefficient of determination of .008 and .019 for total factor productivity and total labour productivity respectively.

In case of area the sign of the regression coefficient is positive with very low magnitude of partial coefficient of determination .007 for both TFP and TLP. But we get a negative sign of regression coefficient for labour with partial coefficient of determination .004, for both the case R² is .02 and .03 respectively.

In case of non-linear analysis the situation improves a bit but still none of the b+statistics and F value are significant at 10% level.

Here we have same signs as in the case of linear analysis but the partial coefficient of determination increases.

RATIO AS A PREDICTOR OF FINANCIAL HEALTH: A STUDY ON SOME PUBLIC SECTOR ENTERPRISES

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1.1. INTRODUCTION

The English Word ratio comes directly from Latin. This Latin word has many derivatives in the English language; among them are reason, ration, rational and rationale [1;117]. Webster's New Collegiate Dictionary defines ratio as the indicated quotient of two mathematical expressions [2;958]. But in the context of accounting and finance ratio is defined as the relationship between two financial values. It is one of the principal tools for analysis of financial statements. There are two main ways of ratio analysis (i) a trend analysis where the behaviour of the ratio across the time is studied and (ii) a comparative analysis where the performance of a firm in different aspects at a single point of time relative either to other firms in the industry or some other generally accepted standard is studied [3;180].

In assessing financial health of a concern the management or other interested parties becomes interested not in terms of absolute figure but in relative figures. Financial analysts or concerned person in such a context can helpfully take resort to ratio analysis. Ratio analysis may also be used to indicate symptoms of problems. A concern may observe symptoms, such as abnormal liquidity ratio and then in turn locate causes of such situation which may lead to finding out a solution. In this context, for instance, causes may be inadequate cash, excess inventory etc and management in such a situation can take action to raise fund, improve inventory management etc.[4;122-3]. In other words ratio analysis is found helpful to a concern to gain insight into financial health and operating and financial problems of the concerned enterprise.

1.2. STATEMENT OF THE PROBLEM STUDIED

Ratios are used as an indexes, and as indexes, they are used to make qualitative judgements about the financial health, performance and operations of a firm. In recent years a number of studies found that ratios are a better measure of production of events. The event chosen for prediction were mainly concerned with the failure of the firm, non compliance of loan agreement etc. Beaver in a comparative study of failed

and non-failed firms observed that the mean value of failed and non-failed firms differ significantly [5]. David Ewert, Marc P. Blum, Craig Johnson, Robert Administer, Edward B. Deakin, Michel Margin, Edward Altman, D.L. Chesser and many other researchers examined ratio in the context of the predictive value and found that ratios have capability to predict financial health of a concern [6;6-22]. Against the background of such studies, relevant to predictive capacity of ratios, it can be assumed that the ratios, carefully selected in the context of judging financial strength of a concern, can predict their health as good, near good, near bad, bad etc. Kaveri further pointed out that there is a further scope for research on predictive value of ratios in the context of their indication regarding financial health in terms of good, irregular and sick firm.

Against this background and attempt has been made in this study to find out whether ratios can predict financial health of public sector industrial enterprise in Bangladesh, and if so, to what extent such prediction is strong and reliable. In fact this is a preliminary attempt within limited scope which, however, can lead to a broader study.

1.3 OBJECTIVES OF THE STUDY

The study sets the following objectives taking into consideration the research problem:-

- i) To find out various ratios of the sample enterprises relevant to liquidity, solvency, turnover and profitability.
- ii) To evaluate how well financial ratios can predict financial health of the concerns.

1.4 METHODOLOGY

The study first established the methodology for the selection of the sample units. In this connection it was found that collection of data will be easier from public sector enterprises. As such enterprises belonging to one sector corporation i.e. Bangladesh Chemical Industries Corporation was selected as sample Corporation taking into consideration the availability of data. In such a context data from 23 enterprises working under this Corporation were collected for the years 1978-79 to 1983-84. In this connection it is to be mentioned that in 1978-79, the number of enterprises under the Corporation were 29 and in 1983-84 this number came down to 23 because in the meantime i.e. from 1978-79 till 1983-84 some enterprise were disinvested and some enterprises were newly established. Hence, those enterprises which were continuously working

from 1978-79 to 1983-84 under this Corporation were selected as initial samples. Thereafter the enterprises were classified into three groups, viz.;

- a) Profitable enterprises showing profit throughout the study period,
- b) Lossing enterprises—showing loss throughout the study period,
- c) Irregular/Mixed enterprises—showing profit in some years and less in some years of the study period.

From this three groups, 3 enterprises from each group were ultimately selected at random as sample enterprises for the purpose of this study.

The study is a desk research based on secondary data. For this purpose Balance Sheets and Profit and Loss Accounts of the samples were collected from BCIC head Office. Annual Reports of BCIC for the years 1978-79 to 1983-84 were also collected for cross check of data incorporated in the Balance Sheets and Profit and Loss Accounts of the sample enterprises and BCIC Annual Reports.

In the next stage the ratios to be selected to evaluate the predictive value of financial health of the concern warranted our attention. For this purpose an extensive study over the existing literature on this topic was made. It was ascertained that the following ratios were found significant in the context of predictive value relevant to financial health in different studies using sophisticated statistical techniques [7].

- a) Working capital/Total assets.
- b) Retained earnings/ Total assets.
- c) Earning before interest and Taxes/ Total assets.
- d) Market value of equity/Book value of total debt,
- e) Sales/Total assets.

Besides these five ratios we also computed the following ratios which were found to have statistical significance by Kaveri [6;126].

- a) Current ratio.
- b) Stock turnover ratio.
- c) Current asset to Net sales.
- d) Net profit to total capital employed.
- e) Net worth to outside liability.

Further quick ratio and debt-equity ratio were also computed which financial analysts found to have significance too [1;119].

Necessary data essential for the computation of the above 12 ratios were collected from the Balance Sheets and Profit and Loss Accounts which finally lead to the computation of ratios. The implications of these ratios relevant to predictive value directed towards the state of the financial health of the sample enterprises are now examined below.

2. FINDINGS AND THEIR ANALYSIS

Several studies found to have applied a number of techniques to find out the ability of the ratios in the classification of observations i.e. sample enterprise. Among them comparative mean values, Dichotomous test, Multiple Discriminant Analysis are widely used method. In fact the Multiple Discriminant Analysis is improved one which is based on Multivariate model and overcomes the limitations of the traditional techniques like mean value analysis and dichotomous test. Following is an attempt to evaluate the predictive values of ratios vis-a-vis financial health of the samples based on the Multiple Discriminant Analysis.

A) THE MULTIPLE DISCRIMINANT ANALYSIS

This model was developed by Professor Altman. He considered two types of enterprises viz, bankrupt and non-bankrupt. Initially 22 ratios were considered out of which 5 ratios, found statistically significant, were incorporated in the model. The individual ratios were transferred into a single discriminant score or Z value with the help of the discriminant function in the form:

$$Z = V_1X_1 + V_2X_2 + \dots + V_nX_n, \text{ where, } V_1, V_2, \dots, V_n$$

are the discriminant co-efficients and X_1, X_2, \dots, X_n are the independent variable i.e. ratios. The final discriminant functions developed in these line was:-

$$Z = 0.012X_1 + 0.014X_2 + 0.003X_3 + 0.006X_4 + 0.999X_5$$

Where X_1 : Working capital/total asset.

X_2 : Retained earnings/total assets.

X_3 : Earnings before interest and taxes/total assets.

X_4 : Market value of equity/book value of total debt.

X_5 : Sales/total assets.

Z: Overall index.

Altman concluded that firm with Z score above 2.90 were non-bankrupt while those below Z score of 1.81 were bankrupt. He further pointed out that a Z score of 2.675 was the cut off point. This technique was used by Kaveri in the context of Indian small scale enterprises to find out good, irregular and sick enterprises. In our present study we shall apply the model to find out first the Z score value and on that basis the enterprises will be classified as good, sick and mixed/irregular. Then the mean values of different ratios will be examined to see how far the ratios correspond to the indication of financial health of the enterprises as revealed through Z score. In this connection, it needs to be mentioned that while Z score as determined by Altman to predict bankrupt and non-bankrupt position of the firms in the American context cannot be logically taken as standard in the context of Bangladesh specially for public sector enterprises, yet it is taken as a guideline. We shall not classify the enterprises as bankrupt or non-bankrupt according to cut off point of Z values as fixed by Altman, that is not the intention of this paper too. It is our intention to see whether the score of five different ratios transformed into single discriminant score Z value differ according to profitable, lossing and irregular/mixed performance. Following table shows the picture in this regard.

Table -I: Z Score of Sample Enterprises.

Samples	Profitable			Lossing			Irregular/Mixed		
	1	2	3	4	5	6	7	8	9
Z score	.423	1.261	1.550	.128	.344	.345	.681	.671	.596

(Based on Appendix-3. For detail see Appendix-3)

It appears from the above table that Z score of profitable enterprises are higher than lossing samples; the Z scores of Irregular/mixed enterprises are higher than lossing firms. Sample-I, however, shows a bit different situation among its group as its Z score though higher than lossing concerns yet lower than irregular firms. However, there is no denying in the fact that ratios contribution to Z value differ according to profitability position and financial health and that these five ratios have strong predictive value. Moreover, a look into the ratios shown in the Appendix-1 further substantiate the idea. For it is seen that the mean value of different ratios used to find out Z score are higher for profitable enterprises than from lossing ones and that the value of ratios of irregular samples and lossing samples also show the same trend. In other words it can be said that the ratios used to find out Z score have predictive capacity as to financial health of the enterprises to a significant extent.

B) DU PONT CHART ANALYSIS

Du Pont company of U.S.A. pioneered this system of financial analysis based on asset turnover ratio and profit margin ratio and this system is found widely recognised as an useful tool of financial analysis [8;127].

At the apex of the chart is the return on total asset i.e. net income to total asset ratio which is the product of the net profit margin ratio and the total asset turnover ratio [4;136](See Appendix-4). The right hand side of the chart from down to upward shows how asset turnover ratio comes into a single figure and the left hand side shows the details of net profit margin in the same way. An examination of the right hand side indicate status of asset use and suggest the scope for enhancing the efficiency of asset utilisation. Similarly the left hand side of the chart indicates areas where cost efficiency can be achieved to improve net profit margin. This technique can be used to find out differences in asset use and net profit margin between firms and as such this study has used the techniques too to see how far the Du Pont chart and relevant ratios can indicate profitable, lossing and mixed enterprises with accuracy. The result of the application of this techniques with reference to sample enterprises is now described below:-

Following chart shows the result of Du Pont chart analysis.

Table-2: Results of Du Pont Chart Analysis

	Profitable enterprises			Lossing enterprises			Irregular/Mixed enterprises		
	1	2	3	4	5	6	7	8	9
Return on Total asset	.11	.10	.21	(.06)	(.06)	(.08)	(.01)	(.02)	(.21)
Total asset turnover Ratio	.40	1.25	1.53	.12	.34	.35	.68	.67	.67
Net profit Margin ratio	.28	.08	.14	(.47)	(.17)	(.23)	(.016)	(.024)	(.32)

The above chart clearly indicates that Return on Total asset is higher for profitable enterprises than lossing ones and irregular enterprises. Similarly the difference between lossing and irregular enterprises is clearly indicated in the chart. Likewise the total assets turn over ratio and net profit margin ratio clearly indicate the difference in asset utilisation and cost-profit efficiency among profitable, lossing and irregular concerns. That is, the predictive capacity of such an analysis and relevant ratios is quite an established fact.

It may not be out of place to note that the Du Pont chart analysis reveal that left hand side of the lossing concerns are comparatively weak and irregular/mixed concerns. Further, the chart reveals inter-group and intragroup variation in the left and right hand result. Such an indication may be of great use to management for taking appropriate action.

C) MEAN DIFFERENCE

As stated earlier, we computed 12 ratios for the purpose of testing predictive value of ratios. Among these, five ratios have been tested through the Multiple Discriminant Analysis. Now we shall test rest of the seven ratios through mean differences amongst samples. Though mean difference has some limitations yet it can show roughly the ability of ratios as to their predictitive value. Following table shows the mean values of ratios of the sample enterprises for the study period.

Table-3: Mean values of Ratios

Samples Ratios	Profitable samples			Lossing Samples			Irregular/Mixed.		
	1	2	3	4	5	6	7	8	9
1. Current Ratio	2.36	1.33	1.26	.64	.54	.57	1.45	1.21	.24
2. Quick Ratio	1.77	.51	.57	.48	.12	.31	.58	.57	.09
3. Stock Turnover	7.14	2.38	4.26	5.08	2.57	5.45	3.74	3.34	3.68
4. Current Assets/ Net Sales	2.19	.72	.49	1.93	.99	1.02	1.08	.99	.76
5. Net profit/ Total Capital Employed	.15	.32	.53	(0.09)	(.13)	(.2)	(.02)	(.03)	.36
6. Net Worth/ Outside Liability	.47	.36	.60	(.04)	(.13)	(0.08)	.23	.09	(.76)
7. Equity/Debt.	.91	4.19	6.00	(.06)	(.20)	(.16)	.58	.22	(1.59)

(Based on Appendix 2).

(Note: Figures in the parentheses indicate negative value)

The table shows that current ratio and quick ratio of the profitable Enterprises are better than lossing and irregular enterprises and that irregular enterprises shows better liquidity position on the average than lossing concerns (except sample 9) which means these two ratios predicts well the liquidity position of the sample enterprises. Stock turnover ratio, however, shows different picture. For example it is seen that turnover ratio of sample 2 belongiong to profitable group is comparatively lower than sample-5 and 6 which belong to lossing group. A review of Appendix-2

further reveals uneven trend of this ratio among different years within a sample. In interpreting turnover ratio, it is important to note that high turnover ratio always do not indicate profitable operation or efficient management. [8;123]. Turnover ratio much depend on nature of merchandise nature of Industry etc. [20]. However, it is seen that this ratio in the context of sample enterprises do not predict the operational efficiency, liquidity and profitability of the concern. Same is the position, more or less with current assets to net sales. On the other hand net profit to total capital employed shows that the ratios of profitable enterprises are better compared to other two groups viz, lossing and irregular/mixed enterprises. Similarly the position of irregular concerns are better than lossing concerns. The ratio of net worth to outside liability shows that the lossing concerns have negative network and depend heavily on outside debt. The position of profitable enterprises and mixed ones (except sample 9) is better in this regard. The same is the position of debt equity ratio. In this connection it is to be mentioned that the latter two ratios were computed to find out capital structure existing at present and their impact on financial health of the concerns. It is thus seen that capital struture as revealed through these two ratios differ significantly among profitable lossing and mixed enterprises. It is thus seen that according to mean difference analysis current ratio, quick ratio and net profit to capital employed ratio can successfully predict financial health of the concern. On the other hand, the stock turn over ratio and current asset to net sales ratio found not to any definite pattern.

3. CONCLUSION

Ratio analysis have a number of limitations. A person analysis ratio must have clear awareness of the test he is applying, its limitations and characteristics, the reasons he is applying the test etc. In fact window dressing of balance sheet, the interim character of the reports i.e. financial statement, valuation aspect of the assets, limitations of conventional accounting techniques reflected in financial statements etc. adversely affect ratio values and may lead to misinterpretation. However, keeping all these limitations in mind, we can conclude that ratios have predictive value and it can to a large extent predict the financial health of a concern. Financial analysis, Bankers, Mangement and other interested parties can use ratio to predict the financial health, borrowing capacity, performance etc. of the enterprises. But what is essential is to select statistically significant ratios and an periodical evaluation of the same as to whether their predictive values remain more or less same or that some factors affected any of the ratios in their predictive character.

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Appendix-I : Profit & Loss Position of the Sample Enterprises

(In Lac Taka)

Years Sample	978-79	79-80	80-81	81-82	82-83	83-84
1	1251	1327	639	1831	3735	2442
2	143	130	56	103	71	68
3	45	8	56	38	113	198
4	(580)	(505)	(856)	(747)	(140)	(280)
5	(177)	(229)	(341)	(685)	(331)	(193)
6	(192)	(260)	(237)	(322)	(395)	(400)
7	66	(122)	(213)	(134)	67	42
8	(18)	(19)	(55)	(52)	33	(524)
9	(39)	50	(75)	(15)	28	(22)

Source: Annual Accounts of the sample enterprises for the relevant years.

Appendix-2: Ratios as Computed for the Samples Enterprises for the Years 1978-79 to 83-84.

Ratios		1978-79	79-80	80-81	81-82	82-83	83-84	Average
Current Ratio	S-1	2.83	2.65	2.62	2.86	2.52	1.67	2.36
	S-2	1.36	1.41	1.40	1.71	1.25	1.71	1.25
	S-3	.75	.94	1.33	1.45	.44	1.51	1.26
Quick Ratio	1	2.13	1.90	2.06	2.14	1.22	1.28	1.77
	2	.91	.97	.23	.65	.50	.27	.51
	3	.21	.11	.18	.75	.79	.80	.57
Stock-turn over Ratio	1	6.31	3.40	14.60	8.80	6.85	7.80	7.14
	2	3.96	4.05	1.88	3.89	2.46	1.57	2.38
	3	3.28	2.76	2.36	6.89	6.29	4.98	4.26
Current Asset/ Net Sales	1	1.88	2.23	1.98	2.50	1.91	2.60	2.19
	2	.80	.74	.71	.43	.77	1.15	.72
	3	.56	.67	.55	.51	.35	.52	.49
Net Profit/ Total Capital Employed	1	.14	.14	.06	.15	.19	.18	.15
	2	.65	.48	.18	.31	.22	.21	.32
	3	.61	.10	.43	.23	.61	.84	.53
Net worth/out Side Liabilities	1	.11	.27	.33	.69	.75	.78	.47
	2	.42	.40	.37	.72	.29	.25	.36
	3	.40	.45	.60	.65	.70	.69	.60
Equity/Debt.	1	.15	.42	.57	1.44	1.72	1.86	.91
	2	6.37	2.80	2.73	4.42	5.98	6.29	4.19
	3		9.63	1.80	3.86	7.76	11.10	6.00
Working Capital/Total Asset	1	.44	.48	.52	.58	.49	.33	.47
	2	.25	.25	.25	.36	.15	.15	.18
	3	(.17)	(.04)	.19	.25	.23	.28	.16
Retained Earning/ Total Asset	1	.10	.21	.25	.18	.23	.25	.21
	1	.31	.29	.27	.43	.21	.05	.22
	3	.07	.09	.19	.25	.27	.12	.20
Net profit before Tax & Interest/ Total Asset.	1	.10	.10	.04	.11	.19	.12	.11
	2	.22	.18	.07	.17	.05	.04	.11
	3	.24	.05	.33	.18	.48	.65	.28
Market Value of Equity/Total Book Value of Debt.	1	.82	1.86	1.73	2.01	2.39	1.77	1.92
	2	.45	.78	.71	.66	.50	.50	.60
	3	1.11	1.21	1.11	1.24	1.36	1.14	1.20
Sales/Total asset.	S-1	.36	.36	.49	.42	.42	.36	.40
	S-2	1.18	1.17	1.25	2.02	1.18	1.05	1.25
	S-3	.96	1.02	1.39	1.57	2.21	1.59	1.53
Current Ratio	S-4	.67	.72	.66	.63	.63	.60	.64
	S-5	.72	.68	.59	.67	.58	.60	.54
	S-6	.62	.47	.55	.48	.65	.69	.57
Quick Ratio	4	.50	.51	.50	.35	.43	.38	.48
	5	.11	.13	.10	.10	.14	.12	.12
	6	.42	.32	.23	.21	.44	.26	.31

Mahmood, Battacharaya : Public Sector Enterprises

Appendix- 2 (Continued)

Ratios		1978-79	79-80	80-81	81-82	82-83	83-84	Average
Stock-turn over Ratio	4	14.90	11.89	10.32	3.05	3.83	4.71	5.08
	5	1.51	3.95	3.57	2.95	4.16	1.65	2.57
	6	5.92	8.50	3.17	4.30	6.87	7.37	5.45
Current Asset/ Net Sales	4	1.89	2.00	1.92	2.57	1.66	1.72	1.93
	5	1.12	.92	.91	.98	.83	1.19	.99
	6	1.26	.75	1.26	.93	1.61	.67	1.02
Net Profit/ Total Capital Employed	4	(.08)	(.07)	(.13)	(.22)	(.03)	(.05)	(.09)
	5	(.15)	(.23)	(.38)	(.44)	(.07)	(.03)	(.13)
	6							
Net Worth/Out side Liabilities	4	(.12)	(.16)	(.121)	.21	.15	.11	(.04)
	5	(.20)	(.16)	(.20)	(.17)	(.13)	.04	(.13)
	6	(.13)	(.21)	(.25)	(.16)	(.22)	(.28)	(.20)
Equity/Debt	4	(.14)	(.20)	(.29)	.62	.30	.22	.06
	5	(.40)	(.38)	(.51)	(.34)	(.20)	.06	(.20)
	6	(.39)	(.51)	(.21)	.20	.14	.27	(.16)
Workiny Capital/ Total Asset	4	(.07)	(.07)	(.11)	(.21)	(.16)	(.17)	(.12)
	5	(.20)	(.23)	(.31)	(.21)	(.20)	(.17)	(.20)
	6	(.20)	(.29)	(.32)	(.30)	(.28)	(.19)	(.26)
Rigetained Earning / Total Asset	4	(.14)	(.19)	(.26)	(.17)	(.14)	(.18)	(.18)
	5	(.39)	(.32)	(.38)	(.72)	(.48)	(.15)	(.36)
	6	(.30)	(.46)	(.53)	.14	.28	.26	(.31)
Net Profit before Tax and Interest/ Total Asset	4	(.05)	(.04)	(.07)	(.12)	(.02)	(.03)	(.05)
	5	(.05)	(.07)	(.09)	(.18)	(.05)	(.02)	(.06)
	6	(.06)	(.09)	(.07)	(.06)	(.10)	(.11)	(.09)
Market Value of Eguity/ Total Book Vaue of Debt	4	1.39	2.23	2.00	2.71	2.80	2.29	2.35
	5	.77	.43	.30	.39	.08	1.56	.59
	6	.80	.68	.72	1.29	.71	.89	.92
Sales/Total Asset	S-4	.07	.09	.12	.14	.16	.15	.12
	s-5	.42	.51	.50	.43	.34	.21	.35
	s-6	.26	.35	.31	.30	.31	.62	.35
Current Ratio	S-7	1.29	1.92	1.55	1.55	1.34	1.27	1.45
	S-8	1.20	1.14	1.13	1.19	1.39	1.10	1.21
	S-9	.26	.23	.18	.32	.18	.24	.24
Quick Ratio	7	.72	.80	.68	.52	.40	.56	.58
	8	.62	.56	.57	.68	.54	.47	.57
	9	.16	.08	.09	.04	.08	.13	.09
Stock-turn over Ratio	7	3.93	3.05	4.45	2.61	2.53	8.16	3.74
	8	3.57	3.37	4.46	5.68	2.04	3.66	3.34
	9	7.77	4.25	5.58	.95	6.17	4.06	3.68
Current Asset Net Sals	7	1.31	1.22	1.22	1.24	1.28	.66	1.08
	8	1.16	.97	.92	.87	1.16	.90	.99
	9	.58	.77	.95	.65	.55	.58	.76
Net Profit Total Capital Employed	7	(.03)	(.04)	(.07)	(.04)	.02	.01	(.02)
	8	(.02)	(.02)	(.04)	(.02)	.01	(.08)	(.03)
	9	1.95	(.83)	(.67)	.12	.40	(.15)	.36

Appendix 2 (Continued)

Ratios		1978-79	79-80	80-81	81-82	82-83	83-84	Average
Net worth/	7	.41	.36	.23	.16	.14	.24	.23
Outside	8	.04	.02	.01	.20	.14	.08	.09
Liabilities	9	(.65)	(.72)	(.79)	(.74)	(.83)	(.80)	(.76)
Equity/ Debt	7	1.75	.76	.58	.36	.35	.58	.58
	8	.15	.10	.02	.52	.30	.13	.22
	9	(1.12)	(1.33)	(1.53)	(1.60)	(2.00)	(1.83)	(1.59)
Working Capital/	7	.16	.37	.29	.28	.20	.13	.23
Total Asset	8	.12	.10	.10	.11	.21	.03	.11
	9	(.89)	(1.25)	(1.89)	(1.44)	(2.73)	(1.99)	(1.66)
Retained Ear-	7	.03	(.08)	(.11)	(.11)	(.08)	(.07)	(.07)
ning/Total	8	(.07)	(.08)	(.10)	(.07)	(.05)	(.08)	(.07)
Asset	9	(2.23)	(2.57)	(4.18)	(3.13)	(3.94)	(2.78)	(3.07)
Net profit	7	(.01)	(.03)	(.04)	(.02)	.01	.01	(.01)
before Taxes	8	(.00)	(.01)	(.01)	(.00)	.00	.05	(.02)
& interest/								
Total Asset.	9	(.38)	.52	(.89)	(.13)	(.95)	.25	(.22)
Market value	7	1.07	.88	.55	.52	.46	.43	.93
of Equity/	8	.36	.30	.25	.62	.38	.16	.33
Total Book Value	9	(.18)	(.37)	(.55)	(.56)	(.72)	(.68)	(.55)
of Debts								
Sales/Total	S-7	.53	.64	.67	.64	.61	.90	.68
Asset	S-8	.62	.88	.91	.80	.66	.46	.67
	S-9	.55	.49	.45	.44	1.12	1.05	.67

Source: Annual Accounts of the sample enterprises

Note: Market value of equity refers to Stock market price. But as the equity shares of sample public enterprises are not subject to deal in stock exchange, market value of equity has been determined with reference to intrinsic value of shares. While computing intrinsic value, the market value of fixed asset has been considered three times higher than book value as has been shown by Dr. Md. Jahirul Hoque in his thesis titled "Financial Planning and Control in Public sector Industries in Bangladesh.

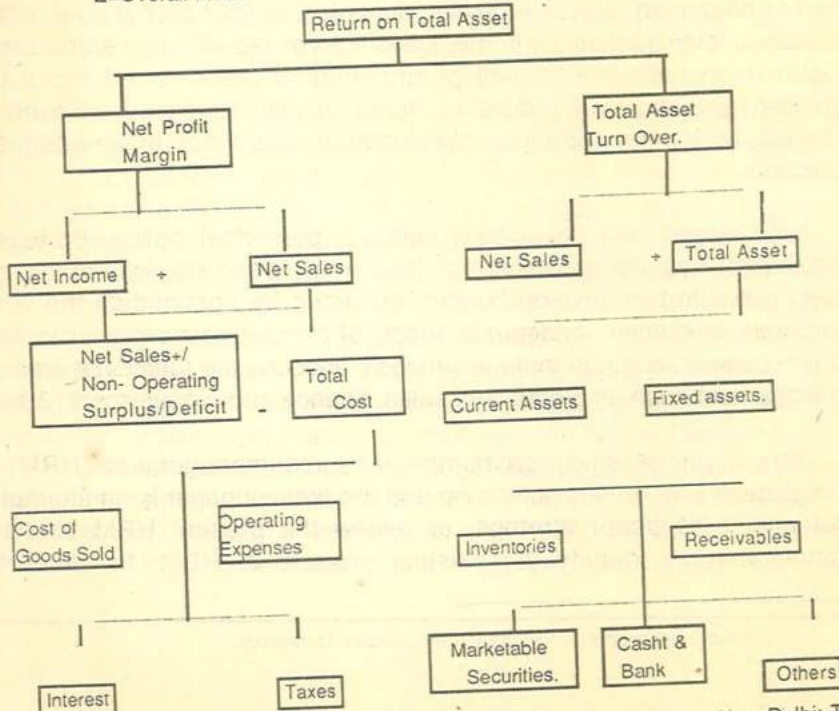
[Note: Figures in the bracket indicate negative value].

Appendix-3: Professor Altman's Equation Applied to Samples.

Average "Z" Scores (1978-79 to 1983-84)						
Z=Equation	0.012x1	0.014x2	0.033x3	0.006 x4	0.999x5	= Z
Samples						
Profitable Samples						
S-1	.00564+.00294+.00363+.01155+.39996					.423
S-2	.00216+.00308+.00363+.0036+1.2487					1.261
S-3	.00192+.0028+.00924+.0072+1.5284					1.550
Loosing Samples:						
S-4	(.00144)+ (.00252)+(.00165)+ .0141+.11988					.128
S-5	(.0024)+(.00504)+(.00198)+.00354+.34965					.344
S-6	(.00312)+ (.00434)+ (.00264)+ .00552+.3496					.345
Mixed Performance Samples:						
S-7	.00276+ (.00112)+ (.00033)+ .00558 +.67932					.681
S-8	.0015+ (.00098)+(.00066)+ .00198+.66933					.671
S-9	(.01992)+ (.04299)+ (.00726)+ (.0033)+.66933					.596

Note: X_1 = Working Capital/Total Assets
 X_2 = Retained Earnings/Total Assets
 X_3 = Retained earnings before interest and taxes/Total assets
 X_4 = Market Value of Equity/Book value of total debts
 X_5 = Sales/Total assets.
 Z=Overall index.

Appendix-4: Du Pont C hart.



Source: Prashanna Chandra, Financial Management: Theory and Practice, New Delhi: Tata Mc grew-Hill Publishing Company Limited, 1984, P. 128.

HUMAN RESOURCES MANAGEMENT IN BANGLADESH

KHONDOKER BAZLUL HUQ*

1. INTRODUCTION

Ordinarily it is believed that economic development is basically the function of material resources and is a matter of savings, investment and capital formation. But now-a-days it is being increasingly recognised that the crucial factor of development is not material resources, but what matters most in economic development is human resources. It has been observed that the successful implementation of development policy or programmes is more the function of human skill and motivation. Referring to the underdevelopment of third world countries Mahbubul Haq, a renowned Pakistani economist mentioned seven 'sins' or 'wrongs' responsible for such a state of affairs. One of the seven 'sins' or 'wrongs' according to Haq is general neglect of human resources [1;22]. In Bangladesh, there is also a strong feeling that here human resources are very badly managed both at the national and enterprise level. In fact, there is no human resource development plan, at the national level. At the enterprise level particularly in the public enterprises although some sort of human resource development programmes is much talked about but effective planning is yet to develop. At the private enterprise level even the concept of human resource development could not draw adequate attention.

What exists may be at best called a personnel policy. Professor Habibullah has rightly observed, "there has been no systematic and sustained effort to develop human resources for husbanding the scarce corporate resources. Inadequate supply of competent manpower to plan, direct, control and coordinate is seriously affecting the functional areas of management such as production, sales, finance and procurement [2;185].

Thus a general study on human resource management (HRM) in Bangladesh is of great significance and the present paper is an attempt to this end. This paper attempts, to review the present HRM scene in Bangladesh, to identify the existing practices of HRM, to unveil the

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limitations thereof and finally to make some recommendations to improve HRM in Bangladesh.

II. HUMAN RESOURCE MANAGEMENT (HRM) DEFINED

Human resource generally refers to human population but all human beings are not or may not be included as human resource. Human resource is manpower which, in the words of Werts, "is the managerial, scientific, engineering, technical traits and other skills and are employed in creating, designing and developing organisation, managing and operating productive and service enterprises and institutions [3;50]. While defining fixed capital Adam Smith has included the acquired and useful abilities of all the inhabitants or members of the the society [4;263-6].

By now it has been established that human resource is as an economic resource just as material, equipment, power and money and its development is a sine qua non for overall development of the society. More developed human resources do not however automatically ensure better economic development. For desired economic development it is necessary to have organizations and institutions which characterize a modern society. Investment in man will not promote continuous economic growth unless it is accompanied by the investment of physical capital in productive enterprises [5; 14].

Thus human resource is important but what is perhaps more important is management of this resource. But human resource management (HRM) is not an easy area to go into as it deals with human beings involving many tasks and activities. Precisely HRM is concerned with the people aspect of an organisation. An organisation is an amalgam of a number of persons, within a deliniable boundary, whose actions and activities are consciously coordinated and directed to achieve predetermined goals. Management enables members of an organisation to undertake and complete their respective assignments. It broadly includes such activities as planning, organising, resource assembling, supervising, and controlling. All these activities are geared toward the attainment of organisational objectives. Human resource management is, thus, "a process consisting of four functions viz, acquisition, development, motivation and maintenance of human resources [6;11]. In other words human resource management functions

include such activities as procuring people, accommodating them, preparing them, utilizing them, activating them and retaining them.

III. HUMAN RESOURCES SCENARIO IN BANGLADESH

Bangladesh suffers from over population and a very high rate of unemployment. Human resource as a whole is said to be underdeveloped in Bangladesh. It is however interesting that in Bangladesh human resources is not only under-used but also misused.

The study of the job markets reveals that while a significant proportion of educated mass do not find job, but appropriate personnel for specific jobs are scarce to find. It may be relevant to mention here that export of skilled manpower in recent years has resulted in shortage of skilled personnel in a number of economic sectors. The frequency of cases where people trained up in one area but employed entirely in different areas is not less [7;172]. There also exists marked deficiencies in quality and imbalances in various categories of working people. The situation may partly be assessed by the following observation of the Planning Commission. While there is no acute shortage of technically qualified personnel in the country, there are no jobs in the labour market for nearly three quarters of a million high school and college graduates. Over one third of the country's twenty nine million active labour force is unemployed of which 88 P. C. live in the rural areas [8; Vii, 2-3]. According to another estimate in 1982-83 out of 32.77 million active labour force of the country, about 12.26 million are unemployed and of 20.51 million employed labour force 13.70 million (66.80 P. C.) are in agriculture, 2.35 million (11.46 P. C.) are in industrial sector and 4.46 million (21.70 P.C) are in service sector [9; 190-1].

Bangladesh is one of the poorest country in the world. Her economy is predominantly agrarian; although she has formed a nucleus of heavy industries through the establishment of industrial units like steel mills, petrochemical, machine tools and fertilizer factory.

The region now comprises Bangladesh in historically poor in skilled and competent personnel. Centuries of colonial rule did not in its own interest encourage the growth of a significant industrial or commercial base in the country. Most of the commerce and industry was in the hands of foreigners particularly Britishers. The creation of Pakistan in 1947 did not make any significant change in the ownership and

management positions of the Bengalee in trade, commerce and industry of the country. Most of the trade, commerce and industry remained in the hands of the West Pakistanis (Non-Bengalees) who for reasons very much understandable were not willing to develop indigenous talent. Independence of the country opened a genuine hope for the development of trade, commerce and industry in the country. This made it essential to develop skilled manpower in the country. But there was an acute scarcity of both skilled labour and managerial personnel. The problem was further intensified by the massive outflow of the Non-Bengalee managerial personnel immediately after liberation.

The overall situation regarding management vacuum in the country has been studied by both local and international experts. As observed by experts, a substantial number of persons carrying out management roles in Bangladesh were untrained in any formal sense [10; 133]. In the area of formal education the picture was however not that frustrating. According to an estimate in 1974, some 10,000 working persons in the nationalised corporations alone needed some formal management training [11; 2]. A sample survey of 464 senior and mid level corporate managers working in 705 industrial corporations and enterprises operating in the country, suggested that many managers in industrial and other sectors suffer from inadequate preparation for the managerial position they now hold [12; 360]. The 1976-77 BMDC- ILO assisted survey on management training needs estimated that industrial enterprises in the public sector alone employed over 16,000 management personnel of whom 86% have had not post experience training.

It is pertinent to mention here about a study on motivation mix. It has been observed that Bangladesh suffers from the shortage of competent managerial manpower. The study revealed that this incompetence was more due to the absence of training than due to the absence of formal education. In spite of the fact that in Bangladesh present literacy rate is awfully low and that the higher education is also very much limited, the academic background of our managers was not very poor. It seems that there is no under matric (S. S. C.) occupying any upper management position. The data collected in this study show that 36.37 per cent of the upper managerial people are with either matriculation, senior cambridge or other undergraduate background, 37.88 per cent have a graduation degree such as B. Sc. B. Com, and B. A., and Master degree such as M. A. M, Sc., and M. Com. from the local universities and

and 7.57 per cent of the upper managerial people have degree from foreign universities, [13;12].

Futher, in another study conducted by BMDC in 1978 it has been revealed that there were about 23,236 managerial personnel currently employed in the public sector enterprises who required to be trained [14; 86]. These managers have been classified into four groups (Grades). This may be seen below.

Managers	Group	i	1493
Managers	Group	ii	2614
Managers	Group	iii	6298
Managers	Group	iv	12831
	<hr/>		
	Total		23236

Training needs were assessed in three important areas e.g. (i) training in managerial functions, (II) training in managerial skills, and (III) training in managerial techniques. As estimated by the study, 60.9 per cent of the total number of managers needed to be trained in different functional areas of management, 20.2 per cent in management skills and 18.8 per cent in management techniques. It has also been revealed that 86 per cent of those employed in state owned enterprises had no post experience training and only 1.5 per cent had professional degrees.

Further, coming to non managerial positions the picture is more or less the same. In some cases the situation is still bad. In a recent study on wages and productivity of industrial workers engaged in the large scale industries it had been revealed that more than 90 per cent of the workers did not have any training for the jobs that they were assigned with.

IV. EXISTING HRM PRACTICES IN BANGLADESH AND CONSTRAINTS THEREOF

It appears from various documents of the Government that although the Government of Bangladesh has a poor perception about the role of

HRM in the country's development process, but she is not totally unconcerned about this issue. There are specific indications that our Government has taken interest in the development of human resources in the country. Considering the pressing need of reducing poverty and unemployment, generation of employment has been considered as one of the basic objectives of the First Five Year Plan [15; 9]. As stated in the planning document, a very high priority had been given to the human resources development in the Second Five Year Plan [8; VIII, 1]. Third Five Year Plan states, the general approach of the plan of poverty alleviation is to provide production, employment to the populace so that the labouring population has such command over resources and income as necessary for satisfaction of their basic needs [16; 38].

Further, to impart education and training to our existing and future work force the universities of the country, a large number of colleges, few specialised institutes, (e. g. IBA, ICMA, ICAB etc.). Bangladesh Management Development Centre (BMDC) Public Administration Training Centre (PATC), Industrial Relations Institutes (IRI) a large number of vocational institutes and various departmental training institutions are in operation. To be specific, it may be precisely told that while the universities and specialised institutes are engaged in degree offering courses, BMDC, PATC, IRI and various vocational and departmental training institutions are busy with training of various categories of working employees in various sectors of the economy of the country including government officials. Recruitment and selection, and in some cases promotion of civil servants/employees, are being dealt with by two Commissions viz Public Service Commission-1 and Public Service Commission-2. Besides a separate Ministry under the Ministry of Labour and Manpower is there to look after the affairs of human resource development of the country. But the question is: what is the outcome? Could they achieve the desired level of success? The answers to these queries are probably not in the affirmative.

At the national level, we do not have a well conceived and well defined manpower plan as yet. Even such figures as population of the country, total number of people employed in different sectors of economy of the country supplied by various sources of the Government are not always exact and thus not dependable. It is interesting that sometimes even the same source provides conflicting data.

About the creation and sustaining of entrepreneurial class which is believed to be the most important segment of human resources in any

society, we are more or less unconcerned. Excepting the following small attempts viz.1..... Educated Unemployed Youth Programme (on 300 Youth)2. Small farmers and landless labourers development project (some pilot projects)3. Grameen Bank Prakalpa 4. Vikalpaya (A Sonali Bank Project in collaboration with Dhaka University), there is hardly any worth mentioning attempt in this area. Again, most of these projects were not even allowed to continue for long for reasons best known to the policy makers.

At the enterprise level the picture is still bad. In private firms what we call human resource development programme is in fact absent. At the public enterprise level what exists is some sort of personnel policy which includes recruitment and selection. Promotion, training, compensation and motivation policies and not human resource development programme in a sense we conceive it.

However, HRM activities of public enterprises in Bangladesh have been and are still influenced by the surrounding socio-politico-economic environment. Political instability in the country, policies (or lack of it) of successive governments, military intervention in politics, type of economic policies pursued and philosophy behind them, nature of labour union leadership and the extent of their commitment to the industrial life have significantly moulded the HRM activities in public enterprises in Bangladesh. Some of the issues like the nature and extent of control exercised by the political leadership and concerned ministry over PEs inadequate functional and financial autonomy, too many hierarchical layers of administration and too many channels of control resulting in inadequate accountability, poor labour management relations have adversely affected the employees working in our public enterprises [17;192].

The poor state of human resources in general and the imbalances in human resource development in particular may be attributed to number of factors. But the lack of an integrated policies at the national level might be the most important one. Uptil now there has not been any approach to deal with measuring manpower requirements of various segments of the economy, supplying trained manpower to different sectors, developing and retaining trained labour force in the economy and developing institutional framework to meet the national requirements. The study of the planning documents of the Government indicates that the concrete estimation of either manpower development or of requirements for planned investment in human resources is

absent. Besides, linkages of training issues with education policies and educational administration are yet to be done. It has been our growing realisation that in Bangladesh the training needs is not properly identified, methods of training are sometime inappropriate and evaluation of training programmes are either absent or inadequate. As regards compensation, some fundamental issues like (a) whether the compensation be fixed on the basis of performance or seniority or skills acquired or on the nature of job? (b) Whether financial or nonfinancial incentives are important and when does such incentive play more important role in motivating individual? are yet to be resolved. For such confusion improper compensation policies are being pursued which have resulted in low morale of the employees and dwindling productivity. Speaking about public sector in particular, it has been observed that the development of human resources in this sector has been adversely affected by defective recruitment and selection policy, insufficient and ineffective training policy and improper compensation policy. In connection with recruitment and selection of employees in the public sector Sobhan and Ahmad commented: "Political pressure had led to excessive overmanning at all levels of the public-sector so that public sector-was carrying excessive wage and salary bill in relation to its production, income, whilst the quality of management had seriously suffered from the requirement and in the public sector [18; 539].

RECOMMENDATIONS AND CONCLUSIONS

It has been increasingly recognised that for development of any society human resource is more a crucial factor than material resources. The successful implementation of development policy or programmes is more a function of the level of human skill and motivation than that of mere ownership of material resources. Thus investment in human resource development is significant. In the context of Bangladesh, an otherwise resource poor country, investment in human resource development is more significant. But the development of human resources in a developing country like Bangladesh is very difficult. The difficulty arises from the fact that human resource development as a process involve a wide range of complex interrelated socio-politico economic considerations which sometimes appear to be beyond the control and manipulation of planners. The difficulties also arise from the facts that there exists a poor perception of the government about the role human resources in the process of economic development of the country and that government lacks commitment towards this end.

However, for obvious reasons we should give priority towards human resources development and there should be an integrated approach to human resource management. We recommend that a sizable amount of our G. D. P. should be spent on human resource development and the money spent on this head should not be treated as expenditure, rather should be considered as a useful investment.

At the national level a manpower plan needs to be formulated. The biggest challenge for development planners might be to devise a system of education which extends universal literacy, imparts relevant training and is assessible to all irrespective of income levels. Further, along with the measures at the national level there must be simultaneous efforts at the enterprise level particularly in the areas of recruitment and selection, training, compensation and motivation, to prepare manpower for future jobs and making existing personnel more capable. It may be relevant to mention here the recommendation made, by, Professor Muzaffer Ahmad a renowned economist and a management scientist of the country in a recent paper [19]. He advocated for a separate management service cadre in the public sector of the country. We agree with him, but we look a little more ahead.

In line with public service commission we advocate for the creation of a separate "Industrial Services" for all categories of employees in the industries viz managers, staff and workers. We feel that this would help in the development of human resources particularly in the industrial sector of the country. Before we conclude, we remind you a Chinese proverb if you wish to plan for a year, sow seeds; if you wish to plan for ten years, plant trees; if you wish to plan for life time, develop men. "

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বাংলাদেশে অর্থনীতি শিক্ষা, প্রশিক্ষণ ও গবেষণায় গত চার যুগ ধরে
নিরলস কাজ করে যাচ্ছে

বাংলাদেশ অর্থনীতি সমিতি

বাংলাদেশ অর্থনীতি নির্মাণে তথা এদেশের আপামর
জনসাধারণের ভাগ্য উন্নয়নে সদা নিবেদিত আমরাঃ

বাংলাদেশ শিল্প ব্যাংক

বাংলাদেশ কৃষি ব্যাংক

অগ্রণী ব্যাংক

রিলায়েন্স ইনস্যুরেন্স লিমিটেড

আমাদের যৌথ প্রচেষ্টায় বাংলাদেশের
অর্থনৈতিক উন্নয়ন ত্বরান্বিত হোক, ভবিষ্যত
হোক সমৃদ্ধিশালী ও গতিশীল

