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বাংলাদেশ জার্নাল অফ পলিটিক্যাল ইকনমি তিরিশতম খণ্ড, সংখ্যা ১, জুন ২০১৪

সম্পাদক ড. আবুল বারকাত

সম্পাদনা উপদেষ্টা কমিটি অধ্যাপক ড. অমত্য সেন অধ্যাপক ড. নুরুল ইসলাম অধ্যাপক রেহমান সোবহান ড. কাজী খলীকুজ্জমান আহমদ

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This volume (Vol. 30, No. 1) of Bangladesh Journal of Political Economy (BJPE) contains select papers presented at the Bangladesh Economic Association (BEA) 18th Biennial Conference held in 2012 and papers presented at the Regional Conferences organized by BEA during 2012-14 period in Chittagong, Kushtia, Mymensingh, and Rajshahi. In addition to these, this volume contains articles which are submitted to the Editor for publication mostly during the last one year. All the papers included in this volume were reviewed by both internal and external reviewers, and concurred by the Editorial Board for publication.

Let me express my indebtedness to the authors, the reviewers, and the members of the Editorial Board of the Journal. Special thanks are due to Prof. Ayubur Rahman Bhuyan-an expert editor, and Prof. Toufic Ahmad Choudhury, member of the Editorial board of the Journal, shouldered mentionworthy responsibilities Howards publication of this Volume.

Tomormas

(Abul Barkat) Editor, Bangladesh Journal of Political Economy President, Bangladesh Economic Association

বাংলাদেশ অর্থনীতি সমিতির যান্মাসিক জার্নাল Bangladesh Journal of Political Economy প্রকাশনার নীতিমালা

- ১। অর্থনীতির বিভিন্ন শাখায় তাত্ত্বিক এবং প্রায়োগিক বিষয়ে প্রবন্ধ প্রণয়ন করার জন্য প্রবন্ধকারদেরকে অনুরোধ জানানো হবে। ইংরেজী এবং বাংলা উভয় ভাষায় রচিত প্রবন্ধ জার্নালের জন্য গ্রহণ করা হবে।
- ২। Initial screening নির্বাহী সম্পাদকের এখতিয়ারভুক্ত থাকবে, তবে প্রয়োজনবোধে সম্পাদনা পরিষদের অন্য সদস্যদের সহায়তা তিনি নেবেন। নির্ধারিত format মোতাবেক সংশোধনের জন্য এই পর্যায়ে প্রাথমিক ভাবে short-listed প্রবন্ধসমূহ প্রবন্ধকারের কাছে প্রেরণ করা হবে।
- ৩। অভ্যন্তরীণ reviewer সাধারণতঃ সম্পাদনা পরিষদের সদস্যদের মধ্য থেকেই মনোনীত হবেন। বহিঃস্থ reviewer সম্পাদনা পরিষদের সিদ্ধান্তক্রমে প্রবন্ধের বিষয়ের ভিত্তিতে সম্পাদনা পরিষদের বাইরে থেকে মনোনীত হবেন, তবে তিনি দেশের অভ্যন্তরে বা বিদেশে অবস্থান করতে পারেন। সম্পাদনা উপদেষ্টা কমিটির সকল সদস্য reviewer হতে পারবেন। তৃতীয় reviewer প্রয়োজন হলে সম্পাদনা পরিষদের বাইরে থেকে মনোনীত করা হবে।
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- ৫। অর্থনীতি সমিতির সদস্য এবং সদস্য-বহির্ভূত যে কোন আগ্রহী প্রার্থী জার্নালের গ্রাহক হতে পারবেন। তবে সদস্যদের ক্ষেত্রে গ্রাহক ফি (subscription fee) পঞ্চাশ শতাংশ রেয়াত দেয়া হবে।
- ৬। জার্নালের footnoting এবং writing style এতদ্সঙ্গে সংযোজিত হলো (জার্নালের শেষাংশ)।
- ৭। দেশের অভ্যন্তরে অবস্থানকারী উপদেষ্টা কমিটির সদস্যদেরকে বছরে দু'বার সম্পাদনা পরিষদের সভায় আমন্ত্রণ জানানো হবে।
- ৮। ক) তিনটি কোটেশন সংগ্রহ করে সম্পাদনা পরিষদের সিদ্ধান্তক্রমে মুদ্রক প্রতিষ্ঠান নির্বাচন করা হবে।
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A Treatise on Political Economy of Unpeopling of Religious Minorities in Bangladesh through the Enemy Property Act and Vested Property Act

ABUL BARKAT*

"Let the jury consider their verdict", the king said, for about the twentieth time that day. "No, no" said the Queen. "Sentence first – verdict later" [Carroll Lewis (1865). Alice in Wonderland]

Abstract The purpose of this treatise is to deepen our politico-economic understanding about the real causes (and not the pretext) and real consequences (and not the apparent ones) of the Enemy Property Act (EPA) and Vested Property Act (VPA)**. The ultimate purpose of this treatise is to delve deeper into the possibilities of resolution of the consequences of EPA/VPA, primarily in terms of handing over back the properties of the religious and ethnic minorities (especially the affected Hindus and

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Various issues including outcomes of survey research related to this article have been published by the author in many books, journals, and presentations in Bangladesh and beyond. The notable ones include (1) Barkat, A. (2011). Political Economy of Deprivation of Hindu Minority in Bangladesh: Living with the Vested Property Act. In A. Dasgupta, M. Togawa, and A. Barkat (Eds.) Minorities and the State: Changing Social and Political Landscape of Bengal. Chap. 5. P. 91-118. New Delhi: SAGE Publishers India Pvt. Ltd and Japanese Association for South Asian Studies (JASAS), (2) Barkat et al. (2008). Deprivation of Hindu Minority in Bangladesh: Living with Vested Property. Dhaka: Pathak Shamabesh; (3) Barkat et al. (2000). An Inquiry into Causes and Consequences of Deprivation of Hindu Minorities in Bangladesh through the Vested Property Act: Framework for a Realistic Solution. Dhaka: PRIP Trust; and (4) Barkat et al. (1997). Political Economy of the Vested Property Act in Rural Bangladesh. Dhaka. Association for Land Reform and Development (ALRD). However, in this article, the author have attempted to unearth many new dimensions of analysis and conclusions, provided many new estimations, included new areas about the role of research community and civil society in the advocacy towards repealing Vested Property Act and amending the Vested Property Return Act, forwarded time-demanded relevant new recommendations towards implementation of the Vested Property Return Act, and forwarded some new and critical politico-economic analysis about the possibilities and impossibilities(!) of resolution.

indigenous peoples among others) which were grabbed using EPA/VPA by the grabbers'-grand-alliance. The Enemy Property Act promulgated in 1965 by the militaristic-autocratic-feudalistic-elitist rulers of Pakistan (using the 1965 Indo-Pak War as pretext) and the subsequent continuation of the same in Independent Bangladesh with a new name - the Vested Property Act both have been used not just to divide people based on their religious identity (Muslim versus non-Muslim), but employed as a weapon of mass destruction of religious and ethnic minorities aiming at formation of primary accumulation of capital by way of grabbing their properties. The nationwide destruction and disaster has been so huge that about 1.5 million households or 7.5 million people representing religious and ethnic minorities (of which 80 per cent being Hindu minority) have been directly affected by the EPA/VPA, and have lost over 3.0 million acres of their land property (of which 87 per cent belong to Hindu minority) and many other movable assets. The extent of mass destruction using the "EPA/VPA weapon" was not only limited to quantifiable measures of land and other assets of the religious and ethnic minority people, it was much beyond that - there has been unmeasurable extent of national losses in terms of gross denial of human liberty and freedom, institutionalization of socio-cultural and politicoeconomic deprivation, forced mass out-migration, stress and strains, mental agonies, severance of family ties, loss of human potentials, disruption in communal and human harmony, unfreedom, disintegration and historical disruption in the process of national human capital formation, and fueling the rise of Islamist fundamentalism. These are the facts we now know for sure, empirically. But what is the causal essence? Searching that, it is argued that in order to understand the objective truth pertaining to the causes and consequences of EPA/VPA and to search for a genuine solution, a paradigm shift in our thinking is necessary from our traditional understanding of the whole thing. Such a shift, as I propose, could most appropriately be termed from the appearance of things to the essence of things. I have forwarded an argument - based on the multifaceted empirical and qualitative substantive analysis of history, politics, social dimensions, and economics of EPA, VPA, Vested Property Return Act 2001 (and the subsequent six amendments by 2014), and the 'movement' of and for the affected people - that, to be successful in the "battle for justice" the whole issue of EPA/VPA and pertinent to that the resolution possibilities should not be seen through the lenses of a problem emanating from religious or ethnic identity of those who are affected, rather this should be seen as a *class* issue and the grabbers' identity should be seen from the angle of a triangular grand alliance of the rent seekers (the grabbers) and their subservient state (with governance agencies) and politics (serving the interest of the rent seekers-grabbers). Based on this paradigm shift in my understanding of the essence of things, it is concluded that the 'movement' as it is moving now, will most likely end up with a "trap-in-perpetuity'; the affected people (or their inheritors or their successors-in-interest, as appropriate) will not get back their legal properties

lost due to EPA/VPA. In order to get rid of the destructions done by the EPA/VPA and win the battle for justice, I have forwarded three key suggestions, which are: (1) Do everything to transform EPA/VPA-related thoughts and actions from the appearance of things to the essence of things, meaning leave aside the *religion* part and uphold the *class* dimensions, (2) Involve people from all walks of life, especially all affected people and the exploited at large (irrespective of religions) to transform the on-going movement into a "mass movement" against the "rent seekers-grabbers grand alliance", and (3) In accomplishing that - transform the whole agenda of land rights movement of the EPA/VPA affected people into an integral part of the broader agenda of the nation-wide agrarian reform movement (or at least land reform movement or even towards poor people's movement for rights to khas land). This path of establishing land right of the poor people irrespective of religion - is the only substantive path towards long-lasting solution; and walking through this path requires a paradigm shift in the whole philosophy of rights-based movement - a political philosophy backed by the substantive slogan "All poor and marginalized people unite" (to be more correct "All poor and marginalized people of the world unite"). This, in turn, requires compatible changes in the mind-set of the leaders and activists in that movement.

JEL Classifications: A14, D63, D74, E65, J11, J15, K11, K42, P14, P16, P18, K42, Z12, Z18.

Keywords: Enemy Property Act, Vested Property Act, Vested Property Return Act, Act as means of oppression, Oppressive Act, Hindu minority, Adverse impact of regressive act on marginalized people, Political economy, Political economy of anti-people law, Law and class, Act promoting forced out-migration, Act violating fundamental human rights, Civil society movement against repressive acts and laws, Law and rent seekers, Minority movement and class struggle, Demographic trends, Law and economics, Economics of minorities, Political economy of injustice, Property rights, Religion and economics, Public policy, Conflict and conflict resolution.

1. Enemy Property Act to Vested Property Act – When Law becomes Weapon of Mass Destruction!

There is no denying the fact that the process of communal disharmony, disruption and disintegration in this part of the world started with the colonial "divide and rule" policy in Bengal. This has got further momentum with the evil spirited "two nation theory". This process was further institutionalized through the enactment of the state-sponsored Enemy Property Act by the Pakistani regime during the 1965 Indo-Pak War that lasted for only seventeen days in September 1965. The Pakistani ruling elites' purpose was very simple – reducing the number of Bengali-speaking population of East Pakistan by driving out a considerable part of the Bengali Hindu population who constituted almost one-third of the total population. The forced mass out-migration of Hindu population – mostly to India – during the late 1940s to the mid-1960s and onward is a reality beyond doubt. Among various notable factors, responsible for such a massive out-migration of Hindu population, were the impacts of laws, such as the Enemy Property Act (EPA) and the Vested Property Act (VPA) (detailed analysis on this is presented in section 3).

The Vested Property Act is a successor of many laws and by-laws promulgated by the Pakistani autocratic feudal rulers with the ill motive to destroy the unity of Bengalis of the then East Pakistan. The evolution of relevant legislations having deep-rooted consequences for the Hindu and other religious and ethnic minorities is depicted in Figure 1 (for details see, Barkat et al. 1997, p. 24-52, and Barkat et al. 2000, p. 17-25). Most of these detrimental-to- religious-minorities laws were not properly discussed by the democratically elected law-making bodies. Even when such laws were placed before the Parliaments and assemblies, they were not discussed indepth and their possible implications were not properly examined. The reality was straightforward – in most cases, the properties belonging to the Hindu and other religious minority communities were requisitioned, no matter whether it belonged to the evacuee persons or the lawful owners still residing in East Bengal.

In order to meet the needs to run the administration and ensure accelerated development, the then government of Pakistan enacted the Requisition of Property Act (Act XIII of 1948) as a temporary measure for a period of three years which created sufficient scope for temporary and/or permanent takeover of any property that had been considered by the administration to be "needful for the purpose of the state". The act was widely used against the religious minority in East Bengal. The East Bengal Evacuees (Administration of Immovable Property) Act 1951, which was enacted for administering, preserving and protecting the immovable properties of the evacuees, also affected the Hindu elite and Zaminders who were the owners of huge property, lands and buildings. All the minority community property owners in East Pakistan were also deprived of their ownership of property right, right to ensure title of property, and right to transfer including sale, gift, will, entrusting with power of attorney etc. with the implementation of "The East Pakistan Disturbed Persons Rehabilitation Ordinance 1964 (Ordinance 1 of 1964)", which had been implemented with apparently innocent plea of speedy rehabilitation of persons affected by the communal disturbance.



Figure 1: Evolution of Enemy Property Act, Vested Property Act, Vested Property Repeal Act, Vested Property Return Act 2001 (and all subsequent Amendments)

Source: Prepared by the author based on Barkat et al. 2008, p. 48.

Following the war between India and Pakistan that started on 6 September 1965 (and ended after seventeen days on 22 September 1965), the government of Pakistan promulgated an ordinance called the Defense of Pakistan Ordinance (Ord. XXIII of 1965) for providing special measures to ensure the security, the public safety, interest and the defence of the state. The government framed the Defence of Pakistan Rules (DPR) under the provisions of emergency powers and the Defence of Pakistan Ordinance. Under these rules, the government of Pakistan made an executive order on 9 September 1965 named the Enemy Property (Custody and Registration) Order II of 1965, which eventually came to be known as The Enemy Property Act. The simple *de facto* meaning of this act is, Hindustan = Enemystan (place of enemies), and Hindu (irrespective of geographic location of residence) = Enemy. And that was applied with a spiteful design to not only the Hindu minority, but also to all the religious and ethnic minorities.

The Enemy Property Act of 1965 comprised the following major components:

- 1. India is declared as an enemy country (since Pakistan and India were at the state of war with each other).
- All interests of enemy, i.e., the nationals/citizens of India, those residing in the territory occupied or captured or controlled by India – in the firms, companies as well as in the lands and buildings situated in Pakistan – are to be taken over by the custodian of Enemy Property for control or management.
- 3. The benefits arising out of trade or business or lands and buildings should not go to the enemy, so that it may not affect the security of the state of Pakistan or impair its defence in any manner.

The state of emergency declared in 1965 was lifted throughout the country on 16 February 1969. Since the promulgation of Enemy Property Act (more precisely "The Enemy Property Custody and Registration Order, 1965") was a direct consequence of war-time-emergency, it was natural and logical to expect that with the withdrawal of emergency, the Enemy Property Act should not remain valid and, therefore, be repealed. But government of Pakistan promulgated a new ordinance named the Enemy Property (Continuance of Emergency Provisions) Ordinance, 1969 (Ordinance I of 1969) on the very day of lifting the emergency. The most discriminatory law against the religious and ethnic minorities, especially against the minority Hindu community remained in force till the beginning of the Liberation War on 26 March 1971.

It was immediately after the liberation that the Bangladesh government enforced, on 26 March 1972, the Bangladesh Vesting of Property and Assets Order 1972

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(Order 29 of 1972). By this order the properties left behind by the Pakistanis and the erstwhile 'enemy properties' were combined to a single category. However, on 23 March 1974, the democratic government passed the Enemy Property (Continuance of) Emergency Provisions (Repeal) Act, Act XLV of 1974, repealing Ordinance I of 1969. In order to keep the historical record straight, it is important to note that the Supreme Court of Bangladesh in its judgements in relation to a number of cases declared the properties of the minorities listed as Vested Property after 23 March 1974 as absolutely illegal, and termed the Vested Property Act a dead act. The Supreme Courts clear verdicts and undisputable directives on this absolutely illegal and dead act are evident in the following cases: Laxmikanta Roy vs UNO and others (46 DLR, p. 136), ADC (Rev) Dhaka vs Md. Mostafa Ali Mridha and others (48 DLR, p. 193), Aroti Rani Paul vs Sudarshan Kumar Paul and others (56 DLR, Appellate Division, p. 73), Saju Hossain vs Bangladesh (58 DLR, Appellate Division, p. 177). But despite the fact of repealing Ordinance I of 1969 under Act XLV of 1974, all enemy properties and firms which were vested with the custodian of enemy property in the then East Pakistan, remained vested in the government of Bangladesh under the banner of Vested Property. At the same time, the government also enacted another law, namely the Vested and Non-resident Property (Administration) Act (Act XLVI) of 1974, to provide the management of certain properties and assets of the persons who are non-residents of Bangladesh or have acquired a foreign nationality. Though the principal aim of the Act XLVI of 1974 was to identify and take over the properties of those residents who left Bangladesh during and/or immediately after the liberation war and/or took foreign citizenship, this Act XLVI of 1974, in practical sense, was widely used against all the religious minorities, especially the majority among the minorities - the Hindu minority.

The military-autocratic government of Bangladesh, in November 1976, repealed previous Act No. XLVI of 1974 by Ordinance XCIII of 1976. The ordinance empowered the government not only to administer and manage the vested properties, but also to dispose of or transfer the same on a long-term basis. All the acts prior to Ordinance XCIII of 1976 (including Ordinance I of 1969) empowered the government only to become the custodian and to preserve enemy property in contemplation of arrangements to be made in the conclusion of peace with India. But Ordinance XCIII of 1976 made the autocratic government the owner of vested properties instead of protector of the same. Thus, the military-autocratic government encroached upon the right of ownership, which is a gross violation of the existing laws pertaining to the right to private ownership. And this encroachement upon the right of ownership on properties of the religious and

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ethnic minorities continued even after the judgement passed by the Supreme Court's Appellate Division that all properties enlisted as vested after the passing of the judgement on 23 March 1974 should be deemed illegal. This illegal action did not stop after the verdict of the highest court. Not only that, the grabbing of land properties of religious and ethnic minorities using VPA (in various forms) continued even after the passing of the Vested Property Repeal (Return) Act 2001 (details see Barkat et al. 2008, p. 121-161).

It was not automatic and took a very long time to pass the Vested Property Repeal (Return) Act 2001 by the National Parliament on 11 April 2001 – the last year of 1996-2001-Awami League government. In this process, the sequence of events in 2000-2001 was as follows: On 03 September 2000, the Prime Minister Sheikh Hasina – in a regular meeting of the Cabinet of Ministers – took a major decision to return the Vested Property to their original owners. In order to materialize this decision, a five-member cabinet committee was formed to formulate a draft law for restoration of ownership of the vested property which submitted the final draft Vested Property Return Act on 22 October 2000. This final draft was approved by the Cabinet as "Vested Property Return Bill 2001" on 08 January 2001, and then placed in the 22nd session of the National Parliament on 29 March 2001. The National Parliament passed the bill as Vested Property Return Act (Act XVI of 2001) on 11 April 2001.

There is a history behind the history of Vested Property Return Act. As mentioned, reaching up to the Vested Property Return Act 2001 was not at all a smooth landing. This has happened after a 36-year long-period of promulgation of the Enemy Property Act [framed under Defense of Pakistan Rules as Enemy Property (Custody and Registration Order II of 1965, during India-Pakistan War, 1965], and after a 27-year long-period of the historical verdict given by the Appellate Division of the Supreme Court of Bangladesh – declaring all vested properties enlisted after 23 March 1974 to be illegal as because the law of enemy property became a dead law, and as a consequence of wide dissemination of research-based nationally representative robust empirical findings about the destructive impact of the EPA/VPA along with prolonged struggle by the secular social and progressive political forces, and finally, expressed commitments of the members of the National Parliament in the year 2000-2001.

The Vested Property Return Act 2001 passed by the Parliament gave the government 180 days' time to publish the list of vested properties and return the properties to those affected by the act. However, on 26 November 2002, with the BNP-Jamat-led four-party anti-secular alliance in power, the parliament passed an

amendment to the Vested Property Repeal Act 2001 [Act XXXIII of 2002] and allowed the government unlimited time to return the vested properties. It is worth noting that the Awami League-led government enacted the Vested Property Return Act 2001 with the objectives of returning Vested Properties to its owners or heirs.

In response to the legitimate demands of the EPA/VPA affected victims and demands of the civil society on the one hand, and demand by the relevant administration and the rent seeking grabbers on the other, the Act was amended six times in 2002, 2011, 2012 (twice), and 2013 (twice). The Act, as pointed above, was amended regressively in 2002 (with anti-secular forces in power) to allow the government unlimited time to return the vested properties, which imply "no-solution in-perpetuity". The 2011 amendment was made apparently to ensure enforcement of the law so that the affected owners or heirs or co-sharers in possession or successors-in-interest could get the vested properties back within the shortest possible time through legal process. However, a few more subsequent amendments were made by the Ministry of Land without consulting any affected persons' or victims' representatives with clear ulterior motive of retarding (may be further complicating and/or stopping!) the process of implementation of the law. To put it bluntly, it was done to ensure that the affected persons do not get any relief from the legal process at all.

And, finally, on 10 November 2014 the need for 7th time amendment of the Vested Property Return Act was raised in the Cabinet of Ministers with the Prime Minister Sheikh Hasina in Chair. The Prime Minister herself resisted the 7th time proposed amendment move, and with annoyance over the issue asked the Land Minister "How many more times are you going to amend this law?"; then, in the same meeting she asked the Law Minister as to whether the Land Ministry has consulted the Law Minister, without any hesitation, straightly replied `No'! All these imply – there must be something somewhere very wrong which will not only delay the whole process but also jeopardize the whole cause of returning the vested properties back to their legal owners and/or to legal inheritors and/or to successors- in-interest as per the Vested Property Return Act 2001 (and subsequent pro-vested-people amendments).

If this is the reality about the caricature in implementing the Vested Property Return Act 2001 and its subsequent amendments then raising some straight questions would be obvious. What is wrong? Why is it wrong? Who are the wrong doers? Why do they do wrong? Here lies a distinct distinction between the *appearance of things* and the *essence of things*. The *appearance* is – what the land

bureaucracy and the implementing administration of the Vested Property Return Act really say and do. They say that, due to various complications and complex nature of the job "it is getting difficult to prepare and finalize the list of vested property". Even 44 out of 64 Deputy Commissioners (head of district administration and in-charge of preparing VP list) have written letter addressing the Land Ministry for extension of time to prepare the VP list (and this is not the first time asking for time extension), and at the same time they have also shown their "sympathy" towards the affected persons by saying that due to shortage of relevant documents in possession of the affected persons and due to shortage of time many of the affected persons could not file application to the Tribunal. Based on these lame excuses they have suggested extension of time beyond 31 December 2013. Essentially they say two things: First, "we are having difficulties in identifying the exact amount, nature, location, and actual owner of vested properties which are under the control and/or custody and/or possession of the government" (which is known as "Ka Schedule" or Ka Tafshil or Ka Talika under the Vested property Return Act); and Second, "we are having difficulties in identifying the exact amount, nature, location, and owner of properties mis-listed as 'vested' in different times by the land-related authorities (Tehsilder, Assistant Commissioner Land, Sub-registry office) or "non-government" vested properties on which government has no control or no possession (which is known as "Kha Schedule" or Kha Tafshil or Kha Talika and which has been scrapped by law from the VP list in 2013).

Apparently, the government wants expeditious solution, but the solvers - the bureaucrats from top to bottom - who are entrusted with the responsibility to resolve the problem by preparing the appropriate list, ensuring that the proper list is gazetted, listening the voices of the affected persons, assisting the affected persons in filing applications, and finally returning back the properties to the legal persons in congruence with the spirit of the Vested Property Return Act - are not at all interested in complying with the government's directive. The solvers are buying time and have already complicated the whole issue. One of many glaring examples of these are as follows: When a major amendment of Vested Property Return Act 2001 was done in 2011, the total amount of vested land (as reported by the Land bureaucracy of Land Ministry) according to 'Ka Schedule' was 189,000 acres, which, for unknown reasons, now stands at 215,000 acres; similarly during the same little span of time, the total amount of land under 'Kha Schedule' has been increased from 442,000 acres (in 2011) to about 700,000 acres (in 2014). How came, the amount of vested land under governments' control, command, custody, possession (i.e; vested land under "Ka Schedule") has

increased by 14 per cent overnight. Is this primarily due to arbitrary conversion of land under '*Kha* Schedule' into the '*Ka* Schedule' by the problem solvers? How came, the same under '*Kha* Schedule' increased by 58 per cent overnight!? Is this

Here, it is important to raise two pertinent issues, namely (1) the issue of "deliberate" complications related to the amount of land under Ka and Kha schedules, and (2) the issue of "missing land" of the religious and ethnic minorities. The fact is that the land bureaucracy and VP Return Act implementers are so corrupt and unethical that they play all possible foul games with those whose land belong to the 'Kha Schedule' (which is kept out of VP list). This is evident, among others, on many counts such as not permitting to pay land tax, not permitting to do mutation and so on. Here, it is necessary to mention that some people who are sympathetic to the cause of EPA/VPA have raised the issue that re-estimation of the author's estimates of 3 million acres of enemy and/or vested property in Bangladesh is necessary due mainly to the fact that 'kha schedule' has been kept out of VP list by law (of Vested Property Return Act 2001 and its subsequent amendments). As presented above, officially, the amount of land under 'Ka schedule' and Kha schedule' combinedly totals 915,000 acres (215,000 acres + 700,000 acres). I have no reason to agree with these official figures due to many reasons. The reasons include, among others, the following: What about unidentified EP/VP(?), what about VP after 23 March 1974(?), what about continuing VP(?), what is the reason for scrapping kha list(?), where was the problem with our 20-year's research on this(?). And, finally, where is the "missing land" of the religious and ethnic minorities which was owned by them before 1961 (the year of conduct of the Pakistan Population Census 1961) or before 1965 (the year of Indo-Pak War)? There is no hard empirical evidence about the amount of land owned and/or possessed by religious and ethnic minorities during early 1960's. However, my estimates based on plausible assumptions (presented below) show that since early 1960's the amount of "missing land" that was actually owned by the religious and ethnic minorities (before 1960's) would be about 2.48 million acres. Where is this 2.48 million acres "missing land"? Simply plundered - plundered from the weaker section of Population and grabbed by the rising rent seekers in alliance with the state (and her governance agents) and politics. In order to support my estimates of 'missing land' - a "conveniently ignored issue" - methodologically, it would be pertinent to present the assumptions based on which the estimated 2.48 million acres has been arrived at. The assumptions are as follows: (1) Officially, in 1961, the total population of the then East Pakistan (now Bangladesh) was 50.8 million, of which 18.4 per cent was Hindus and 1.2 per cent belonged to other religious and ethnic minorities (see, Pakistan 1961). Truly speaking, this officially shown share of non-Muslim population in total population was an under estimation or misstatement of reality. (2) The total amount of privately owned land (including those owned or possessed by the indigenous peoples and excluding land under government use, khas land and abandoned properties - at that time) in early 1960's (before dispossession by the religious and ethnic minorities) would be around 28 million acres, (3) The amount of ownership of land by religious or by ethnic minority identity was proportional to their population size (this may not be true for the Hindu minorities and also for the ethnic minorities; it is most likely that their share of ownership in that total land was higher than proportional to population size), and (4) As found in the survey, that during 1965-2006, due to EPA/VPA the Hindu minority has lost 45 per cent of their original land ownership (Barkat et al. 2008, p.167-168). In estimating the amount of "missing land" by religious and ethnic minorities since early 1960's, this assumption (statistic) has been applied to all religious and ethnic minorities (i.e. 19.6 per cent of total approximate land of 28 million acre as original ownership which equals to 5.49 acres of land of religious and ethnic minorities, of which 45 per cent was lost due to EPA/VPA, which equals to 2.48 million acre - which is the bottom line estimation of the "missing land" - land lost and/or dispossessed by the religious and ethnic minorities in Bangladesh since 1960's).

primarily due to arbitrary inclusion of non-disputed land of the weaker section of people into 'Kha Schedule' to provoke land dispute by the name of vested property? All these are not just subject of simple complications - as it appears in the surface. This is appearance part of the bureaucracy-made complicacy - this is simply befooling us all through "land caricature". The essence is altogether different and simple hereinafter following: Vested properties of the religious and ethnic minorities have been grabbed by the powerful rent seekers in alliance with the land-bureaucrats (who have been entrusted with the responsibilities to resolve the problem), and the state (with governance agents) and politics - which are subservient to the rent seekers (for detailed analysis of politics and economics of grabbing of vested properties by the rent seekers see, section 8). And, in order to serve the interest of the grabbers of vested properties, the land-bureaucrats and all relevant agents of formal solvers are bound to follow the same old principles of jeopardizing the cause of justice: "Let the crisis be"; "Let the sleeping tiger (may be dog) sleep"; "Promise big things and give a cent; "Delay in delivering justice"; "Find out small loopholes and magnify those"; "Wait and see"; "Divert attention"; "Raise artificial problems", and alike.

One of the last amendments (5 May 2013) - the most dangerous one - opened the floodgate for further listing of minority community's property as vested property for indefinite period, which is not only clearly illegal as per already discussed Supreme Court's Verdict and directives, but also unconstitutional violating all norms of fundamental, basic, human and justiciable rights of the minority citizens. To put it objectively and bluntly, unless and until the last amendment of 5 May 2013 is abolished not only that no solution will be there, the minority citizens will invariably lose their remaining property. Therefore, we see no effective solution so far; the vesting of properties of minority community is continuing. Here, it would not be odd to quote my own work (which is not at all pleasant!) of 14 years back, when I wrote the following as conclusion and caution: "The de facto continuance of the Vested Property Act contradicts the spirit of the Proclamation of Independence and at least nine articles of the Constitution of Bangladesh and the Law of Nations" (Barkat et al. 2000, p. 25); "The extent and nature of the problems invited by enacting and implementing the anti-human Enemy Property Act and Vested Property Act indicate that any attempt to resolve all the problems at a time can be equivalent to prepare a ground whereby the total cause of fighting against an historical misdeed might be jeopardized" (Barkat et al. 2000, p.446); and based on this premise continued "Asking for a drastic solution of such an issue as EPA/VPA by involving the beneficiaries (who are intimately associated with and are "powerful in the local power structure) would be an impractical proposition" (Barkat et al. 2000, p.441), and therefore concluded by saying that

"The solutions should be formulated based on the objective understanding of the historically formed socio-cultural values and mind-set of the people. The solution based on slightest deviation from this may call for a greater danger (and may be counter-productive) than the problem itself" (Barkat et al. 2000, p. 476).

Therefore, based on both the appearance and essence pertaining to the process of implementation of the Vested Property Return Act (so far), I have all the reasons to doubt that the people affected by the EPA/VPA will get justice in getting back their legal properties. I doubt it because the type of political processes, commitment and competence of the solvers, and people's proactive participation necessary to implement the Vested Property Return Act is simply non-existent. Moreso, the equally substantive reasons for my doubt are at least twofold. First, the contemporary Bangladesh society-economy- politics is dominated by the rent seekers-plunderers (who precisely form the grabbers' community of enemy and vested properties) who have subjugated the whole system of politics and government (for details see Barkat 2014a). Second, the issue of taking back the legal ownership of land and other properties illegally enemized and/or vested using the EPA/VPA which is occupied by the government or grabbed by the rent seekers is an issue of establishing fundamental constitutional and human rights. It is a matter of historical truth that, establishing land rights (for that matter any right) requires "movement" - a serious movement of those who have been affected, destroyed, deprived and lost their legal rights over their own wealth which is still not in the horizon. Here, my doubt multiplies when I see the real movers and shakers - the affected people are not engaged in this serious movement, rather they just follow others who are either sympathetic to the movement or whose agenda is God knows what?2

This may not be out of place to remind that rights can be established through very many ways. 2 But not all paths lead to the establishment of real rights. The independence of Panama in 1903 is one such glaring example. The fact is that, Panama was part of Columbia when the French engineer Ferdinand de Lesseps, who directed construction of the Suez Canal, decided to build a canal through the Central American Isthmus, to connect the Atlantic and Pacific Oceans. In 1989, the Suez Canal project ended - but it had inspired a dream in Theodore Roosevelt. During the first years of the twentieth century, the United States of America demanded that Colombia sign a treaty turning the Isthmus over a North American Consortium. Colombia refused. In 1903, President Roosevelt sent in the U.S. Warship Nashville. U.S. soldiers landed, seized and killed a popular local militia commander, and declared Panama an independent nation. A puppet government was installed and the first Canal Treaty was signed; it established an American Zone on both sides of the future waterway, legalized U.S. military intervention, and gave Washington virtual control over this newly formed "independent" nation. Interestingly, the treaty was signed by U.S. Secretary of State Hay and a French engineer, Philippe Bunau-Varilla, but it was not signed by a single Panamanian. In essence, Panama was forced to leave Colombia in order to serve the United States, (for details see Parkins 2005, p.58-62; and for further detailed analysis of other similar historical cases of infringement of people's rights see Chomsky 2005).

2. What Prompted Politico-Economic Research on Enemy and Vested Property? Issues on Objectives and Methodology

The Enemy Property Act (EPA) and the same Act subsequently (in independent Bangladesh) renamed as Vested Property Act (VPA) - both laws acted (still acting even after the repeal) as weapons of mass destruction. This plain truth is sufficient enough for any political economist to conduct research on the essence, processes, and impacts of EPA/VPA. To put it bluntly, the Enemy/Vested Property Act is anticonstitutional, anti-humanitarian, anti-secular, and anti-civilization. It provoked communalism and served as a powerful instrument towards gradual marginalization and pauperization of the religious minorities, especially the Hindu community through grabbing eviction and dispossession of their lands and homesteads, severance of family ties, loss of human potentials, and formation of a parasitic vested interest groups - and all these have acted as barriers to human capital formation in the country. The Enemy/Vested Property Act had destructive impacts on not only on the Hindu community, but also on all other religious minorities including the Christians and Buddhists, as well as on the ethnic minorities including all the indigenous peoples. It is noteworthy that while in terms of absolute amount of land lost due to EPA/VPA, the Hindu community shares the largest loss, as compared to the population size - the relative loss was no less among the other religious and ethnic minorities. Using the EPA/VPA coupled with division of India in to two states in 1947 and all subsequent communal riots, the land-homestead-waterbodies-forest of various indigenous communities have been grabbed by the local and national-level rent seekers. In the process, people, belonging to indigenous communities, have been alienated from their ancestral lands. The process, mechanisms and reasons of land dispossession and alienation attributable to the EPA/VPA is vividly evident both for the indigenous peoples inhabiting in the Chittagong Hill Tracts and in the plain land, namely, the Dalu, Garo, Hajonj, Khasi, Mahato, Oraon, Patro, Pahan, Rakhain, Santal, and many others (for details see Barkat 2004b, p. 21-67, 76). And this process of EPA/VPA led destruction, deprivation and alienation has been portrayed by Barkat (2014b) as "imperial ambition of the centre to exploit the periphery by exploiting the weaker sections of people and community in a class based society by all possible means and ways including using legal instruments of 'political engineering' and 'demographic engineering' to serve the interest of the rent seekers-plunderers and their political and governance allies" (Barkat 2014b, p.13-19, 75-76).

In spite of the fact that the barbarian act has remained in operation during nearly last fifty years, no initiative had been taken to conduct even a micro level exploratory research by social and political scientists, historians, and legal experts

of the country until mid-nineties of the last century. Keeping this in view, the first serious research work, though exploratory in nature, was conducted by the author (as lead researcher) in 1995-96 (henceforth, this study will be referred to as 1995 Study, because most field data collection was completed in 1995). Based on the findings of this 1995 Study, the first of its kind substantive book was published with the title "Political Economy of the Vested Property Act in Rural Bangladesh" (Barkat et al. 1997), which clearly revealed the importance and urgency of undertaking a nationally representative in-depth research on the subject. This led to the conduct of a second large scale research study launched in 1996-97 (henceforth to be referred as 1997 Study with the aim to attain more in terms of our knowledge base about the subject and to try to identify feasible solutions. In 2000, based on the outcome of this second research study another book was published titled "An Inquiry into Causes and Consequences of Deprivation of Hindu Minorities in Bangladesh through the Vested Property Act: Framework for a Realistic Solution" (Barkat et al. 2000). In 2006-07 (henceforth to be referred as 2006 Study), the third large scale research study was launched which conducted a panel survey on affected households who were covered in the 1997 Study. Based on outcome of this 2006 Study, the third research book was published bearing the title "Deprivation of Hindu Minority in Bangladesh: Living with Vested Property" (Barkat et al. 2008). This article - primarily based on the findings of the abovementioned three studies (conducted during 1995-2006 periods) with more emphasis on the 2006 Study and subsequent development of the Vested Property Return Act 2001 (and amendments made in 2002, 2011, 2012, and 2013) purports to present a comprehensive political economic analysis of various dimensions of deprivation-distress-destitution-dispossession-pauperizationalienation of the religious and ethnic minorities with especial emphasis on the Hindu minority attributable to the Enemy/Vested Property Act, and to forward suggestions towards resolution of this historical misdeed done in the last fifty years towards the religious and ethnic minorities in Bangladesh.

The overall objective of this article is to present a comprehensive political economy treatise on the causations of multidimensional impact of the Enemy/Vested Property Acts primarily on the affected Hindu households and the "beneficiaries" (mostly grabbers linked with the power structure) during the last forty years, 1965-2006. And based on such analyses attempts have been made to forward feasible solutions thereof. In congruence with this overall objective, the specific objectives set in the article are as follows:

(i) To forward an in-depth political economy analysis of the Enemy Property Act and Vested Property Act.

- (ii) To present a comprehensive analysis of the magnitude, extent, and nature of deprivation and destruction created by these Acts during the last over forty years, 1965-2006. In doing so, emphasis has been shifted from *appearance* of things to *essence* of things (which constitute the 'newness' of this article).
- (iii) To present an in-depth political economic analysis of the impact on the "beneficiaries" – the rent seekers-grabbers- plunderers. Here also, a major shift in analysis has been made, which is related to the essence of grabbers' 'real' identity and their grand alliance with the state and politics.
- (iv) To explore the state of intended changes after the enactment of the Vested Property Repeal (Return) Act 2001 and all subsequent amendments until 2014. Here emphasis has been made on two broad areas, namely- (a) why so many amendments, and (b) what could be the most likely fake of the Vested Property Return Act as well as implementation of the Act.
- (v) To analyse the role played, in the process, by the research community and civil society, and potentials thereof. Here, this is for the first time that an attempt has been made to chalk-out a brief history of civil society movement against the EPA/VPA and a few critical dimensions of that movement.
- (vi) To present an in-depth politico-economic analysis in to the essence of the movement towards resolution of the historical problem created by EPA/VPA and discus the "possibility- impossibility" dilemma.
- (vii)To suggest realistic solutions, if any, in a class society. Here also a major shift has been made as compared to those in the past in terms of preconditions of realizing the suggested solutions.

As to the methodology deployed in the latest study – the 2006 Study – it is pertinent to mention that a panel survey was conducted with 450 affected households in sixteen unions of sixteen sample districts (one union from each sample district), which were surveyed in the 1997 Study. Information from both primary and secondary sources was collected. Primary data were collected from the affected persons, knowledgeable persons, and relevant government officials. As secondary sources, all relevant available literatures were analyzed including various documents (legal and others) on EPA/VPA, population census, land survey, literature on relevant laws, official data from the Bangladesh Bureau of Statistics, and reports in the journals and newspapers. Two types of analysis have been made: (i) Official record based analysis (based on data/information collected

mostly from official *Tahsil* records and records of the district level Vested Property Offices), and (ii) Survey based analysis (data/information collected mostly from household survey). A total of seven different Data Collection Instruments (DCIs) were used, which are: (1) Data Compilation Format I – Listing of all Hindu households in union, (2) Data Compilation Format III – Household and population in union by religion, (3) Data Compilation Format III – Landownership by owners by religion in union, (4) Data Compilation Format IV – Amount of vested land in Union, (5) Household survey questionnaire, (6) Guideline for case study, and (7) Questionnaire for the university students (as proxy for economically well-off segment of Hindu population). In order to understand political, economic and social dimensions of EPA/VPA, a total of five broad groups of variable were covered in the study, including nature and extent of the impacts of EPA/VPA; typology of affected families; evidential aspects of the problems; different actors and their roles; and remedial aspects of the problem to design solution-matrix.

As already stated, this article is an attempt to provide a comprehensive treatise on political economy of the Enemy Property Act and Vested Property Act from the core perspective of Act as a weapon of mass destruction of religious and ethnic minorities in Bangladesh. The treatise comprises of eleven sections. The first section provides an in-depth politico-economic analysis in to the evolution of the EPA/VPA alongwith various relevant dimensions of the Vested Property Return Act and its 'unspoken' limitations. The second section delineates the rationale for the politico-economic research on EPA/VPA alongwith objectives and methodology of three major research works on the subject conducted in the last twenty years (during 1995-2006). Extermination of religious and ethnic minority people (which is termed "un-peopling" in section 3) evident in forced massoutmigration is one of the key impacts of EPA/VPA, which is articulated in the third section. Official record-based analysis of state of destruction and deprivation of Hindu minority is presented in fourth section; and national level estimates of impact of EPA/VPA on land dispossession and associated alienation is analyzed. in the fifth section. The sixth section provides analysis of incidence and extent of. vesting by historical and political time periods which shows politics matters! The survey-based analysis of the destructive impact of EPA/VPA on the affected people is presented in section seven. The section eight turns into the other side of ' the coin – the "grabbers" of enemy and vested properties of the religious and ethnic minorities, and presents the essence of the grabbers-rent seekers' economic, social and political power base. This section is a key to understand the politicoeconomic essence of the grand alliance of the grabbers with the state (including governance agents) and politics; and this is absolutely essential to internalize to devise a real solution matrix. The ninth section presents a brief history of civil society movements towards repealing the Vested Property Act and implementing the Vested Property Return Act. This section raises many pertinent "uncomfortable truth" about limitations of such movement and argues about the necessity for transforming that into "people's movement". All relevant recommendations towards resolution of the destructions emanated due to implementation of EPA/VPA are forwarded in section ten. And finally, section eleven – in conclusion – provides not just a summary in the usual sense of the term, but raises a few critical questions towards understanding the whole issue holistically from a new perspective, and argues the need for a paradigm shift – both in understanding and in designing actions – towards transforming the whole issue from "religion-based perspective" to "class-based perspective", and need to transform the whole battle in to a "battle for justice".

3. "Un-peopling" Hindu Population through Forced Out-migration – Population Census-based Analysis of an Outcome of EPA/VPA

"Unpeopling³" religious and ethnic minorities, using Enemy and/or Vested Property Acts- as a pretext - is a reality beyond slightest possible doubt. This

The concept of "un-people" or "unpeople" is not widely used concept in social, economic, 3 political, historical literature. Therefore, it is necessary here to describe, what is 'un-people', who are 'un-people', and why is the concept (or at least the terminology) of 'un-people' is a useful construct. The term "unpeople" has its origin in the term "unperson". The term "unperson" or "unpersons" was first coined by George Orwell in his dystopian novel "Nineteen Eighty-Four" (Orwell 1949). George Orwell used the term unperson to denote a person who has been "vaporized"; who has not only been killed by the state, but effectively erased from existence; he (Orwell) mentioned further that such a "unperson" is a person who would be written out of existing books, photographs, and articles so that no trace of their existence could be found in the historical record; he (Orwell) wrote "Yet he feels that Syme himself is the sort of person who is in danger of becoming an "unperson", of being vaporized as he knows too much, has read too many books and is too intelligent" (Orwell 1949, Chapter 5). Half a century after George Orwell's concept of "unperson" Noam Chomsky transformed the term "unperson" into "unpeople" or "un-people" to denote those natives, indigenous peoples, and exploited mass people who have been eliminated, exterminated or at least whose land and settlements have been destroyed by imperial societies. People residing outside Europe, the United States and a select few Asian countries had been described by George Orwell as "unperson". As maintained by Noam Chomsky "The world is divided into people like us, and unpeople - everyone else who do not matter. There are parallels with the treatment of indigenous populations of the socalled Anglosphere, the offshoots of England: the United States, Canada, Australia. These are unusual imperial societies in that they didn't just rule the natives, they eliminated them. They took over their land and settlements and virtually exterminated them in most cases. We don't think about them, we don't ask what happened to them in the past. We deny it in fact" (Chomsky and Vltchek 2013, p. x, 4).

process of "unpeopling" of peoples representing religious and ethnic minorities (which is more pronounced and visible with the Hindu minority) has been done using many different means and ways of forcibly grabbing their wealth, resources and properties by the powerful rent seeking class backed by the state and politics serving that class, and thereby, ultimately exterminate, vanish, "effectively erase from existence", and "written out of books" the minority people from their own motherland - the ancestral land. There are many other peculiar ways showing "vanishing" of minority population. Among many such examples one peculiar example is: In reality not vanished but reported as vanished in the official population statistics. This has been termed as "enumeration politics", "demographic politics", "population politics" and "official intentional act to show less than the actual population size" by Barkat, Hussain and Hossain (2011) and Barkat et al. (2010). Here, among many such cases, two examples are worth mentioning, which are as follows: (1) In order for to estimate the actual population size of the religious minority in Bangladesh a survey study was carried out by Barkat, Hussain and Hossain (2011) comparing population of religious minority reported in the Bangladesh Population Census 2001 and the same in the National Voter List, and have found a distinct mismatch, which they termed as "enumeration politics". The study concluded that "the religious minority population in the censuses is undercounted; over 6 per cent of the religious minority population is missing in the last Census (2001)... The reason for such undercounts may be population politics or merely negligence to the minority people or both" (Barkat, Hussain, and Hossain 2011, p. 9-10). (2) "Demographic politics" in the Population Census is clearly evident in the case of enumeration of indigenous peoples in the Chittagong Hill Tracts (CHT) in Bangladesh. A recent study reports that "In the Population Census of 2001, population in 31.3 per cent of the villages (locally known as 'Paras') of CHT were not enumerated ... In 2009, the rural population of CHT according to estimates based on extrapolation of Population Census 2001 was 1.17 million, however, considering the "intentional non-enumerated" villages the same should have been 1.68 million (Barkat et al. 2010, p. 214-215).

Official statistics provide ample indications about the "un-peopling" of Hindu population. This is simply evident in population dynamics showing gradual and unusual decline in the relative size of the Hindu population in total population of Bangladesh since 1961. During the last forty years since 1961, the relative share of the Hindu population has declined from 18.4 per cent of the total population in 1961 to 12.1 per cent in 1981, to 10.5 per cent in 1991, and further down to 9.2 per cent in 2001. So, millions of Hindus are actually "missing" over-the-time.

Considering the rate of "missing Hindus" the approximate share of Hindu population in 2013 would be about 8 per cent (my precise estimate is 7.83 per cent) of the total population of Bangladesh. The relative share of the Hindu population in the sixteen sample districts (of 2006 Study) has declined drastically

 Table 1 : Population distribution of Bangladesh and sixteen sample districts by religion, 1961-2013(%)

Year	Bangladesh			Average of sixteen sample districts (of 2006 Study)		
	Muslim	Hindu	Others	Muslim	Hindu	Others
1961	80.4	18.4	1.1	81.6	17.3	Others
1981	86.6	12.1	1.2	86.6	17.5	1.1
1991	86.3	10.5	1.2	88.0	12.4	1.0
2001	89.7	9.2	12	80.3	11.0	1.0
2013(*)	91.9	7.9	1.2	Not surveyed	10.5	0.9
a				rior surveyed	Not surveyed	Not surveyed

Source: Barkat et al. 2008, p. 62-64. (*) 2013 estimation is done by the author.

from 17.3 per cent in 1961 to 12.4 per cent in 1981, to 11 per cent in 1991, and further down to 10.5 per cent in 2001 - a trend similar to the national one (Table 1).

How serious is this "missing Hindu" phenomenon! Had there been no outmigration, the total Hindu population in Bangladesh in 1971 would have been 11.4 million instead of 9.6 million as reported in the official documents. The Hindu population would have been 14.3 million in 1981 instead of 10.6 million, 16.5 million in 1991 instead of 11.2 million, 19.5 million in 2001 instead of 11.4 million, and 28.7 million in 2013 instead of 12.2 million. Therefore, there were some 1.8 million missing Hindu population during 1964-1971, 1.9 million missing during 1971-1981, 1.6 million missing during 1981-1991, 2.8 million missing during 1991-2001, and 3.2 million missing during 2001-2013. Thus, the estimated "total missing Hindu population" was 11.3 million during 1964-2013, i.e., 230,612 Hindus missing each year. In other words, if out-migration of Hindu population is caused mainly by communal disharmony and associated unrest, resulting from the Enemy/Vested Property Acts, the approximate size of the missing Hindu population would be 632 persons each day during 1964-2013. The approximate size of the missing Hindu population was as high as 705 persons per day during 1964-1971, 521 persons per day during 1971-1981, 438 persons per day during 1981-1991, 767 persons per day during 1991-2001, and 674 persons per day during 2001-2013. If the above estimates are close to reality, then the inference emerges that the Enemy/Vested Property Acts acted as an effective

mechanism for the extermination of the Hindu minority from their motherland, thereby "unpeopling" them, and as such, inhibited the process of social-capital formation in the country, at the least. There are many other destructive consequences and impact of 'un-peopling' the religious and ethnic minorities emanated due to the EPA/VPA, which are discussed and analysed in the subsequent sections.

4. State of Destruction and Deprivation – Official Tahsil Recordbased Analysis

According to the official *Tahsil* records, the average number of Hindu households affected by EPA/VPA in the sample unions was 222, which is 43 per cent of all Hindu households in the unions surveyed. Out of the 222 affected households, 181

Variables	Average of sixteen unions
All Hindu households	520
Vested Hindu households	222
Vested Hindu households - agricultural land	181
Vested Hindu households - homestead land	64
Vested Hindu households -orchard land	8
Vested Hindu households – pond	20
Vested Hindu households - fallow land	5
Vested Hindu households -commercial land	2
Vested Hindu households - religious land	
Vested Hindu households - other land	23

Table 2 : Number of vested households in sixteen sample unions: As on January 2006

Source: Barkat et al. 2008, p. 71-72.

are affected in terms of agricultural land (81 per cent), 64 in terms of homestead land (29 per cent), 20 in terms of pond area (9 per cent), and 8 in terms of orchard land (4 per cent) (Table 2).

Estimates based on *Tahsil* records show an average of 855 acres of land ownership by the Hindu households in each sample union. Out of the average per union of 855 acres of own land of Hindu households, 388 acres (45 per cent of the total land owned) are vested land and the rest 467 acres (55 per cent) not vested. Out of the 388 acres of vested land per union -313 acres (81 per cent) constitute agricultural land, 43 acres (11 per cent) homestead land, 6.8 acres (1.7 per cent) under orchard, 2.7 acres (0.7 per cent) fallow land, 8.6 acres (2.2 per cent) pond area, and 12.4 acres (3.2 per cent) other types of land (Table 3). Estimates based on *Tahsil* records show that the average area of land vested per Hindu household is 75 decimals, and the same per vested Hindu households is 175 decimals.

37	
Variables	Average of sixteen unions
Total land of Hindu households	85.508
Land not vested	46 753
Land vested	38.756
Vested agricultural land	36,750
Vested homestead land	31,338
Vested orchard land	4,308
Vested pond area	675
Vested fallow land	862
Vested commercial land	274
Vested commercial land	55
vested religious land	06
Vested other land	1,239

Table 3 : Amount of vested lands in 16 sample unions (decimal): As on January 2006

Source: Barkat et al. 2008, p. 71-72.

5. Impact of EPA/VPA – National Level Estimates of Destruction and Deprivation

The total number of Hindu households affected by EPA/VPA would be approximately 1.2 million (estimated 1,150,606 households), which is 43 per cent of the total Hindu households in Bangladesh.

Out of the total of 1,150,606 Hindu households affected by EPA/VPA, 938,107 households (81.5 per cent) were dispossessed of agricultural land, 331,706 households (28.8 per cent) of homestead land, 41,463 households (3.6 per cent) of orchard land, 28,480 households (2.5 per cent) of fallow land, 103,658 households (9.0 per cent) of land under pond, 10,366 households (0.9 per cent) of commercial land, 5,183 households (0.5 per cent) of land under religious institutions, and 119,206 households (10.4 per cent) were dispossessed of other land. This estimate implies that, an affected (by EPA/VPA) Hindu household, on average, has been dispossessed of 1.4 types of land properties, and the same for all Hindu households – irrespective of affected or not affected by EPA/VPA – comes to 1.17. It is worth mentioning that this estimate is not about the

dispossession of amount of land due to EPA/VPA, rather this is about the share of households affected and by dispossession of land by types.

Now, it would be appropriate to turn to the issue of loss of amount of land (of various types and purposes) by Hindu households due to EPA/VPA. The total area of land lost by the Hindu households due to EPA/VPA – estimated based on official records – would be 2.01 million acres, which is equivalent to 45 per cent of the total land owned by the Hindu community before dispossession. The total area of land lost by Hindu households would be equivalent to 5.5 per cent of the total land area of Bangladesh. This estimate is based on official record – the actual amount of land area dispossessed due to EPA/VPA, as will be shown later, is much higher.

The pattern of dispossession of total land property by the Hindu households due to EPA/VPA by type of land, as shown in Figure 2, would be as follows: 1.63 million acres of agricultural land (81 per cent of total dispossession), 221,492 acres of homestead land (11 per cent), 34,231 acres of orchard (1.7 per cent), 14,095 acres of fallow land (0.7 per cent), 44,298 acres of pond area (2.2 per

Figure 2 : National level estimates of some dimensions of effect of EPA/VPA on the Hindu households, 1965-2006



Source: Barkat et al. 2008, p. 75.

cent), 1,594 acres of commercial land (0.08 per cent), 420 acres of land under religious institutions (0.02 per cent), and 64,434 acres of other types of land (3.2 per cent).

Assuming the current (Financial Year 2012-2013) average market price of land in the sample areas (Tk. 25,000 per decimal), the total value of the total area of land officially lost by the Hindu households due to EPA/VPA would be about Tk. 5,025 billion (US\$ 62.4 billion), which is equivalent to 48.4 per cent of the Gross Domestic Product of Financial Year 2012-13 (at current market price) or about three times higher than the annual development budget (Tk.1893.3 billion or US \$ 23.5 billion) of Bangladesh⁴.

6. Incidence and Extent of Vesting by Historical and Political Time Periods: Politics Matters!

The intensity of vesting, in terms of both incidence and amount of land dispossessed, varies by historical and political time periods⁵. About 53 per cent of the total incidences of dispossession and 74 per cent of the total land lost took

⁴ In Financial Year (FY) 2012-13, the total Gross Domestic Product of Bangladesh (at current market price) was Tk. 10,380 billion which is equivalent to US \$ 128.8 billion; and the Government's annual development budget was Bd. Tk. 1,893.3 billion which is equivalent to US \$ 23.5 billion with the exchange rate during July 2012-March 2013 being US \$ 1 = Bd. Tk. 80.58. (For details see Bangladesh, Ministry of Finance 2013, p. xvi-xvii).

Analysis by historical and political time periods (shown in Table 4) presented in this section does not necessarily conform 100 per cent to the exact timing of the military rulers or political party in power. It is to mention that in politico-economic analysis of a phenomenon the content and essence of things are much more important and decisive than the form and appearance of those things. However, to understand the dynamics, volatility, fragility and changes in Bangladesh politics it is necessary to present a brief history of forces-in-power and/or partiesin-power since the birth of independent Bangladesh in 1971. The historical chronology of forces or parties-in-power and features indicating political power game since 1971 is as follows (by time and traits): 11 April 1971-12 January 1972 - First Independent Government with Father of the Nation Bangabandhu Sheikh Mujibur Rahman as President, Syed Nazrul Islam as Acting President and Tajuddin Ahmed as Prime Minister; 12 January 1972-25 January 1975 - Father of the Nation Bangabandhu Sheikh Mujibur Rahman as Prime Minister; 25 January 1975-15 August 1975 - Father of the Nation Bangabandhu Sheikh Mujibur Rahman as President (who was brutally assassinated by anti-secular forces using military aimed at establishing autocratic rule, reversal of secular and socialist ideology, and rehabilitation of anti-liberation forces); 15 August 1975 - 6 November 1975 - Khandaker Mostaq Ahmed as president; 6 November 1975 - 21 April 1977 - Abu Sadat Mohammad Sayem as President; 21 April 1977 - 30 May 1981 -Ziaur Rahman, first as Chief Martial Law Administrator and then as President; 30 May 1981-24 March 1982 - Abdus Sattar as President; 24 March 1982-27 March 1982- Hussain Muhammad Ershad as Chief Martial Law Administrator; 27 March 1982-10 December 1983-Ahsanuddin Chowdhury as President; 11 December 1983-6 December 1990 - Hussain Muhammad Ershad,

Historical time period(s)	Political characteristics of the historical time period(s)	Share of total incidents (%)	Share of total land dispossessed (%)
1965-1971 (7 years)	Military autocratic Pakistani rule	53.4	73.6
1972-1975 (4 years)	Post liberation democracy	8.7	7.2
1976-1990 (14 years)	Military autocratic rule and military-guided civil rule	18.4	13.2
1991-1995 (5 years)	Democratic rule (BNP -led) in alliance with anti-secular political forces	8.5	3.6
1996-2001 (5 years)	Democratic rule (Awami League-led)	3.6	0.7
2001-2006 (5 years)	Democratic rule (BNP-led) in alliance with anti -secular political forces	7.5	1.7
1965-2006 (40 years)		100.0	100.0

 Table 4 :
 Share of total incidents and total amount of land dispossessed under EPA/VPA by historical and political time periods, 1965-2006

Source: Prepared by the author based on information in Barkat et al. 2008, p. 83.

place during last six years of Pakistani military-autocratic regime, 1965-71 (Table 4). In Bangladesh, after the military takeover in 1975, the intensity of dispossession due to VPA has accelerated.

The analysis of vesting by historical and political time periods during the four decades between 1965 and 2006 reveals a direct relationship between the incidence-extent of vesting under EPA/VPA and politico-historical nature of the regime (Table 4). In this connection, the following five substantive observations

first as Chief Martial Law Administrator and then as President; 6 December 1990-09 October 1991 – Justice Shahabuddin Ahmed as Chief Advisor (of first) Caretaker Government; 20 March 1991-30 March 1996 – Kheleda Zia as Prime Minister; 30 March 1996-23 June 1996 – Justice Muhammad Habibur Rahman as Chief Advisor of Caretaker Government; 23 June 1996 – 15 July 2001 – Sheikh Hasina as Prime Minister; 15 July 2001-10 October 2001 – Justice Latifur Rahman as Chief Advisor of Caretaker Government; 10 October 2001-29 October 2006 – Khaleda Zia as Prime Minister; 29 October 2006-11 January 2007 – Iajuddin Ahmed, both as President and Chief Advisor of Caretaker Government; 11 January 2007-12 January 2007 – Iajuddin Ahmed as President and Fazlul Haque as Acting Chief Advisor of Caretaker Government; 12 January 2007-6 January 2009-Iajuddin Ahmed as President and Fakhruddin Ahmed as Chief Advisor of Caretaker Government; 6 January 2009 – 6 January 2013 – Sheikh Hasina as Prime Minister; 6 January 2013- till date – Sheikh Hasina as Prime Minister.

are in order. First, out of the last 40 years, it was only last six years of the Pakistani military autocratic rulers (1965-1971) when 53 per cent of the total incidents of dispossession and 74 per cent of the total land lost by the Hindu community due to EVA/VPA took place. This was precisely the most prominent historical time (1965-1971) of unpeopling the Hindu minorities. Second, out of the last 40 years, irrespective of Pakistan or Bangladesh period, if we consider the historical period characterized by pure military autocratic rule (1965-1971) plus military autocratic rule and military guided civil rule (1976-1990) plus "democratic" rule in alliance with (or, to be more correct, guided by) anti-secular religious forces (1991-1995 and 2001-2006) - the total time period comes to 31 years (i.e. 78 per cent of the time between 1965 and 2006) when as high as 87.8 per cent of the total incidences and 92.1 per cent of the total land dispossession of Hindu community due to EPA/VPA took place. Third, even if we consider only the time period after 1971 War of Liberation (i.e., 35 years period between 1972 and 2006), out of the enemy property remaining after the Pakistan regime (1965-1971) - 63.6 per cent of the incidences and about 70.1 per cent of the land dispossession of those Hindu community people affected by VPA took place in 24 years during the period of military autocratic rule and military guided civil rule (1976-1990 and 1991-1995) plus 'democratic' rule in alliance with anti-secular political forces (2001-2006). Fourth, during a 9-year period of democratic rule with relatively secular political environment (1972-1975 and 1996-2001), 12.3 per cent of the total incidents of dispossession and 7.9 per cent of the total land lost by the Hindu community was attributable to the VPA. Fifth, in terms of amount of land lost by an average affected household, it was 276 decimal during military autocratic regime of Pakistan (1965-1971), 108 decimals during military autocratic regime and antisecular regime in Bangladesh (1976-1981, 1982-1990, 1991-1995, 2001-2006), and 129 decimal during relatively secular democratic regime (1972-1975, 1996-2001). All these imply military rule and autocracy matters in enacting laws and Acts towards creation and procreation of anti-people and anti-human political, social and economic environment in perpetuity; and, to the contrary, democracy with humane face matters in ensuring people's well-being. Here it is pertinent to mention that it is important to understand the political economic essence of a law which acted and/or acts as a weapon of mass destruction - and most likely it is more important to understand the reasons, processes and mechanisms as to how does it work and who are the destructors? The destructors - as will be evident in section 8 comprise a triangle of unholy alliance of three forces - the Rent Seekers (grabbers, plunderers), the State, and the Politics; and these rent seekers-grabbers have managed to subjugate the State and politics, in the process.

It is significant to note that even about 8 per cent of total incidents and 2 per cent of total dispossessed land took place during 2001-2006 periods, which is after the 2001 Repeal of the Vested Property Act. This translates in to the fact that, nationally, an estimated 200,687 Hindu households have been affected by the act even after the 2001 Repeal of the VPA, and they lost a total of 52,000 acres of land (equivalent to 156,000 *bighas*). The fact that 7.5 per cent of total incidents and 1.7 per cent of total land dispossession took place between 2001 and 2006 (Table 4) implies that the Vested Property Act has not been actually repealed even after the enactment of the Vested Property Return Act 2001, and the process of vesting is still ongoing.

7. Impact on the Affected Persons – Survey-based Analysis of Real Extent of Destruction

On average, the affected Hindu households owned 602 decimals of land property before dispossession and the current ownership reduced to 270 decimals (Figure 3). The dispossession of 332 decimals (55 per cent of original ownership) can solely be attributed to the outcome of EPA/VPA, because direct loss due to EPA/VPA is 225 decimals (68 per cent of the total dispossession) and indirect loss due to EPA/VPA amounts to 107 decimals (32 per cent of total dispossession), which include 73 decimals of land sold to recover vested property, 28 decimals of land engulfed by others, and 6 decimals of land donated by force.





Source: Prepared by the author based on Barkat et al. 2008.
The author's survey estimates confirm that the average amount of dispossession as estimated on the basis of official records would be 22 per cent lesser than the actual amount ascertained in the survey. According to official *Tahsil* record-based analysis, the average amount of land lost by an affected EPA/VPA household is 175 decimal and according to survey-based analysis it is 225 decimal. This implies that the total amount of Hindu-owned land lost by EPA/VPA would be 2.6 million acres instead of 2.01 million acres estimated based on official *Tahsil* records. The total value of these 2.6 million acres (in current market price of FY 2012-13) would be about Tk.6,500 billion (US \$ 80.76 billion), which is equivalent to 63 per cent of the GDP of Bangladesh for the financial year 2012-13.

Here, it is important to note that not only the Hindu minority but also all other religious minorities and ethnic communities (indigenous peoples) have been target for EPA/VPA- mediated land grabbing. Considering all religious and ethnic communities, my relatively conservative estimates show that the total number of households of all religious minorities and ethnic minorities affected by EPA/VPA would be approximately 1.5 million with population size of 7.5 million (which include about 1.2 million Hindu households with 6 million population) and the total amount of land lost would be over 3.0 million acres (of which 87 per cent on account of Hindu minority)⁶.

As revealed in the survey, about 80 per cent of the affected Hindu households have lost agricultural land; about 62 per cent lost homestead land; and 30 per cent lost other land. The average amount of land vested per household by type is 186

Type of properties	Percentage of households	Mean amount vested (decimal)		
Vested	reported vesting	For each type of property	All vested	
Agricultural land	80.0 (360)	232	186	
Homestead	61.5 (277)	39	24	
Others	30.4 (137)	51	24	
	()	51	16	

Table 5 :	vested by	incidence	and ty	pe of	properties
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Source: Barkat et al. 2008, p. 81.

Note: Figures in the parenthesis indicate number of respondents out of 450 who have reported vesting of specific type of property.

⁶ Author's estimation based on relevant survey information in Barkat et al. 2008; Barkat 2014b; Barkat 2014c; Barkat et al. 2009a; Barkat et al. 2009b; Barkat et al. 2010; Barkat, Zaman and Raihan 2001; and Barkat and Roy 2004. Also, see footnote 1 for the relevant details about the estimation methodology.

decimals of agricultural land, 24 decimals of homestead land and 16 decimals of other land (Table 5). Assuming the current (Year 2013) average market price of land (Tk. 25,000 per decimal), the monetary amount of actual loss due to vested would be about Tk.5.65 million (US \$ 70,117) per affected Hindu household.

It has been revealed that the extent of the incidence of vesting has a direct positive relationship with the amount of original land ownership of the affected household. The less the original land ownership (before being affected by EPA/VPA), the higher is the incidence - or in other words, the weaker the economic condition of a household, the more it became the target of EPA/VPA. This confirms the argument that un-peopling through grabbing the land property of the Hindu community (and all other religious and ethnic minorities) using draconian EPA/VPA worked easily, perfectly, and smoothly in case of the weaker sections having less amount of land ownership, who in the process were forced to join the rank of poor and marginalized people. It is therefore, the whole issue of EPA/VPA has become essentially poor and marginalized people's issue – a truly *class* issue.

The above stated, however, does not necessarily imply that the incidence of vesting is much less pronounced among the well-off Hindus. It has been revealed that more than one-third of the well-off Hindu households have lost their property due to EPA/VPA (the average for all Hindu household being 43 per cent). In addition, more than a half of the well-off households have reported that at least one of their close relatives have also lost land property due to EPA/VPA.

Nationally, out of 1.2 million Hindu households who are affected by EPA/VPA 244,800 are from relatively well-off and they have lost a total of 1.5 million acres of land property due to EPA/VPA. In other words, about 58 per cent of the total amount of vested land property belongs to the original well-off Hindu households. Although the relative amount of land lost due to EPA/VPA is relatively higher among the poor and less - well-off Hindu households than that among the well-off Hindu households— the total amount of land lost is much higher among the well-off Hindu households than that among the relatively less well-off Hindu households. Irrespective of original land ownership status, the economic status of all affected Hindu households has deteriorated — the poor and marginalized became pauper; the middle-class became poor; and the relatively well-off has gone down to join partly with the middle class and partly with the poor.

Death and/or out-migration of one of the legal inheritors are usually used as a pretext for enlistment of properties under the EPA/VPA. In slightly over three-fifths (63 per cent) of the affected households there was at least one of the inheritors either died or out-migrated. These out-migrations and/or deaths of one

of the family members in some of the affected families are mere real-life incidences and in no way should be treated as actual reasons for dispossession of familial property under any law. The real reasons for enlistment of Hindu-owned property under EPA/VPA are manifold and the mechanisms are complex (details see Box 1). In this connection, an indepth analysis shows that various forms of violence, forgery of documents, use of stooges, and unholy alliances of the local rent seeking influential with the government's land administration – all these have played an immense role in the dispossession of properties of the Hindu

Box 1: Reasons for enlistment of property under EPA/VPA

The reasons for enlistment of Hindu-owned proper. ander EPA/VPA are multidimensional and the mechanisms are inhuman, illegal and complex. The two most important actors were the rent-seeking influential locals and the land officials. Following are the seven groups of reasons attributable to the dispossession of property under the EPA/VPA (details can be seen in Barkat et al. 2000 and Barkat et al. 2008):

- 1. Influential locals/self-seekers was proactive in enlisting the property under EPA/VPA. This was done in connivance with the *Tahsil* and Thana Revenue Office. The motive was to take lease of that property after EPA/VPA (reported by 72 per cent).
- 2. Officials of *Tahsil* office and/or Thana Revenue Office themselves were interested in grabbing the property (reported by 46 per cent).
- 3. Death and/or out-migration of one of the members of the Hindu families who had legal right on the property were used as a pretext to enlist the whole property under EPA/VPA (reported by 35 per cent).
- 4. Influential locals/self-seekers engulfed the property by force using various forms of violence as technique: by attacking with lethal weapons, guns, deploying hooligans/ gangsters; by compelling to vacate the house or migrate under threat or continued efforts of frightening the victim (reported by 32 per cent).
- 5. Influential locals/self-seekers occupied the EP/VP land using forge documents. This was also done in connivance with the *Tahsil* and/or Thana Revenue Office (reported by 17 per cent).
- 6. Influential locals/self-seekers allured the sharecroppers to occupy the land, and then themselves become the owners (reported by 7 per cent).
- 7. Property enlisted under EPA/VPA for reasons not known to the owners (reported by 19 per cent).

community under the Enemy/Vested Property Acts (details see a fifty case studies in Barkat et al. 2000, p. 64-433, and ten recent case studies in Barkat et al. 2008, p. 90-92, 121-161).

The Vested Property Act has been a major source of violence and oppression on the Hindu minority in Bangladesh. This situation has not changed even during the

last about twenty-five years of parliamentary "democracy". During the last ten years preceding the 2006 survey, 50 per cent Hindu household reported that they have faced verbal abuse, 33 per cent households faced incidences of theft, and 25 per cent household faced harassment and obstruction in harvesting crops, each. A slightly less than one-fifth of the households reported intimidation at workplace, followed by 16 per cent reporting about physical assault, 14 per cent reporting about destruction of property, 13 per cent reporting about eve-teasing, 12 per cent reporting about various threats, 10 per cent reporting about looting/plundering of property, 12 per cent reporting about obstruction in casting votes in local government election, 27 per cent reporting about obstruction in casting vote in the 2001 Parliamentary Elections, 6 per cent reporting about dacoity/robbery, 5 per cent reporting about obstruction in shopping/business, and 5 per cent reporting about extortions (Barkat et al. 2008, p. 95). Analysis shows that in order for to exterminate religious and ethnic minorities it was not enough to grab their properties using EPA/VPA as a pretext, added to that is all forms of violence.

Comparison of political regime-specific violence against VPA-affected Hindu households shows a sharp rise from an average of 8.7 incidences of various forms of violence per household during the Awami League-led government (1996-2001) to 17.5 such incidences during the BNP-Jamat-led anti-secular four-party alliance government (2001-2006). On average, an EVA/VPA affected household faced 29 incidences of violence during 1996-2006, i.e., 2.6 incidences per household each year. The average number of violence faced in each year during 1996-2001





Source: Author's depiction by political regime based on information contained in Barkat et al. 2008, p. 96-97.

(Awami League period) is 1.7, while it was just double at 3.3 during 2001-2006 (BNP-Jamat-led four-party alliance period). The regime-specific year-wise average number of violence faced by the VPA-affected Hindu households is depicted in Figure 4.

Although a total of 1.2 million Hindu households have lost 2.6 million acres of land, this reflects a partial scenario of the total loss due to EPA/VPA. The exact destructive impact due to EPA/VPA cannot be estimated quantifiably and, more so, cannot be valued in monetary terms. As a matter of fact, the act has created a deprivation trap – a trap of destruction in-perpetuity – among the Hindu community members. This trap reflects a complex totality of the five different broad types of deprivation – powerlessness, vulnerabilis – physical weakness, poverty, and isolation (Figure 5). All specific types of deprivation under each broad type faced by the affected households and their members can be seen in Figure 5. It is important to note that most of these types of deprivation are also applicable for the non-affected (by EPA/VPA) Hindu households – the differences between these two groups (affected vs non-affected) might be only in the degree

Figure 5: Expanded model of deprivation trap of Hindu community



Source: Extended based on Barkat 2003.

of affectedness. These deprivation created due to EPA/VPA is applicable not only for the Hindu minority but also for all other religious minorities including the indigenous peoples in Bangladesh (details see Barkat 2014b). All these deprivations attributable to the Enemy/Vested Property Act, in essence, form a *"cycle of deprivation"*, or, to put it baldly – a *"cycle of deprivation in perpetuity"* for all the religious and ethnic minorities in Bangladesh.

8. The Grabbers – Survey-based Analysis of Impact on the Vulture-Destructors

The issue of "beneficiaries"(!) of enemy and vested properties of religious (mostly Hindu) and ethnic (indigenous peoples) minorities, to put it bluntly, is an issue of land 'grabbing'7. This is one of the core political economic issues of the EPA and VPA. There are many dimensions of this issue - including political, economic, demographic, social, and cultural. The one, and the most crucial dimension lies in the fact that there has been a tendency – both overt and covert - to consciously raise and shape that as a super-communal religious issue - as an issue of Hindus versus Muslim. To put it baldly, both historically and logically. such a consciously driven propaganda is a blatant lie, and arguments forwarded in favour of that are grossly ill-motivated. This propaganda of communalization of the issue of EPA/VPA is done mostly by the grabbers themselves and that in unholy alliance with their political, economic and social agents. In reality, the legal instrument - the EPA/VPA has acted and still keeps acting as a "weapon of mass destruction" aimed at extermination of the religious and ethnic minorities. The argument that EPA/VPA is an issue of Muslim versus Hindu is a blatant lie. This is, among others, simply because of the fact that if we assume that all the grabbers are Muslim (which may not be 100 per cent true) - they will constitute only 0.4 per cent of all Muslim population of Bangladesh (detailed analysis of this aspect of EPA/VPA is presented below).

At this stage, in order to provide an objective and verifiable politico-economic analysis of the issue of grabbing properties of religious and ethnic minorities in Bangladesh using the EPA/VPA as instrument of mass destruction, it would be most appropriate to put forward a theoretical approach (of my own). This theoretical framework is as follows: The grabbing of properties (wealth and assets –immovable and moveable) of the religious minorities (predominantly the

⁷ Henceforth, the two categories, namely 'beneficiary' and 'grabber' will be used synonymously, or categories such as "beneficiaries – grabbers" or "grabbers-beneficiaries" will also be used to mean the same entity.

Hindus) and ethnic minorities (the indigenous peoples) using the Enemy Property Act and/or Vested Property Act is an outcome of a politically and economically conscious unholy alliance of the 'rent seekers' (who themselves does not create wealth rather take wealth away from others) and their subservient state power (with agents of governance) and tailored made politics to serve the purpose. As depicted in Figure 6, this theoretical approach encompasses a triangle of politicoeconomic institutional matrix, whose prime aim is to expedite the process of grabbing wealth of others by the rent seekers using state-sponsored Acts. A more robust essence of the system of grabbing through EPA/VPA is as follows: The structure of the agents of this unholy destructive system of wealth accumulation or taking wealth away from others, and outnumbering and ultimately exterminating them - the weakest section of people in a class society by the rent seekers located in the upper echelon of the economic, social and political class ladder using legal instruments (ordinances, laws, acts, orders etc) devised by the state and implemented by the governance agencies to accelerate the process of such grabbing (for more details about the essence of this conceptual framework see Barkat 2014a).

Figure 6 : Structure of unholy alliance of the rent seekers, politics and state (with governing agents) in grabbing the properties of religious and ethnic minorities using EPA/VPA in Bangladesh: A triangle of politico economic institutional matrix



Rent seekers (grabbers; mostly upper class Muslims)

Empirical studies complemented by many case studies (Barkat et al. 1996; Barkat et al. 2000; Barkat et al. 2008) amply substantiates this politico-economic approach in understanding the land grabbing of religious and ethnic minorities by the rent seekers aided unquestionably by the state and politics. The triangle of politico-economic institutional matrix, shown in Figure 6, reveals that the

affected-deprived-victims of EPA/VPA – the Hindus (and all other religious and ethnic minorities) are located at the centre, who are surrounded by three evil forces, namely (1) the Rent Seekers – who never create wealth rather take wealth away from others - the weaker sections of class society; who destroy wealth, and who are responsible for national disintegration, disharmony and distrust, (2) the State, which, as a subjugated entity of the rent seekers, promulgates and nourishes discriminatory laws – contradicting fundamental citizenry rights enshrined in the Constitution; and paves the way for the agents of governance to act against the sovereignty of those citizens who are minority in numbers (in terms of religions and ethnicity), to design and perform governance activities aiming at curtailing the substantive freedoms that minority people shall enjoy, and to perpetuate an environment of mis-governance and to misuse power discriminatory to the minorities, which ultimately serves the purpose of the rent seekers in their grabbing the wealth away from the weaker section of the people, especially the people belonging to religious and ethnic minorities; and (3) the Politics, which is nothing but an integral part of the superstructure whose nature and purpose depend on the essence of the basic structure determined by the nature of the predominant mode of production, which, in turn, depends on the essence of the prevailing system of ownership in the means of production. Since the state alongwith the governance agents purports to serve the rent seekers' interest of grabbing the properties of the religious and ethnic minorities using EPA/VPA how come politics be not in line? The dominant politics is bound to follow the pathway of the nature of state, and the 'mainstream' (dominant) political parties and forces are destined to serve the interest of the grabbers – the rent seekers: morality-ethics-social justice should be a much talked-about but "operationally" meaningless concepts to them; due to their interest in vote-banks they will continue to use religion and religiosity as political tools for mass destruction; they will show 'apparent sympathy' to the Hindu minority (not just because they have 10 per cent votes but because the Hindu voter turnover is high at 90 per cent, if free, fair and fare-free elections are held); they will make huge noise to fight for everything except to ensure liberty and substantive freedom for the religious and ethnic minorities; and finally, under the historically formed exploitation based crony capitalism under the hegemonic leadership of imperialism (with USA at the epicenter) and that within an unjust "global order in chaos" - the predominant political parties are bound to serve the upper class of the society and economy upholding the principle "Of the 1%, for the 1%, by the 1%".

After having the above-stated details of conceptual analysis, it would be pertinent to put forward a strong argument that the common Muslims were never communal, which is evident from the fact that, compared to the predominant Muslim population of Bangladesh (90 per cent of the total population), only a few were involved in the process of grabbing the properties of the Hindus affected by EPA/VPA. According to our estimate, a total of 536,950 Muslims (i.e., at best 0.4 per cent of all Muslims) are the direct "beneficiaries" or the grabbers of 2.6 million acres of properties of 1,150,606 Hindu households affected by EPA/VPA.

The sample of 450 affected persons mentioned a total of 210 different persons as direct grabbers. In terms of economic status, whereas in the past, the highest proportion of the grabbers (39 per cent) was in the medium landowner category followed by small landowners (35 per cent), currently the highest proportion of them (57 per cent) falls in the rich landowner category.

Economic status (Land ownership group)	Past (at the time of occupying property)	Present (2006)
Rich farmer	21.0	57.1
Medium farmer	39.0	41.9
Small farmer	35.2	1.0
Landless	4.8	an annung an aite dh'an ann
Total	100.0	100.0

Table 6 : Economic status of the grabbers – past and present (%)

Source: Barkat et al. 2008, p. 103.

Note: Economic status of the beneficiaries has been defined as follows: Rich farmer = owning more than 7.5 acres of cultivable land, medium farmer = owning 5 -7.5 acres of cultivable land, small farmer = owning 2.5 -5 acres of cultivable land, and landless farmer = owning less than 2.5 acres of cultivable land. Landless farmers include those who are absolute landless, functional landless and marginal farmers.

The percentage of grabbers in the small landowner category has drastically declined from 35 per cent in the past to only 1 per cent at present (Table 6). Thus, all the beneficiaries have benefited much by grabbing lands of the affected Hindu families. Based on the analysis of changes in the economic status of the grabbers – beneficiaries of EPA/VPA, at least two substantive conclusions can be drawn: (i) grabbing of land from the Hindus using EPA/VPA has been instrumental in concentration of land among few grabbers, and (ii) most grabbers were relatively well-off at the time of grabbing.

The social status of the grabbers – in terms of their positions in the local power structure – has improved much. At the time of occupying enemy-vested property, most grabbers (81 per cent) belonged to the village *Matbar* category. Now the

Social position in the	Past (at the time of	Present
local power structure	occupying property)	(2006)
Village Matbar	81.4	93.8
Union Council Chairman	2.9	3.3
Union Council Member	6.2	2.9
Others (not having clear social identity)	9.5	0
Total	100.0	100.0

Table 7 : Social status of the grabbers – past and present (%)

Source: Barkat et al. 2008, p. 103.

proportion of grabbers in the village *Matbar* category has increased to 94 per cent (Table 7). Beneficiaries who did not have any identifiable (strong) social standing in the past have now been able to establish their strong and stable status in the society through occupying property vested under EPA/VPA. Thus, the Enemy/Vested Property Act acted as a mechanism through which the grabbers were able to not only to enhance their economic strengths, but also to strengthen their social and political standing in the local community.

Grabber's political affiliation is important, and at times crucial, because it requires enormous social strength and influence and a wide access to the power structure for both occupying and retention of occupation over such properties (Barkat et al. 2008). As such, in understanding the changing pattern of political affiliation of the grabbers, relevant information about their political affiliations were obtained for two periods: at the time of occupying the property (meaning any time between 1965 and 2006) and at present (meaning the year 2006). It is methodologically important to note that in order to ensure highest possible extent of accuracy about the political affiliations of the grabbers, an operational definition of political affiliation has been worked out and adopted in Barkat et al. (2008) study [details see Box 2].

It is interesting to note that, generally, the party-in-power and/or political forces upholding religious sentiments is the natural political affiliation of the grabbersbeneficiaries⁸. Whereas the highest proportion of the beneficiaries belonged to the Muslim League (37 per cent) in the past (at the time of grabbing property), at present the highest proportion of such individuals belong to BNP (45 per cent), followed by Awami League (31 per cent), Jamat-e-Islami (8 per cent), and Jatiyo

⁸ The party-in-power of Bangladesh in 1995 (20 March 1991-30 March 1996) was BNP, in 1997 (23 June 1996-15 July 2001) was Awami League, and in 2006 (10 October 2001-29 October 2006) was BNP-Jamat-e-Islami anti-secular four-party alliance.

Box 2: Operational definition of "political affiliation"

Identifying political affiliation of a person in the context of Bangladesh is not easy. In the present study, either of the following three criteria have been used to ascertain the political affiliation of the direct beneficiaries of EPA/VPA:

- (i) Holding membership in the formal committee of a political party. Here "committee" means any committee between centre (central committee) and grassroots (unit level, village, union committee), and/or any sub-committee, and/or affiliated body of the specific political party, and/or alike.
- (ii) Activist of a political party. Here 'activist' means anybody involved in the activities of a specific political party irrespective of level of activism and frequency of participation.
- (iii) Political affiliation identified by knowledgeable persons in the village, such as school teachers, members of other political parties, and other civil society members. This category of persons having political identities includes those who, officially, do not belong to any political party but knowledgeable people around associate that person with specific political party based on the attitude, behaviour and lifestyle of that person. This category also includes those who disproportionately participate in events organized by a specific political party. This category also means persons who may not formally preach ideas/ideologies of a specific political party, which may be based on many elements including personal and/or social interactions with the person.

Party (6 per cent). According to the 1995 Study, 72 per cent of the beneficiaries belonged to BNP – the then party-in-power (Table 8).

Nationally, an estimated 536,950 grabbers have been occupying a total of 2.6 million acres of vested land. The 2006 scenario of political affiliation of the

Political affiliation	Past (at the time of occupying property)	1995 (Barkat et al.1997a)	1997 (Barkat et al. 2000)	2006 (Barkat et al. 200
Muslim League (ML)	36.7	1.2	1.9	0.5
Awami League (AL)	20.0	11.1	44.2	31.4
Bangladesh Nationalist Party (BNP)	22.4	71.6	31.7	45.2
Jatiyo Party (JP)	7.1	4.9	5.8	6.2
Jamat-e-Islami (JI)	1.9	3.7	4.8	8.1
Other parties	3.3	1.2	1.0	0.5
Affiliation difficult to ascertain	8.6	6.2	10.6	8.1
Total	100.0	100.0	100.0	100.0

Table 8 : Political affiliation of the grabbers at different time periods (%)

Source: Barkat et al. 2008, p. 108.

grabbers of enemy/vested property by share of total land grabbed is significant in understanding the political economy of EPA/VPA. Considering the 2006 scenario unchanged out of 2.6 million acres, 67 per cent of vested land are occupied by those affiliated with BNP, 14 per cent of vested land are occupied by those affiliated with Awami League, 9 per cent of vested land are occupied by those affiliated with Jamat-e-Islami, 7 per cent of vested land are occupied by those affiliated with Jatiyo Party, 0.7 per cent of vested land are occupied by those affiliated with other parties, 0.07 per cent of vested land are occupied by those affiliated with Muslim League and 3 per cent are occupied by those whose political affiliations could not be ascertained (Figure 6). Both in terms of incidences and share in grabbing, the alignment of the grabbers-beneficiaries with the ruling party are obvious as they need political protection for occupying others' property or depriving others (especially religious and ethnic minorities) from their basic citizenship rights. The fact that about three-fifths of the grabbers have alignment with the political parties upholding Muslim religious sentiments (BNP, Jamat Islami, Jatiyo Party, and Muslim League) is also obvious under the present socio-political milieu of Bangladesh. All the above-stated analysis amply proves the validity of the politicoeconomic theoretical framework of grabbing the properties of the religious and ethnic minorities using legal instruments by the rent seekers in a grand unholy alliance with state and dominant politics in a class society. The fact that the matter goes unrecognized by the existing academia, politics and historians would be



Figure 6: Amount of vested land with grabbers by grabber's political affiliation, 2006

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equivalent to accept the principle of "choosing not to see the uncomfortable truth" of oppression against the minority people using state-sponsored legal instruments. At the same time, recognition of a "convenient part" of the story by some is just a matter of "selective blindness". Both are equivalent to intellectual forgery and crime. And concealing such historical crime is a much more crime than the crime itself !

9. A Brief History of Civil Society Response – From Research and Citizen's Resistance to National Coordination Cell for Implementation of Vested Property Return Act

Vested Property Act - a continuation of the Enemy Property Act is one of the most tyrannical acts having serious impact on all five substantive types of freedom9 of all the religious and ethnic minority communities in Bangladesh. Although the act exists since 1965, no significant actions were taken to repeal the same even after the glorious War of Independence in 1971. The subject for the politicians was thought to be sensitive in a Muslim-dominated country; the civil society was not adequately aware and consolidated enough to raise the issue in public domain widely; the research community, even the progressive ones did not dare to touch it most probably due to the potential threats, attacks, insecurity, and methodological complexity. However, to uphold the historical truth pertaining to the research part of the Enemy/Vested Property Act, it is necessary to put on record that during the late 1980s and early 1.990s late Justice Debesh Bhattacharya, late Justice KM Sobhan, late Professor Rangalal Sen, and late Advocate MK Rakshit contributed much in understanding mostly the legal dimensions of EPA/VPA, in which there was a distinct dearth of empirical substantiation of socio-economic consequences and impacts of the laws (details see, Bhattacharya 1991 and 1994, Rakshit 1979 and 1991, Sobhan 1994, Sen 1994).

There was no visible resistance or any protest organized against the existence of the draconian Vested Property Act until 1979¹⁰, except occasional protest from

⁹ These include (1) political freedom, (2) economic opportunities, (3) social facilities, (4) transparency guarantee, and (5) protective security (for details see Sen 1999).
¹⁰ Continuation of the Frame Protective Security (10 details see Sen 1999).

¹⁰ Continuation of the Enemy Property Act as Vested Property Act has been and continues to be resented by the people not only by those who have been affected but by the civil society as well. There was unorganized protests and pressure during the early seventies mostly on individual level and at the level of accessing political leadership of the ruling party. The political situation took a fundamental turn after tragic killing of the Father of the Nation Bangabandhu Sheikh Mujibur Rahman and unconstitutional military take over on 15 August 1975. So for obvious reason there was no visible resistance or any protest organized against the existence of the Vested Property Act until 1979.

some left wing political parties and social movements. A Citizen's Resistance Committee for repealing the Vested Property Act was constituted in 1979¹¹, which was led by late Justice Debesh Bhattacharya and late Advocate Aminul Haque. In the same year, late Advocate Sudhangsu Shekhar Haldar, a member of the then Parliament, moved a private member's bill seeking repeal of the Vested Property Act but of no outcome *per se*. Among other parliamentarians, Mr. Rashed Khan Menon and Mr. Shahjahan Siraj made statements on the issue. Hindu-Bouddha-Christian *Oikya Parishad* carried this movement since it was formed in 1988.

The involvement of some non-government organizations (NGOs) in creating citizens' awareness and campaign against this tyrannical and discriminatory law gave the movement a new dimension. Guided by Mr. Shamsul Huda, the then Programme Coordinator of the NGOs Coordination Council for Land Reform Programme, NGOs initiated in 1988 a low profiled campaign against tyranny of the Vested Property Act alongside its main campaign for distribution of Khas Land among landless¹². In 1994, the Association for Land Reform and Development (ALRD) under the joint leadership of Mr. Saidur Rahman, Ms. Khushi Kabir and Mr. Shamsul Huda took unanimous decision to initiate under the research-leadership of the author of this article (Abul Barkat) to conduct the first ever small scale research study of exploratory nature with financial support

¹¹ The Citizens Resistance Committee for repealing Vested Property Act is known as "Council for Resistance against Enemy Property Act" (*Satru Sampatti Ain Protirodh Parishad*). This citizens committee was headed by two eminent citizens of the country, late Justice Debesh Bhattacharya – a retired Judge of the Appellate Division of the Bangladesh Supreme Court and late Advocate Aminul Haque, a senior and well-known advocate of the Bangladesh Supreme Court (former Attorney General). Front ranking politicians belonging to different progressive and secular political parties and some leading intellectuals like late Professor Ahmed Sharif of University of Dhaka were actively involved in forming and running the Citizen's Resistance Committee.

¹² Although NGOs have been very active on poverty and general human rights related issues since seventies, they had no visible role on Vested Property Act until late eighties. In 1988, the NGOs Coordination Council for Land Reform Programme – a Coalition of NGOs based in OXFAM initiated some campaign on tyranny of Vested Property Act alongside its main campaign for distribution of khas land among landless. This campaign was continued and further strengthened when Association for Land Reform and Development (ALRD) started functioning as a formally registered NGO network for land rights and agrarian reforms in 1991. Mr. Shamsul Huda being the founding Executive Director of ALRD and the same NGO leaders who created NGO Coordination Council for Land Reform, staying in the Executive Board of ALRD with their background of connections and knowledge made a difference. Their like-mindedness helped decisively in bringing in the issue as a priority of ALRD. In 1994, ALRD initiated a study with financial support of The PRIP-Trust steered by its Executive Director Ms. Aroma Dutta, granddaughter of a renowned senior-most politician of the country who happens to be a great martyr of the liberation war in 1971, late Dhirendra Nath Datta.

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of PRIP-Trust. The study outcome, in a report form, was completed by the end of 1995 and released on 1996 (Barkat et al. 1996). This study report, first of its kind on the economic and social impact of EPA/VPA was published in a book form titled "Political Economy of Vested Property Act on Rural Bangladesh: An Exploratory Study" (Barkat et al. 1997a). That provided a sound empirical and logical basis on which civil society could build on their strategies for wider and effective campaign.

It took the social science research community a long 30-year time-period since the enactment of the Enemy Property Act to just to undertake a research study to understand the multidimensional impacts of EPA/VPA. As mentioned above such a study was launched in 1995. That was a small scale exploratory study conducted by Barkat-team and published by the Association for Land Reform and Development in 1997 (Barkat et al. 1997a). Based on the revealing and thought-provoking findings of the 1995 Study, it was felt necessary to conduct a larger and more robust nationally representative study, which was launched in 1996 and completed by the end of 1997 (Barkat et al. 1997), and published in the year 2000 as an over 500 pages book comprising of 50 different case studies and an in-depth empirical analysis (Barkat et al. 2000).

The 1995 Study has attempted to explore various dimensions of the socioeconomic sufferings of the affected people in the rural areas of Bangladesh. In addition, this study described the current status of both the affected people and the grabbers, tried to categorize the dispossession mechanism, sought to find out the legal and administrative aspects of EPA/VPA and other related acts and thus has formulated a basis to determine the magnitude of the problem created by the EPA/VPA within the limitation of a small sample size emphasizing rural areas of Bangladesh. Based on the analysis of the causes and consequences of the Vested Property Act, authors concluded that "the process of communal disharmony, disruption and disintegration started with the evil spirited "two nation theory" and was further institutionalized through the enactment of the Enemy Property Act by the Pakistani regime during the 1965 Indo-Pak war. This law persists even today under a new nomenclature, the Vested Property Act, though the content of the law remains basically unchanged. An exploration on the subject shows that mass outmigration, dispossession of huge amounts of land and other assets, breaking of family ties, loss of human potential, disruption in social capital formation, and the formation of parasitic vested interest groups are some of the major impacts" (Barkat et al. 1997a). This 1995 Study, in addition to above stated, after an indepth politico-economic scrutiny of the legal aspects of the Law of Vested (Enemy) Properties, discovered two Paradoxes which reads: "Paradox One:

Vesting of properties continue even in the absence of legal basis. Paradox Two: Bangladesh is at War with India since 1965" (Barkat et al. 1997a, p. 45-47).

It is worthwhile to mention that in his reviewing the 1995 Study, the then Advisor, Ministry of Law, Justice and Parliamentary Affairs of the Caretaker Government, late Barrister Syed Ishtiq Ahmed wrote: "The findings and analysis presented will have far-reaching impact on the land laws in Bangladesh" (Ahmed 1996). The 1995 Study has generated an idea of developing a general as well as case-specific solution matrix. These ideas were also reiterated and further substantiated by the knowledgeable persons participating at the national dissemination seminar on "Impact of VPA" held in Dhaka on April 13, 1996, and in the series of workshops organized by the Association of Land Reform and Development during 1996-1997.

The first study (1995) conducted by Barkat-team has clearly revealed the importance and urgency of undertaking an in-depth study on the same broad theme, however, by including many of the unexplored issues raised in the first study, and study on a much wider scale. Depth and intensity of the problem already identified, lead to the idea of exploring the issues further.

The second study in the series titled "Vested Property Act: Towards a Feasible Solution", launched in 1996 and conducted again by Barkat-team, was directed with the aim to attain more in terms of our knowledge-base about the subject and to identify feasible solutions. This second study was published in 2000 with a self-explanatory title "An Inquiry into Causes and Consequences of Deprivation of Hindu Minorities in Bangladesh through the Vested Property Act: Framework for a Realistic Solution" (Barkat et al. 2000). The third study in the series was 2006 Study conducted by Barkat-team after the enactment of the Vested Property Repeal (Return) Act 2001. The 2006 Study outcome was published on 2008 as a book titled "Deprivation of Hindu Minority in Bangladesh: Living with Vested Property" (Barkat et al. 2008). The preliminary findings of this study were disseminated in 2007 which was instrumental in organizing large scale formal advocacy movement towards implementation of the Vested Property Repeal Act 2001.

In proactively raising the issue of Enemy Property Act (EPA) and Vested Property Act (VPA) as unconstitutional, anti-secular, anti-minority, anti-natural justice, anti-people and inhuman – the historical truth is that, the "justice system" during the Father of the Nation Bangabandhu Sheikh Mujibur Rahman was ahead of others by declaring the VPA as illegal and dead Act on 23 March 1974. The judiciary was then followed by some progressive politicians, political parties

upholding the principle of secularism, citizens resistance committee named "Council for Resistance Against Enemy Property Act" (CRAEPA), two-three NGOs, organization purports to support the cause of the affected people under the banner of Bangladesh Hindu-Bouddha- Christian Oikyo Parishad, and then after some time by a few progressive NGOs (in a country globally known for frontrunner in NGO activities with microcredit programme, among other). These NGOs, initially, in late 1990s worked in isolation doing mainly small scale stage setting advocacy about the need for repealing the Vested Property Act. Then, after having equipped with research-based hard empirical evidences (primarily from the above stated three research works of Barkat et al. 1997, 2000, 2008) started organizing joint meetings (to the best of my knowledge the process started in 2007) of nine NGOs13 (including one research organization) aiming at mobilizing public opinion in favour of the legitimate demands of the minority victims, their inheritors and successors-in-interest.

This group of nine NGOs together chalked out a tentative campaign programme to delve deeper in to the arena of nationwide advocacy on the issue of repealing the Vested Property Act and devising means and ways to return back the properties of religious minorities grabbed using EPA/VPA. During 2007-2010, this collaboration of nine organizations was still at the embryonic stage. Ultimately, in 2011, these nine organizations formed one unique formal body with the name "Citizens National Coordination Cell for Implementation of Vested Property Return Act" (CNCC-IVPRA; Orpito Sammpotti Protarpan Ain Bastobayan Jatio Nagorik Sammonnoy Cell). This newly formed citizens coordination cell, since inception in 2011, started performing - based on empirical evidences - logically comparatively aggressive actions and activities towards changing and amending those articles and sections containing in the Vested Property Return Act 2001 which are communal, anti-secular, anti-minority, antiaffected people's interest, pro-grabbers' and pro-vested groups' interest. The CNCC-IVPRA undertook planned efforts towards reaching their aim of supporting the cause of the EPA/VPA affected community. In doing so, they have performed the following, among other endeavors: started meeting affected people; organized public hearings; organized press conferences as and when needed; organized seminar, conference, roundtable, workshop in capital Dhaka and

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These 9 organizations are (alphabetically): Ain-o-Shalish Kendra (ASK), Association for Land Reform and Development (ALRD), Bangladesh Hindu-Bouddha-Christian Oikyo Parishad, Bangladesh Legal Aid Services Trust (BLAST), Bangladesh Puja Udjapan Parishad, Human Development Research Centre (HDRC), Nijera Kori, Orpita Sampatti Ain Protirodh Andolon, and Sammilito Samajik Andolan.

outside Dhaka; organized conscientization efforts of various types; published many posters, leaflets, booklets for opinion building and advocacy; organized meeting with lawyers and activists; organized other NGOs in their network for the cause; organized many meetings with the relevant caucases in the National Parliament; organized meetings and seminars involving parliamentarians and members of relevant Standing Committees (Land, Law etc.); organized meetings with relevant Ministers; organized citizens rally and human chain on the issue in many parts of the country; produced useful booklets for those who are affected by EPA/VPA but unaware of how to get back their lost property through legal process; handing over memorandum of demands to the relevant Ministers, to the Hon'ble Speaker of the National Parliament, and to the Hon'ble Prime Minister. This long list of work accomplished by the said citizens group is indicative of their relative seriousness and commitment towards implementation of the Vested Property Return Act.

This organization - the CNCC-IVPRA has so far done a well-intended job in a relatively short time span (2-3 years). However, there is no room for complacency, because people-at-large are almost unaware about the issue and they must be involved in the process. But how and when that will be materialized? Here, it is my own (informed!) understanding that unless people-at-large are proactively involved - the whole process is bound to slow down and even may prematurely die. It is absolutely needed to turn the issue of Vested Property Return Act into a social movement, which needs more innovation in terms of ideas, tactics, strategies, and engagement. There is nothing to be complacent, because ultimately all affected persons (victims of EPA/VPA) must get back their lawful property lost due to EPA/VPA. Here also, my commonsense (which is very un-common!) question is how and when the affected people will get full justice and get back their properties? On this, I am skeptically optimist: Optimist, because we are talking about a historically unjust misdeed which is not only anti-constitutional but also anti-people, inherently communal, anti-secular, anti-fundamental and anti-basic human rights. I am skeptic, because we are talking about the most scarce source of power i.e., LAND and also the grabbers of those land and property who are not just rent seekers but also runs the show of governance and dominant politics. Here also, tactical and strategically innovative ideas need to be worked out and pursued keeping mass people engaged in the process. In realizing the optimistic scenario, intelligently designed conscientization struggle keeping people proactively involved has no alternative (for more analysis on this see, section 11).

10. Destruction and Deprivation of Religious Minorities due to EPA/VPA – Key Recommendations towards Resolution

Based on the analyses of the whole issue of un-peopling and deprivation of the religious minorities due to EPA/VPA, and based on the discussions with all relevant stakeholders, a list containing some specific, achievable and realistic solutions is presented below. In designing the proposed solutions all recent development towards the solutions has been given due consideration, which include the Vested Property Repeal (Return) Act 2001, and its subsequent six amendments (2002, 2011, 2012, and 2013). Due to complex nature of the whole problem, it should be mentioned that some of the solutions need further investigation and examination by relevant experts including the social thinkers, politicians, legal experts, human rights activists, and the affected persons. The proposed solutions grouped into five interrelated broad categories have been worked out keeping in mind intra-category prioritization. This does not necessarily imply that this prioritization is a water tight compartment. Depending on the nature of problem and time the priority may change. The recommended solutions grouped in 5 broad categories are presented below:

Category 1 : Related to Vested Property Return Act 2001 and

subsequent relevant Amendments; implementation issues

- 1. All-out efforts should be continued to identify and accordingly change the provisions in the Vested Property Return Act 2001 and its subsequent amendments including the implementation modalities of the Act which are contradictory to the spirit of the law to return the properties to the affected owners and their lawful inheritors or successor-in-interest. In accomplishing this and in obtaining suggestions for improvement of the law towards making it more effective and efficacious – seeking impartial opinion of the civil society members, concerned expert lawyers, human rights and land rights experts and activists, and most importantly, the effected persons should be given topmost priority.
- 2. All properties listed as vested after 23 March 1974 should be omitted from the Vested Property (VP) List as the Appellate Division of the Supreme Court has declared all vested properties enlisted after that date to be illegal as because the law of enemy property became a dead law since that date. And those who were involved in the process of enlisting properties as vested after 23 March 1974 should be brought to task for committing contempt to the highest court of the country.

- 3. All properties vested after the declaration of the Vested Property Repeal (Return) Act 2001 and included in the gazette of vested property should be declared totally unlawful and be returned back immediately to the affected owners from whom the properties were taken as vested property, and those who have engulfed such properties must be exemplary punished.
- 4. The abatement clause (Section 13) of the Vested Property Return Act should have a saving sub-clause to protect the legal rights of the affected persons with regard to cases already disposed of or decreed by competent courts or appeals pending with higher courts.
- 5. Notwithstanding the existing inheritance law of Hindu community and other religious and ethnic minorities the female heirs or co-sharers of the vested properties should be treated as legal claimants and equal as males and get priority in disposing of any case pending with the Vested Property Tribunal, provided the female heir(s) is (are) citizen(s) of Bangladesh.
- 6. The existing tribunals formed for the resolution of the vested property return purposes shall be made more active and effective, and to be provided with human and financial resources, including necessary competent manpower.
- 7. This is due to the increasing number of vested cases around 500,000 cases have already been filed it is becoming difficult to dispose-off cases within stipulated time. Therefore, it is suggested due to increasing number and complexity of cases to increase both the number of tribunals and the number of knowledgeable and committed judges in the tribunals.
- Vested property having no legal claimant should be utilized by the government for the purpose of human development, especially for the accelerated development of the minority communities – both religious and ethnic.

Category 2 : Related to listing of vested property and publication of gazette

1. All activities related to identification and enlistment of any property as vested should be banned immediately and no further gazette of vested property should be published. In this regard, an official declaration in the mass media should be the immediate action of the government.

- 2. All illegal revised lists and gazettes which are already published or awaiting publication have to be declared void.
- 3. All properties listed as vested in the new list violating the Section 9(6) of the Vested Property Return Act 2001 are illegal, and therefore be discarded or excluded from the list.
- 4. The 'Schedule B' (*Kha Tafsil* or *Kha List*) is illegal. Reportedly, illmotived efforts are there to include properties of *Kha List* into *Ka List*. This should be resisted at any cost and declared ban by the government.
- 5. A separate list may be prepared and published by the government for those properties of the minority communities which were brought under the Enemy Property Act during the period between 6 September 1965 and 16 February 1969 (A Census List was prepared in 1966-67 which was pencilled not inked; in 1987-88 another list was prepared which is inked).

Category 3 : Related to assigning priority in returning back vested property

- 1. All enemy and vested property should be given back to the lawful owners and/or to their legal inheritors and/or to their successors-in-interest. However, in the process, if need be, priority should be given to the following categories
 - (a) Those families in which almost all the legal inheritors are permanently residing in Bangladesh.
 - (b) The affected female-headed households.
 - (c) Those cases whereby the property is grabbed mainly by the *Tahsilders* and other land administration officials.
 - (d) The vested properties, which are illegally occupied by others without leasing-in from the government.
 - (e) Homestead land (about 62 per cent of the total incidences and about only 39 decimals of dispossession per household in this category) should be un-vested. Implementation of this may be not easy, however, this will resolve shelter problem of 62 per cent of the affected households.
 - (f) Those who were small landowners (who owned equals to or less than 300 decimals before EPA/VPA), and who in the process of EPA/VPA have become pauperized and marginalized. This recommendation, at first glance, may appear to be difficult to implement, but this alone

will solve 47 per cent of the problem in terms of number of vested households, and 14 per cent of the problem in terms of amount of total vested land.

- 2. In absence of the major shareholders, the legal co-sharer's right to leasein the whole property should be ensured until the final settlement is accomplished.
- There shall be no new leasing of any vested property by Deputy Commissioner or District Magistrate except renewing the old leases of vested property subject to final disposal of the property concerned by the tribunals or appeal tribunals or higher court.
- 4. All 99-year leasing-out of vested properties should be declared null and void and the ownership rights of the original owners or their inheritors or successors-in-interest should be established if they are the *bona fide* citizens of Bangladesh.

Category 4 : Related to active participation of civil society

- 1. The government shall hold regular (may be monthly and/or as and when necessary) meeting with the "National Coordination Cell for Implementation of Vested Property Return Act" the most relevant and proactive civil society body, so far, working on this nationally vital historical issue.
- 2. All relevant civil society bodies including carefully chosen media¹⁴ shall be made proactive in the following areas pertaining to the expedition

¹⁴ Media matters! This is more so when the question comes to choose a media in the struggle to fight injustice, when now-a-days most media are not unpeople-friendly. Most of the Western media and their subservient in the developing countries are good in "colonizing people's mind and mind of the perpetrators". They are experts in dis/misinformation propaganda and media terrorism; media has high level of expertise in promoting "selective blindness"; they rarely talk about "uncomfortable truth" (details about role of media propaganda in support of Western imperialism, see Chomsky and Vltchek 2013, p. x, xi, 9-11, 13, 28). Here a few more substantive facts on media having historical relevance would be useful to know and internalize. This is due to the fact that media – mass media including electronic and print and all e-media including internet, twitter, websites, facebook, and so on serves specific purpose of specific interest group in specific time. An objective and truthful account of the essence of the propaganda role of Western media is essential for our understanding how are world has been controlled and governed, as well as to know how the media "manufactures" public opinion, ideology and perception. Western media - developed through a long process - is a complex and "sophisticated" (media) propaganda system aimed ultimately at serving the interests of their masters - the Western imperialism - by way of masking the truth ("under-carpeting truth") through deliberately disseminating wrong information, distorted information, partial

implementation of the Vested Property Return Act: review and identification of practical loopholes in returning back the vested properties to its lawful owners and suggest remedial measures to the competent authorities and follow-it up; provide voluntary legal support to the affected persons; form nation-wide network of secular people and non-state organization as "Friends of EP/VP Affected People"; conduct relevant advocacy efforts using all possible means and ways; organize local community and form local support group and watch dog mechanisms to uphold the lawful rights in getting back the properties by the affected people.

Category 5: Related to punishment of grabbers-rent seekers, illegal occupants and rent seeking officials

- 1. The government officials (especially those in the land-related offices) who were involved in vesting properties of the affected persons after the enactment of Vested Property Repeal (Return) Act 2001; those who were involved in the process of enlisting properties as vested after 23 March 1974 (i.e., after the Supreme Court's Appellate Division's declaration of such act as illegal), and those who have grabbed those properties shall be exemplary punished.
- Official circulars for the quick supply of Khatian, certificate, and other land-related documents to the victims should be sent to the relevant land and sub-registry offices. This circular shall mention the nature of award for good work and heavy punishment for bribe and other forms of corruption.

information, over information, distorted information, mis-information, tight lipped gesture, determined disinformation campaign against "uncomfortable truth" and ideological manipulation. The following excerpts, drawn from Noam Chomsky and Andre Vltchek (2013), are absolutely worth in understanding the revealing reality of Western media and the essence of its propaganda role (*the question forms are mine*): (1) How many people the Belgian King Leopold II killed in Congo? "In 1910 or so, the Belgian King Leopold II, during his rule in Congo, conducted the super-genocide killing ten million Congolese people. So, Belgian killed more people in Africa than what was then population of their own country.However, in the most famous edition of the *Encyclopedia Britannica*, the entry on Belgian King Leopold II talks about the wonderful things he did and at the end says something like "he sometimes treated people harshly" – yes, such as murdering ten million"; (2) What massacre the French managed to massacre the entire native population, such as on the island of Grenada. Those they did not kill were jumping from the cliffs to escape horror of falling into their hands"; (3) Why U.S. bombed in Laos and Cambodia which were never reported? In 1970's, "the U.S. Campaign, using B52s,

The recommendations or suggestions presented above should be internalized and respectfully implemented without delay. The justice towards those religious and ethnic minorities who are affected by the EPA/VPA (as well as punishing those who were behind the act of injustice) has already been over delayed (at least in terms of enactment of the Vested Property Return Act 2001) and implementation of justice seems to be caught in a process of indefinite further delay. This is unacceptable. Whatever the case is, not fighting the cause of EPA/VPA affected people in establishing their rights through implementation of the recommended suggestions (there may be other suggestions also) would be morally gruesome, ethically unjust, and historically suicidal. On the other hand, it should be kept in mind that it is absolutely impractical to assume that all the proposed solutions will be materialized automatically. Efforts to create an enabling environment to resolve the issues would be needed. Three basic preconditions, among others, should be fulfilled: the government should be concerned about the gravity of the problem first; then it should be committed to resolve the problem, and be competent enough to carefully and confidently handle the issues involved. The government should recognize that any feasible attempt to resolve the problem will enhance its credibility and image, both nationally and internationally.

was to bomb the Laotian and Cambodia countryside to prevent Laos and Cambodia from joining Vietnam in its liberation struggle. Millions were mercilessly killed In Cambodia, it all began with the U.S. implanting an illegitimate and corrupt government in the capital, Phom-Penh.... And there is no doubt that more people were murdered during the U.S. bombing campaigns of the Cambodian countryside than by Khmer Rouge actions..... The scale of the bombings has never been reported ... The disinformation campaign of the West is clear: to indict Communist ideology, to connect it to Pol Pot's atrocities"; (4) Who killed people in Eastern Congo and why? "Some of the worst atrocities in the world have been committed over the last few years in the Eastern Congo. Three to five million people may have been killed. And who do you point the finger at? They have been killed by militias, but behind the militias are multinational corporations and governments, and they are not visible"; (5) Why ten million people were killed in Rwanda and Uganda? "It is mostly Rwanda, Uganda, and their proxies who are murdering millions of innocent people, behind this are always Western geopolitical and economic interests"; (6) Why is the international tribunals so hostile to Africa? "If we look at the international tribunals, the only people who are indicted are overwhelmingly Africans and one or two people who are enemies of the West, like Milosevic. And the Africans are also always from the side that we don't like"; (7) How come the Western media knew in advance about U.S. bombing in Tripoli, Libya? "I had a good friend, Charlie Glass, who was the Middle East correspondent for ABC TV for years ... He didn't go along with them and they finally pretty much threw him out. In 1986, the evening of the bombing of Libya, he called me from Tripoli, around 6.30 at night and he said you should watch the 7 o'clock news tonight.... He couldn't tell me why. I turned on the television set at 7 o'clock. Precisely at 7 o'clock, the bombing started. All the Studios were there Nobody pointed out that this was the first time in history that a bombing was scheduled for prime-time television"; (8) How do the Western media colonizes people's mind including the minds of the perpetrators? "Eastern European dissidents

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11. In Lieu of Conclusions: Solution is Necessary but Constraints are Formidable. Are We Fighting a Losing Battle?

In conclusion – based on political economic analyses of various dimensions of the Enemy Property Act, Vested Property Act, Vested Property Return Act (alongwith all amendments), and the real life situation – it is difficult to draw any straightforward conclusion pertaining to the possibilities of resolution of the problem, meaning here that the affected people, in near future, will get justice in having back their properties lost due to EPA/VPA. The normative conclusion is that the affected people (and/or their legal inheritors and/or their successors-in-interest) have all the inherent rights to get back their properties; however, the objective practical conclusion is that the distance of the affected people is still far away from the frontier of reaching the point when they will get back their properties lost due to EPA/VPA.

In the relevant literature and in political parlance, the whole issue of EPA/VPA has so far, been presented as a religion-based issue, which is just an appearance on the surface. To put it bluntly, the issue of EPA/VPA, in essence, is not a religion-based issue. This is clearly a "class" issue (not in the classical-traditional sense of the term) wherein the upper class of rent seekers grab everything (from natural resources to verdict of the court, from labour of weaker sections of people to

like Vaclav Havel are very famous in the West and greatly honored ... Vaclav Havel (right after the fall of the Berlin Wall) came to the United States and he spoke before a Joint Session of Congress where he got just rapturous applause, especially when he described the United States as "the defenders of freedom", who have just brutally murdered half a dozen of his counterparts in a place which is inhabited by un-people. No comment"; (9) Who are the target of negative propaganda by Western media? "Look at the attacks against China. Whenever China makes an error, the smallest error, like the mining disasters in Zambia in which its companies were involved and several people died- several, not millions - it becomes the target of negative propaganda by the local and international press"; (10) Who were behind the atrocities in Algeria in the 1990s?" "Atrocities attributed to the Islamists were actually carried out by the government with fake Islamist constumes and so on ... France likely had a hand", (11) Who are the real targets of Western propaganda and why? "What I read in the Western press and what I witnessed all over the world somehow did not match. Failed feudal states were hailed as a "vibrant democracies", oppressive religious regimes were described as "tolerant" and "moderate" countries, while nationalist and socially-oriented states were incessantly demonized... Western misinformation had been clearly target countries that have been refusing to succumb to Western dictate : Cuba and Venezuela, Eritrea and China, Iran, Zimbabwe, Russia, while glorifying those nations that were either ravishing its neighbors on behalf of Western interests, or plundering their own impoverished people: Rwanda, Uganda, Kenya, Indonesia, Saudi Arabia, Israel, the Philippines and many others.;" and (12) "It was the fear of being targeted, of being "punished" by the seemingly omnipotent Western masters of the world ... Nihilism has also being spread by propagandists firmly entrenched in Western media outlets and in academia" (for details about all the above stated see Chomsky and Vltchek 2013, p. x-xi, 6-11, 13, 18-19, 26-29, 42-43).

product of their labour etc) and in doing so they use all possible means and ways including religion, ethnicity, legal and extra-legal instruments and institutions, power, politics, muscle. The aim is simple: To become wealthy by taking away wealth from others who are weak; and not become wealthy by creating wealth by themselves and to multiply that grabbed wealth (not only during the period of primary accumulation of wealth under capitalism, but also throughout all the stages of capitalism including under imperialism) and, thereby, create a condition in which the State, Government, Politics become subservient to them – the rent seekers-grabbers (in this case grabbers of properties of religious and ethnic minorities using EPA/VPA). Therefore, there should not be any doubt, that the whole issue of EPA/VPA, both politically and economically, is a class issue. And, fighting class issue using religion is a misnomer, and such struggle is destined to fail such battle is inherently a losing battle.

Reversal of "political economy of injustice" into "political economy of justice" is history in and by itself. It is worth keep in mind that over 50 per cent of the total incidences of dispossession and about 75 per cent of the total land dispossession of religious minorities affected due to the Enemy Property Act (and subsequently by the Vested Property Act) took place 40 years ago (between 1965 and 1971) during the military-autocratic Pakistani rule. After a long struggle, the Vested Property Act has been repealed (in 2001) and the Vested Property Return Act 2001 (alongwith subsequent amendments) has been enacted by the national Parliament during democratically elected government. This should be treated as a historically welcoming act of rectifying historical misdeeds of the past. However, this should not cause complacency. This is primarily due to the fact that after 40 years of grabbing land of the religious minorities giving those back to their legal owners or to their inheritors or to their successors-in-interest is unprecedented in history making this history can never be an easy route. Here, it is important not to remain oblivious of the unpalatable truth that the operation of the Vested Property Act as a continuation of the Enemy Property Act had its root in distinct historical doctrine in the religion-based state-craft of Pakistan. Depriving religious minorities through Enemy Property Act and Vested Property Act was not an historical accident per se. It was rather an outcome of conscious decision by the Pakistani rulers to Pakistanize the East Bengal (East Pakistan), to use "Islam is in danger" as a means to obstruct development of secular Bengali culture and associated human capital formation in East Bengal (Pakistan), to un-people a large part of Bengalees from their roots based on their non-Muslim identity, and to try to establish military feudalistic elitist Pakistanized hegemony over the Bengalees and, thereby, to create their politico-economic allies in East Pakistan (East Bengal). In materializing these,

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the Enemy Property Act promulgated in 1965 – using the War between India and Pakistan as a pretext – and subsequently the Vested Property Act – after 1971 War of Independence of Bangladesh – were used to divide people based on their religious affiliations. This legal instrument – EPA/VPA – was used by the barbarian rulers as a mass weapon of destruction towards oppressing people, especially the religious and ethnic minorities. The consequences have been, simply, gross denial of freedom and liberty, and institutionalization of systematic social, cultural, economic, political, and psychological deprivation of the religious and ethnic minorities in Bangladesh. The fuelling of religious fundamentalism in politics, economy and culture has been an obvious consequence as well as an objective.

The national disaster has been so huge that approximately 1.5 million households or 7.5 million people belonging to various religious and ethnic minorities have been directly and severely affected by the Enemy/Vested Property Act, and have lost about 3.0 million acres of their land property. In addition, there has been unmeasurable extent of national losses in terms of forced mass out-migration, stresses and strains, mental agonies, severance of family ties, loss of human potentials, disruptions in communal harmony, un-freedom, and disintegration in the process of national human capital formation. All these have happened as mediated through the Enemy/Vested Property Act. This act violated all fundamental human rights; this act contradicted the basic spirit of the Proclamation of Independence; this act contradicted the basic premises of the constitutional provisions of "equality, equity, freedom and justice for all citizens"; and this act has been inherently communal, anti-human, and anti-democracy. This act created an environment which was adequately enough to destroy the inherent spirit of freedom, liberty, and choice.

It is, therefore, in order to ensure a true environment for humane development in Bangladesh, there is no alternative but to successfully and expeditiously implement the Vested Property Return Act 2001maintaining the core spirit of the Act, and return back the properties affected by EPA/VPA to their legal owners and inheritors. This demands political commitment towards ensuring the well-being of the people affected by EPA/VPA coupled with substantive public actions. And all these are absolutely necessary to institutionalize liberty, freedom, and choice – as both means and ends to true humane development in Bangladesh. Therefore, in order for to revert the conscious historical misdeeds done towards the religious and ethnic minorities through the Enemy and Vested Property Acts – *political economy of injustice* should be turned into *political economy of justice*, and in ensuring that the accelerated implementation of the Vested Property Return Act has no alternative. Since the issue of EPA/VPA is ultimately a class issue – the

question remains: "Are the affected people going to get back their properties in a class society dominated by the grand alliance of the agents of an unholy triangle – the Rent Seekers-Grabbers, the State (with governance agents), and the Politics serving rent seekers interest"? A difficult question to answer!

My answer is 'No', not in the near future. There is plethora of reasons of my concluding so. The first and foremost is: We have accepted the battle based on appearance of things and not essence of things - and fought and still fighting the battle as a battle between religions (Muslims versus the non-Muslims, and primarily the Hindus) and, so far, acted accordingly. This battle is destined to be a losing battle. To the contrary, we have never get in to the essence of things to think the issue of EPA/VPA as a class issue, as an issue of wealth and resource grabbing by the rent seekers aided by their super-structural ideologies and institutions (state, government, politics, religion - local, national, international), as an issue that all forms of violence have played immense role in both establishing and perpetuating capitalism. In order to establish lawful, constitutional, fundamental and human rights of the people affected by EPA/VPA - the affected people themselves are not involved (or remotely involved) in the movement. To put it baldly, there is no relevant true movement per se in which, irrespective of religious identity people, especially people who are exploited in a class society are fighting unitedly to establish their rights to liberty, freedom, equality, fraternity, and solidarity.

Is resolution possible? Are we fighting a real battle - the way we are fighting it? Based on my twenty years of research experience on political economy of EPA/VPA coupled with my relatively proactive participation in advocacy movement against this inherently communal law and civilized act towards returning back the properties grabbed using EPA/VPA to their legal owners and/or to their legal inheritors and/or to their legal successors-in-interest (as applicable) - my informed reply would be both 'NO' and 'YES'. To put it objectively, the resolution depends on the readiness of the two sides - the supply side (meaning the state, the government, and the grabbers) and the demand side (meaning the affected people, their community, their organizations, and exploited people at large). To my knowledge, the directly affected people comprising people representing religious and ethnic minorities, especially the Hindu community (let alone the indigenous peoples) is not ready or yet to be ready - they themselves are divided in to different interest groups in a class society; their unity in diversity is yet to be consolidated; many of their leaders and/or activists suffer from elitism (and there is no historical evidence of elitist leaders serving the causes of the poor and marginalized people); many of their leaders are not that really serious about

the poorest of the poor EPA/VPA affected persons who have become landless and/or shelterless and/or pauper-beggar (such seriousness has never been expressed in public); most of their leaders and activists are yet to internalize the politico-economic essence of unpeopling the minorities; most of them are not in a position – in terms of their thoughts and actions – to accept the issue as a matter of rights, establishing which requires a serious movement of class struggle in essence and which in no way should be a subject of begging to the grabbersgrand- alliance; most of them do not recognize or are not adequately serious about the equality of women in inherited properties; most of their 'movement' is purely Dhaka-centric urban and to be more precise, Dhaka press club-centric; some of their 'movement' is at best district- level-centric and almost never reached the rural areas (where 75 per cent population live and where almost 80 per cent of the incidences of EPA/VPA took place); most of them, in reality, do not believe in their core of their heart that the affected people will get back their properties lost due to EPA/VPA, however, for reasons not known to me somehow they are comfortable and complacent with the pathing-up system of Vested Property Return Act; most of them are most likely suffer from a gross misperception that their religions-based organization - the Hindu-Bouddha-Christian Oikyo Parishad- will be adequately strong enough to resolve the problem; some of them even preaches Hindu fundamentalism and some other, Christian fundamentalism; most of them think that some of the NGOs active in the field especially those that are getting funding support from outside Bangladesh ("donors" or currently politely renamed as "development partners") will be the saviour and will do everything to resolve the problem; many of them still believe and believe strongly that the mighty neighbour India (from religion point of view dominated by population belonging to Hinduism) will come forward and resolve the issue; most of them perceive the problem of EPA/VPA as an issue of the Hindus only, and not as a national issue in which irrespective of caste-cred-religion - all citizens shall participate in the "battle for justice". Each of the abovementioned is not only unhealthy for the growth of the real movement, but also provides dividend to the grabbers-grand-alliance without investment. This has to be realized and recognized carefully by the movement makers and opinion leaders who want to really fight the "battle for justice" and 'win the battle'. The movement towards resolution of the unsurmountable destruction done by EPA/VPA although morally and ethnically correct in its own right is not all-encompassing and politically still in her infancy. Involving Indian State and government, diplomatic missions and donors ("development partners") will be both ethically and politically incorrect, counterproductive and may be suicidal.

Upholding the whole issue of EPA/VPA as an issue of 'religious right' will ultimately imply getting in to an unresolvable trap, because fanaticism is a basic trait in all religion, wherein if battle for justice somehow perceptively turns into a battle for fighting the religion of majority - that will end up with getting into a trapin-perpetuity. The problems grown out of EPA/VPA, in that case, will never be resolved; on the contrary, those problems will multiply. It is therefore, my suggestive conclusion towards getting rid of destructions done by EPA/VPA would be as follows: (1) Do everything to transform EPA/VPA-related thoughts and actions from appearance of things to essence of things, i.e., leave aside the "religion" part and uphold the 'class' dimensions. (2) Involve people from all walks of life, especially all affected people and exploited people at large (irrespective of religion) to shape the movement as "mass movement" against the rent seekersgrabbers grand alliance. In which case, the movement of right to land of the religious and ethnic minorities (or at least to get back those lands which were lost due to EPA/VPA) should be transformed into an integral part of the nationwide Agrarian Reform (or at least land reform) movement, which will unite all the poor, marginalized and exploited people. This should be treated as the only pathway towards resolution of the relevant problems once for all. And, walking through this pathway towards substantive change will require a paradigm shift in the whole philosophy of rights-based movement (including the changes in the mindset of the leaders and movers). Finally, this philosophy of rights-based movement should uphold the politically correct and substantive class-oriented slogan "All poor and marginalized people unite" or, to be more correct in a globalized mono-polar imperialist world, "All poor and marginalized people of the world unite".

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Fiscal Sustainability in Bangladesh: The Present Value Budget Constraint Approach

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Abstract This paper aims to empirically assess the sustainability of the fiscal policy of Bangladesh over the period of 1973-2013 within the framework of the present value budget constraint approach. This approach provides the methodology for analyzing fiscal sustainability in a vector autoregressive (VAR) framework that accommodates testing the short-run instability of variables and the cointegration relationship, and obtaining the normalized cointegrating vector. We apply augmented Dickey-Fuller (ADF) and Philips-Perron (PP) unit root and Johansen cointegration tests, and Dynamic Ordinary Least Squares (DOLS) method to evaluate the sustainability in variables while results of cointegration test indicate long-run cointegration relationship between the variables. Results of normalized cointegrating coefficient and Dynamic Ordinary Least Squares Squares sestimate imply that the fiscal policy of Bangladesh is weakly sustainable.

Keyword: Cointegration, Fiscal Policy Sustainability, Unit Root Test, Present Value Budget constraint, Dynamic Ordinary Least Square (DOLS) and Bangladesh

JEL Classification Number: E62, H62, H63, C32

1. Introduction

Fiscal policy is one of the most powerful instruments that governments use to maintain macroeconomic stability for rapid economic growth, develop a

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mechanism for equitable distribution of income, reduce poverty and ensure optimum efficiency of economic units as well as for intra- and intergenerational transfers of wealth. Hence the relevance of fiscal strategy and performance is highly critical to a country's development process as it is linked with resource generation and distribution. The main tools to achieve these objectives are variation in public revenue, variation in public expenditure, and management of public debt. In the case of Bangladesh, these are reflected in the budgetary operations of the government, prepared and implemented on year-on-year basis. Fiscal policy is predominantly guided by the Perspective Plan, Five Year Plan and other plans of Bangladesh.

Sustainability of fiscal policy requires government expenditures and revenues to be in equilibrium in the long run. The sustainability of fiscal policy addresses the question of whether the government is able to generate surpluses in future in order to pay off the previous debt or whether it will carry on playing a Ponzi game (financing the debt and interest payments by issuing new debt), as is possible in some dynamically inefficient economies. According to Abel et al. (1989), the economy is dynamically inefficient "in situations where the population growth exceeds the steady state marginal product of capital, or equivalently the economy is consistently investing more than it is earning in profit."

Most often, high public debt level creates repayment flows that can crowd-out much needed public spending on health, education and infrastructure and can generate adverse incentives for private investors to engage in activities that spur long term growth. Moreover, high public debt level has two main negative effects on economic activity. First, it requires high taxes to finance debt and puts upward pressure on real interest rates which imply private investment and certain government expenditures to be crowd out. Second, fiscal policy becomes procyclical rather than countercyclical when the government is forced to reduce its spending or raise revenues due to the lack of its ability to finance its deficits. Furthermore, high public debts adversely affect marginalized people. The government continuously increases the revenue earning through imposing more regressive tax to pay the debt service. Increasing level of tax has two-fold effects on people: firstly, it increases the price level of the economy and secondly, it reduces the disposable income of the people. These two effects result into the fall of real income of the people and make the situation worse off. Therefore fiscal policy sustainability is important to maintain macroeconomic stability.

Fiscal sustainability is a useful criterion to evaluate whether or not fiscal policy is on a right track. There are different notions regarding the analysis of fiscal sustainability. Traditionally, fiscal sustainability has been assessed in terms of indicator analysis, i. e., summary measures of sustainability. The first specification of fiscal policy sustainability is envisaged at the beginning of the past century after the First World War by Keynes in his study regarding the problem of the French Public Debt: the state liabilities have reached an excessive proportion of national income (Keynes, 1938). The second specification going back to Domar (1944) requires the public debt ratio to converge to a finite value in order to avoid a continuously growing tax ratio. A third specification used by Buiter (1985) and Blanchard et al. (1990), requires the debt ratio to converge back to its initial level. A fourth specification employed by Wilcox (1989) states that a sustainable fiscal policy is one that would be expected to generate a sequence of debt and deficits such that the Present Value condition would hold. Finally, Blanchard et al. (1990) propose a tougher restriction in that the present discounted value of all future primary surpluses should be equal to the current level of public debt. If this restriction is expressed in nominal values (and the discount rate is the interest rate on public debt), it implies that the debt ratio should converge to zero. Moreover, one concept of fiscal sustainability relates to solvency, the ability of the government to service its debt obligations in perpetuity without explicit default. Another concept of fiscal sustainability relates to the government's ability to maintain its current policies while remaining solvent.

There are two commonly used approaches to evaluate sustainability of fiscal policy in the theoretical literature- Accounting approach and Present Value Budget Constraint (PVBC) approach. Accounting approach focuses on pre-defined macroeconomic targets in the economy which include inflation, growth rate of the economy and interest rate. According to this approach, a primary balance is defined sustainable if it generates a constant (rather than ever-increasing) debt/GDP ratio, given a specified real GDP growth target and constant real interest rate. Therefore, the sustainability condition implies that the growth rate of the economy must be larger than the real interest rate. The Accounting approach involves the use of a number of indicators of fiscal sustainability, which are based on the government budget constraint.

The PVBC approach for assessing fiscal sustainability involves economic testing of the PVBC or of the non-ponzi game (NPG) condition [a condition that states that the present value of the stock of public debt goes to zero in the limit] for a set of time series data on government expenditure, revenue, deficits and/or debt. This involves tests of nonstationarity of variables and analysis of cointegration. According to the PVBC approach, sustainability is said to exist when the present value of budget constraint (PVBC) is satisfied without a major and abrupt correction having to be made in the balance of income and expenditure to avoid solvency and liquidity problems. Solvency, in turn, is ensured when the present value of current and future primary expenditure is not greater than that of current and future streams of income, net of any initial indebtedness. Hakkio and Rush (1991) develop the empirical approach of the sustainability of fiscal policy through cointegration tests between government revenue and expenditure, while Hamilton and Flavin (1986) consider cointegration tests between fiscal deficit and government debt. Following Hamilton and Flavin (1986), many studies such as Trehan and Walsh (1988), Hakkio and Rush (1991), Tanner and Liu (1994), Liu and Tanner (1995), Makrydakis, Tzavalis and Balfoussias (1999), Issler and Lima (2000), Green, Holmes and Kowalski (2001) and Bravo and Silvestre (2002) have tested the sustainability of budget deficits using the intertemporal budget constraint of the government. While Hamilton and Flavin (1986), Trehan and Walsh (1988, 1991), Hakkio and Rush (1991), Tanner and Liu (1994) and Liu and Tanner (1995) test the sustainability of US government deficits; Makrydakis, Tzavalis and Balfoussias (1999) analyze it for Greece. Issler and Lima (2000) did it for Brazil, Green, Holmes and Kowalski (2001) for Poland and Bravo and Silvestre (2002) for eleven European countries.

Moreover, there are two types of analysis used to examine the sustainability of fiscal policy- time series and panel data analysis. Studies using time series analysis (e.g., Quintos 1995; Hamilton and Flavin, 1986; Papadopoulos and Sidiropoulos, 1999; Cipollini, 2001; and Qin et al. 2006) examine the long run relationship between government spending and revenues for a particular country over time. The panel data analysis (e.g., Prohl and Schneider, 2006; Llorca and Redzepagic, 2008; Ehrhart and Llorca, 2008; Westerlund and Prohl, 2010) investigates the relationship between revenues and spending across different countries at the same point in time (year). The majority of studies which use time series data have tested the sustainability for a single country, Olekalns (2000) examined the case of Australia, Hatemi-J (2002) tested the case of Sweden, while Davig (2005) examined the case of U.S.A. A few studies examined fiscal sustainability of a group of countries: Prohl and Schneider (2006) examined the EU15 countries, and Westerlund and Prohl (2010) investigated the case of 8 OECD countries.

The Government of Bangladesh spent a large amount of its resources in reconstruction and rehabilitation work in the initial years of independence. It has negative public savings and limited private investment. Despite large inflows of foreign aid, the increasingly large financing gap becomes the main concern of the government. The situation is further aggravated by frequent internal and external Md. Abdul Wadud et.al.: Fiscal Sustainability in Bangladesh: The Present Value Budget

shocks. Under the circumstances, government fiscal policies during the 1970s and 1980s were largely oriented at rehabilitating the war-torn economy as well as stabilizing it from various shocks. This has gradually led to weak fiscal structure and poor fiscal management. The tax structure is such that any increase in taxes due to built-in consequences of economic growth is virtually not possible. More than 80% of the total tax revenue came from indirect taxes, amongst which taxes on imports contributed about 60%. Current expenditure has always been underestimated in the country, while current surplus as well as foreign loans and grants are overestimated. Therefore, the overall fiscal deficit experienced a large variability over the period under observation. The scenario of Bangladesh's revenue, expenditure and fiscal deficit is shown in Figure 3. The overall budget deficit was 8.4% of GDP during the 1980s and came down to 5.9% in 1991-92 and thus provided a breathing ground for the government. Since the 1990s, the country has maintained a fiscal deficit as a ratio of GDP below 4.0 percent except in fiscal year 2000 and 2008. Up to 1997-98, the budget deficit was successfully contained to less than 6% which helped stabilize the economy to a great extent. The overall budget deficit for the fiscal year 2013-14 is estimated at Tk. 55,032.00 crore, which is 4.6% of GDP. The revised budget of fiscal year 2012-13 estimates a deficit of Tk. 49,656.00 crore (4.8% of GDP), which was Tk. 55,000.00 crore (5% of GDP) in the proposed budget of Bangladesh. The economy of Bangladesh thus experienced persistent fiscal instability during the period under review because of various political and economic shocks.

This paper is therefore designed to check whether fiscal sustainability exists in



Figure 1 : Total Revenue, Total Expenditure and Budget Deficit (% of GDP) in Bangladesh

Bangladesh within the framework of the present value budget constraint. We apply Johansen cointegration approach in a VAR framework and Dynamic

68 Bangladesh Journal of Political Economy Vol. 29, No. 2 Ordinary Least Squares (DOLS) method to assess this sustainability using time series data of government revenue and expenditure for the period 1973 – 2013. To the best of our knowledge, no study has been done applying this methodology to empirically test the fiscal sustainability in Bangladesh. Therefore, this study is the first of its kind in Bangladesh.

The rest of the paper is organized as follows: Section 2 details the theoretical framework; Section 3 explains the econometric methodology and data. Section 4 provides empirical results and Section 5 gives the conclusion.

2. Theoretical Framework

The present value budget constraint (PVBC) pioneered by Hamilton and Flavin (1986) and Hakkio and Rush (1991) is used as the methodology for modeling the dynamics of fiscal sustainability. This choice draws from the fact that the PVBC is anchored on recent advances in the econometrics of non-stationary and cointegration methodology for assessing fiscal sustainability. In addition, unlike the accounting approach, the PVBC does not make assumptions that liabilities can continue to grow at the growth rate of the economy's GDP, so that debt/GDP ratios remain constant leaving rather vague the role that lenders ultimately play in determining what debt strategies are "sustainability can be indicated by the government intertemporal budget constraint (IBC) or the PVBC (Afonso and Jalles, 2011; and Afonso and Rault, 2010).

The analysis of the PVBC for a single country in a given period *t* starts with the government budget constraint which can be written as follows:

$$G_t - R_t + r_t B_{t-1} = B_t - B_{t-1}$$
 (1)

where G_t is the value of government expenditures, R_t is government revenue, B_t is the government debt and r_t is the real interest rate on government debt. From equation (1), if the government runs a primary surplus equal to zero, the stock of debt grows at a rate equal to the interest rate. However, if the government runs a primary deficit, the stock of debt grows at a rate exceeding the interest rate. Also, if the government runs a primary surplus, the stock of debt grows more slowly than the interest rate. If the surplus more than offsets interest payments on existing debt, then the debt actually shrinks over time.

Let,
$$S_t = R_t - G_t$$
 (2)

where S_t is the primary surplus at the period t . Substituting equation (2) into equation (1) and after some rearranging we get:

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$$B_{t-1} = B_t (1+r_t)^{-1} + S_t (1+r_t)^{-1}$$
(3)

Substituting recursively forward for N periods gives the following inter-temporal budget constraint equation:

$$B_t = B_N (1+r_t)^{-N(-1)} + S_{t+i} \sum_{i=1}^N (1+r_t)^{-i}$$
(4)

By letting N $\rightarrow \infty$ the limiting value of equation (4) can be expressed as follows: $B_t = \lim_{N \rightarrow \infty} \left[(1+r_t)^{-N(-1)} B_N \right] + \sum_{i=1}^{N} \left[(1+r_t)^{-1} S_{t+i} \right]$ (5)

Equation (5) states that the current debt stock is equal to the present value of the debt stock in the limit plus the present value of its future primary surplus. A sustainable fiscal policy should ensure that the "non-Ponzi game (NPG)" condition holds, i.e. the present value of the stock of public debt goes to zero in the limit. It is also worth noting that the hypothesis of fiscal policy sustainability is related to the condition that the trajectory of the main macroeconomic variables is not affected by the choice between the issuance of public debt and the increase in taxation. Under such conditions, it would therefore be irrelevant how the deficits are financed. This implies the assumption of the Ricardian Equivalence hypothesis. Thus:

$$\lim_{N \to \infty} \left[(1+r_t)^{-N(-1)} B_N \right] = 0$$
(6)

Equation (6) represents the NPG condition, and the implication of this equation is that in the long run, debt cannot grow at a rate equal to, or higher than the interest rate. Assuming that the NPG is satisfied, then substituting equation (6) into (5) gives the PVBC equation as follows:

$$B_t = \sum_{i=1}^{N} [(1+r_t)^{-1} S_{t+i}]$$
⁽⁷⁾

Equation (7) shows that government debt at any point in time must equal the present value of its future primary surplus. The implication is that public sector debt cannot be continuously rolled over, that is, repayment of the principal must take place at some point and, while the PVBC does not rule out large fiscal deficits or debt ratios, government is required to run some primary surplus in the future by increasing revenue through taxes or grants; reduction in expenditure; monetization of the debt or shifting between debt sources to take advantage of lower interest rate.

The PVBC approach to evaluating fiscal sustainability involves econometric techniques in stationarity and cointegration analysis. Therefore, the starting point for these tests is to take the first difference of equation (5) to get an empirical testable representation of the intertemporal government budget constraint:

$$\Delta B_t = Lim_{N \to \infty} \left[(1+r_t)^{-N(-1)} \Delta B_{N+1} \right] + \sum_{i=1}^N \left[(1+r_t)^{-1} (\Delta R_{t+i+1} - \Delta G_{t+i+1}) \right]$$
(8)

Assuming the real interest rate is stationary, with mean, r, and defining and an

 $E_t = G_t + (r_t - r)B_{t-1}$ additional definition, $GG_t = G_t + r_tB_{t-1}$, and assuming the NPG in equation (6) is satisfied, the intertemporal budget constraint may also be written as:

$$GG_t - R_t = \sum_{i=1}^{N} [(1+r_t)^{-1} (\Delta R_{t+i+1} - \Delta E_{t+i+1})]$$
(9)

In equation (9), GG_t is total government spending on goods and services, transfer payments, and interest on the debt; R_t is government revenue. Equation (9) forms the basis for testing the sustainability hypothesis where GG_t and R_t must be cointegrated variables of the same order. Assuming that and are non-stationary variables, and that the first differences are stationary variables, this implies that the series and in levels are I (1). Then, for equation (9) to hold, its left-hand side needs to be stationary. If it is possible to conclude that GG_t and R_t are integrated of order 1, these two variables should be cointegrated with cointegration vector (1, -1) for the left-hand side of equation (9) to be stationary. The conditions for sustainability are that both variables must be integrated of same order and should be cointegrated.

The procedure to assess the sustainability of the intertemporal government budget constraint therefore involves testing the following cointegration regression:

$$R_t = a + bGG_t + \mu_t \tag{10}$$

If the null hypothesis of no cointegration, i.e. that the two I(1) variables are not cointegrated is rejected (with a high-test statistic), this implies that one should accept the alternative hypothesis of cointegration. If there is cointegration, it implies that the PVBC holds and fiscal deficit is sustainable. Similarly, if there is no cointegration, the PVBC does not hold and the fiscal policy is unsustainable. However, the condition b=1 is not, strictly speaking, a necessary condition for the government's budget constraint to hold. When there is co-integration, with b < 1, government expenditures are growing faster than government revenues, and the deficit may not be sustainable. Hakkio and Rush (1991) show that when GG_t and R_t are in levels, the condition 0 < b < 1 is a sufficient condition for the budget constraint to be obeyed. However, when revenues and expenses are expressed as a percentage of GDP or in per capita terms, it is necessary to have b = 1 in order for the trajectory of the debt-to-GDP not to diverge in an infinite horizon.

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3. Empirical Framework - Econometric Methodology

Econometric methodology of this study consists of testing nonstationarity properties of variables – government revenue and government expenditures, assessing cointegration relationship between the variables and finding normalized cointegration vector, and obtaining the coefficient of regression parameter estimated by DOLS method. These are discussed as follows.

3.1 Unit root tests

The first task is to determine the order of integration of both series after checking the nonstationarity of variables. In order to do so, we employ augmented Dickey-Fuller (ADF) and Phillips Perron (PP) unit root tests. If the variables are nonstationary, then regression results suffer from the problems of endogeneity and spurious correlation. Then the variables need to be made stationary which can be achieved through differencing them. The number of differencing required to make the variables stationary is called order of integration. The ADF test is estimated by the following regression:

$$\Delta Y_t = \beta_1 + \beta_2 \ t + \delta Y_{t-1} + \sum_{i=1}^m \alpha_i \Delta Y_{t-i}$$
(11)

Where ΔY_t is the first difference of Y series, β_t is a constant term, t is a trend variable, m is the number of lags which are included to allow for serial correlation in the residuals and μ_t is the residual term. A test for nonstationarity of the series, Y_t , accounts to a test of δ =0. If the absolute value of the computed statistics for δ exceeds the absolute critical value, then the null hypothesis, that the Y_t series is nonstationary must be rejected against its alternative hypothesis. That is, if, on the other hand, it is less than the critical value, it is concluded that the Y_t series is nonstationary. While the ADF test takes care of possible serial correlation in the error terms by adding the lagged difference terms of the regressand, the PP test uses nonparametric statistical methods to take care of the serial correlation without adding lagged difference terms. We also apply PP test to check the nonstationarity of variables. The test detects the presence of a unit root in a series, say, Y_t , by estimating the following regression:

$$\Delta Y_t = \alpha + \rho Y_{t-1} + \mu_t \tag{12}$$

$$\Delta Y_t = \alpha + \beta_{t+} \rho Y_{t-1} + \mu_t \tag{13}$$

where the second equation includes a trend variable. The PP test is verified by the t value associated with the estimated coefficient of ?. The series are to be stationary if ? is negative and significant. The test is to be performed for all the

variables where both the original series and the differences of the series are to be tested for stationary. Once the order of integration is determined we test for cointegration.

3.2 Cointegration Approach in a VAR Framework

The Johansen cointegration test is applied for determining cointegration relationship between total revenue and total expenditure following the literature on fiscal sustainability. To determine the number of cointegrating vectors we use the maximum eigenvalue test and the trace test. We formulate the Vector Autoregressive (VAR) model as follows:

$$Y_t = \mu + \sum_{k=1}^p \pi_k Y_{t-k} + \varepsilon_t \tag{14}$$

Where Y_t is an (n×1) column vector of n(I) variables, π_t is a coefficient matrix, μ presents a (n×1) vector of constants, p denotes lag length, and ε_t is a disturbance term that is independently and identically distributed with zero mean and constant variance. Equation (9) can also be expressed in first difference form as:

$$\Delta Y_{t} = \mu + \pi Y_{t-1} + \sum_{k=1}^{p-1} I_{k} y_{t-k}$$
(15)

Where Δ is the first difference operator and I is an $n \times n$ identity matrix, $\eta = \sum_{k=1}^{p} \prod_{k=1}^{p} \prod_{k$

-I and $\Gamma_k = \sum_{j=k+1}^p \prod_j$

The rank of matrix Γ I determines the number of cointegration vectors which is equal to the number of independent numbers of cointegrations. If the rank of Γ I equals r and r<n, then there exist r cointegrating relationships in the model. The number of cointegrating relations is tested with two statistics, namely trace statistic and maximum eigenvalue statistic which are obtained respectively from the following equations:

$$\lambda_{tracs}(r) = -T \sum_{i=r+1}^{n} \ln \left(1 - \lambda_i\right) \tag{16}$$

$$\lambda_{max}(r, r+1) = -Tln(1 - \lambda_{r+1}) \tag{17}$$

where λ_t denotes the estimated values of the characteristic roots obtained from the estimated \tilde{O} , and *T* is the number of observations.

3.3 Dynamic Ordinary Least Squares (DOLS) Method

We further apply a more robust method proposed by Stock and Watson (1993) to estimate the long run parameters of the model that corrects for possible simultaneity bias. The method involves estimation of the long run relationship using the Dynamic Ordinary Least Square (DOLS) method. The DOLS method is often preferred due to its favorable performance in small sample. Moreover, Monte Carlo studies show that DOLS is found to have the lowest root mean square error (RMSE) of all asymptotic estimators (Kao and Chiang, 2000).

3.4 Data

The data set used for the empirical analysis in this paper consists of annual time series data for the period 1973-2013 on total government revenue (R) and government spending (GG). All variables are expressed as a ratio of GDP. Data are obtained from Sixth Five Year Plan (2011-2015), Ministry of Planning, government of the People's Republic of Bangladesh.

4. Empirical Results

4.1 Results of Unit Root Test

We first perform unit root tests on all four series in levels and first differences in order to determine the univariate properties of the data. To investigate the presence of unit root in the variables we conduct the ADF test with an intercept term and trend. We also run the PP test with both an intercept and trend term. Results of both the tests are presented in Table 1.

It is evident from Table 1 that the ADF and PP statistics for both total revenue and total expenditure variables in levels do not exceed their critical values except in the case of total expenditure for ADF test. However, when the variables are differenced once and ADF and PP tests are applied, the test statistics exceed their critical values at the 1% significance level. These results suggest that both series are integrated of order one, that is, they are I(I) series. This implies that the variables have instability in the short-run.

	Augmented (ADF) Test	Dickey Fuller	Phillips-Perro	on (PP) Test	Order Integratic
	Total	Total	Total	Total	
	Revenue	Expenditure	Revenue	Expenditure	
Level	-2.6971	-3.4907*	-2.8656	-3.1629	
First Difference	-6.2684**	-6.7713**	-6.2684**	-8.5271**	I(1)

Table 1 : Results of Unit Root Test

Note: * and ** denote rejection of null hypotheses of unit root at10% and 1% levels of significance, respectively.

4.2 **Results of Cointegration Test**

Having established that all variables are integrated of the same order, we proceed with the Johansen multivariate cointegration tests in a VAR framework which allow us to test for long-run relationship between total revenue as a share of GDP and total expenditure as a share of GDP to assess the fiscal sustainability of Bangladesh. Table 2 presents the cointegration test results. According to Table 2, both trace and maximum eigenvalue tests indicate the rejection of the null hypothesis that there is no cointegrating relationship at 5% level of significance and hence accepts the alternative hypothesis that there is cointegration relationship between total revenue as a share of one cointegrating relationship between these two variables. This indicates the present or equilibrium relationship between these two variables. This implies that the present value budget constraint is satisfied and the fiscal policy is sustainable in Bangladesh.

Having found the existence of long-run cointegration relationship between the variables, we obtain the normalized cointegrating coefficients from the long-run equation estimated from the Johansen cointegration results to test whether the economy of Bangladesh exhibits weak or strong fiscal sustainability. This involves testing the hypothesis that b=1 in equation (10) against the alternative that 0 < b < 1. If the null hypothesis is accepted, we infer that there exists strong sustainability; otherwise we conclude that sustainability is weak. From cointegration analysis we get the value of the normalized cointegrating coefficient (b) to be 0.89. This result indicates that the economy of Bangladesh has weak fiscal sustainability.

	Hypothesiz ed no of	Eigenval ue	Trace statistics	5% critical value	Probabili ty	Maximum eigenvalue	5% critical value	Probabilit y
_	None*	0.497145	34.41943	25.87211	0.0034	26.81069	19.38704	0.0035
	At most 1	0.177244	7.608748	12.51798	0.2853	7.608748	12.51798	0.2853

 Table 2 : Results of Cointegration Test

Note: Both trace and maximum eigenvalue statistic indicate 1 cointegrating equation at the 5% significance level and * denotes rejection of the null hypothesis at the 5% level.

4.3 Result Obtained from Dynamic Ordinary Least Squares (DOLS) Method

We analyze the result obtained from DOLS method to check whether Bangladesh has strong or weak fiscal sustainability. We estimate equation (10), that is, applying DOLS method. Coefficient of the equation captures the relationship between total revenue and total expenditure and thus sheds light on the sustainability of fiscal policy. The DOLS estimation results are shown in Table 3. Result reports that the estimated value of coefficient is 0.805558 which is statistically significant. The model yields an adjusted R² of 0.93, suggesting that 93% of the variation in total revenue can be explained by the explanatory variable total expenditure. This indicates that the fiscal policy of Bangladesh is weakly sustainable.

5. Conclusion

This paper evaluates the fiscal sustainability of Bangladesh within the framework of the present value budget constraint applying cointegration approach in a VAR model and dynamic ordinary least squares (DOLS) method using time series data of government revenue and government expenditures for the period 1973 - 2013. Results from both cointegration analysis and DOLS method indicate that the fiscal variables of Bangladesh are sustainably cointegrated in the long-run, although they have short-run instability and the fiscal policy is weekly sustainable.

Variables	b	s.e.(b)	t-statistic
TR and TE	0.805558	0.131742	6.114644

Table 3: DOLS Results

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Dynamics of Trade Pattern and Competitiveness of Bangladesh: Implications for Future Development

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Abstract The paper highlights the trade intensities and extent of global trade integration and analyses the dynamics of structure and growth of exports and imports of Bangladesh with their sources by commodities and markets. The study tries to analyse revealed comparative advantage of product categories with respect to partner countries and international competitors. It shows trade specialization index and net relative revealed comparative advantage covering both exports and imports together. The paper tries to give detailed analysis of not only of inter industrial trade but also of intra industry trade specialization of the country. The study focuses on quality of trade pattern and matching of country's trade pattern with the development requirements of the country and demand pattern of the world in analyzing its position in the global context. Having focused on trade pattern in regional context , it tries to highlight areas of similarity and complementarity with the regional countries of South Asia. It gives indications for desirable change in trade pattern for accelerating development of the country. It analyses the extent of concentration of exports and imports to judge vulnerability of external trade. It gives account of the status of competitiveness of Bangladesh in the global context and focuses on global market share of exports and imports and its sources of changes at aggregate and product level.

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1. Introduction

1.1 Rationale and Motivation of the Study

Trade is well recognized as engine of economic growth and integral part of development of a country. It is more so for a small country like Bangladesh and in the era of global integration. Eventually mainstreaming trade into developmental agenda has assumed an important space in the policy and plan documents of the country over the years. But aggregate level of analysis hides the dynamics of structural change of trade and policy orientation of trade and development of the country. Analysis of dynamics of trade pattern has become now important research area for facilitating informed policy for trade related development. Motivation of the study is to see the evolving pattern of trade where there is a dearth of empirical work in Bangladesh. Here we shall see how the trade pattern has evolved over time and identify the peculiar characteristics of structure of exports and imports. We shall try to assess the trade pattern and specialization of Bangladesh in terms of seeing whether trade pattern corresponds to the development needs of the country and changing world economic situation and demand pattern and see whether trade pattern could capture the evolving global trade opportunities and could bring about necessary structural change of trade for accelerating development of the country. We require to see the status of comparative advantage of commodities of Bangladesh . Along with inter industry trade, the study will see the status of intra industry trade of Bangladesh to discern benefits of economies of scale in trade. The study of dynamics of trade pattern is expected to hint on implications for future development strategies and help facilitating formulation of appropriate trade policy of the country .

The Author is grateful to the Referee for valuable comments and suggestions on the earlier draft of the paper. However, responsibility for any error rests with the author.

1.2 Objectives and Methodology of the Study

General objectives of the study are to discern dynamics of pattern of trade of Bangladesh on the basis of historical analysis of its exports and imports and to give thrust on concordance of trade with comparative advantage and external demand pattern and needs of development of the country.

The Concrete Objectives of the Study are twine as follows:

i. To analyse the structure and growth of exports and imports by commodities and markets

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ii. To analyse status of competitiveness and trade specialization by commodities and markets

The study will be based on analysis of data of secondary sources and will cover the period of 1972-2010, i.e. 38 years of Bangladesh. Secondary sources will be data base of Bureau of Statistics, NBR, Bangladesh Bank, EPB, BSTI, National Research Bodies, data base of UNCTAD, UNESCAP, COMTRADE, ADB, World Bank, IMF and WTO and data of individual surveys .Official Documents of different Ministries, government departments and authorities will also be used for review of trade policies.

Methods of Analysis will include

- a. Estimation of Indicators of Trade Pattern and sources of Growth of Trade in the context of Bangladesh
- b. Calculation of Revealed Comparative Advantage and Trade Specialisation Index of Commodities of Bangladesh
- c. Tabular analysis and Graphic Presentation of dynamics of Trade Pattern and Competitiveness of Bangladesh

1.3 Structure of the Report

The report is organized to address the following themes.

- i. Trade Intensities and Coverage of Imports by Exports
- ii. Export Composition and Growth by Commodities and Market Destinations
- iii. Import Composition and Growth by Commodities and Sources of Supply
- iv. Concentration Ratio of Exports and Imports
- v. Revealed Comparative Advantage and trade specialization Pattern of Commodities and Markets
- vi. Analysis of Market share and its sources and Status of global Competitiveness of Bangladesh

2. Trade Intensities and Coverage of Imports by Exports

2.1 Trade Intensities of Bangladesh

Trade intensities are the prime indicators of trade pattern of integration of the country with the global economy. If trade is proved crucial mover of the country, longitudinal development of trade intensities are the vital focal points of analysis of trade pattern. Our data analysis (Table-2.1) suggests that trade intensity has reached 45% of country's GDP and its average figure is around 44% in the last

five years. It is striking to note that in the two phases of structural adjustment programme and privatization programme under New Industrial policy of 1982 and 1986, trade intensities remain stagnated at only 16.7% in the two periods of 1981-85 and 1986-90.Gradually, trade intensities have increased only to 23% in 1991-95 despite substantial liberalization move. During 1996-2000, trade intensity reached a high level and got stabilised in 2001-05 with 34%. In the last five years, trade intensity of Bangladesh made a phenomenal growth despite global economic crisis during the period. It is notable that during the last thirty years of 1981-2010, export intensity has made a steady progress from 4% to GDP in 1981 to 17% in 2010. At the same time, it is established that its difference with import intensity has also increased. One of the explanations for widening the difference between export intensity and import intensity is increased import dependence and increased global price of imports relative to its exports, as we shall see it later on.

Another explanation is the increased import dependent exports out of shift from indigenous raw materials based export product of jute textiles to imported raw material based garments products. Import intensity has increased magnanimously from 13% in 1981-85 to 26% in 2006-10. Its capacity to import seemed to have increased not only because of increased export intensity but also because of increased inflow of remittance income of migrant workers. One of the important indicators of global integration is the import penetration ratio. This has increased from 11.8% in 1981-85 to 24% in 2006-2010 period. This has been because of import liberalization and increased domestic demand for better quality imported items. This has several aspects. Firstly, consumers' welfare might have increased. Secondly, domestic industries face tougher competition and have experienced eventually persistent sickness affecting investment climate. There have been gainers as well as losers. Thirdly, traditional sectors have incurred losses and non traditional sectors have benefitted. Consequently, underemployment of unskilled workforce coexists with scarcity of high skilled labour force for modern and non traditional sectors. Fourthly, inequality has rather increased with increased trade intensity and import penetration ratio. Fifthly, GDP growth has increased along with increased trade intensity. Finally, demand for high skilled labour and improved infrastructure would tend to increase in course of time and trade policy actions of the state cognisant of the need for sustained development of the economy. Trade openness though increases over time for Bangladesh remains below other South Asian countries except Pakistan¹. As per I-O Table, 2006-07¹¹, around 91% of output is sold in the domestic market and rest 9% is sold in the export market. In industry sector, 81% product is sold in the domestic market and the rest 19% is sold in the export market. Total imports constitute 38% of total supply of the country ranging from 6.5% in agriculture sector to 56% in industry. Thus on the one hand, production system of the country is more oriented to domestic market despite pursuance of export led development strategy and on the

Economia	Trada	Export	Import CDP Patio in %	Import
Economic	Trade	Export	Import ODF Katio III 76	mport
Phases	Intensity	Intensity		Penetration
				Ratio in %
1972-80	14.069	3.4541	10.6152	9.8704
1981-85	16.848	3.9582	12.8895	11.8248
1986-90	16.780	4.9068	11.8734	11.0952
1991-95	22.551	7.9877	14.5632	13.6400
1996-00	30.042	11.9514	18.0910	17.0451
2001-05	34.600	13.5835	21.0169	19.5350
2006-10	43.937	17.6908	26.2458	24.1521
Average during	24.370	8.4994	15.8702	14.7512
1972-2010				

 Table 2.1 : Aggregate Indicators of Trade Intensities of Commodities

 (Average Figures of Economic Phases)

Source: Estimated from the data of BBS

other, domestic demand is majorly satiated by domestic production rather than imports though share of imports increased the over time.



Fig.2 Coverage of Imports by export earnings in Bangladesh

2.2 Trade Balance and Coverage of Imports by Exports

One of the important trade pattern indicators is trade balance. Its ratio with GDP would give reflection about dependence for development on foreign aid or external income other than exports of goods. Our data suggest that every year the government has been incurring trade deficit of around 7500 Million Dollars. Trade deficit has escalated from 1733 Million Dollars in 1981-85 to 7486 Million Dollars in 2006-2010 i.e. escalated by 27.5% per period. Average annual growth of trade deficit has increased highly in the period 2001-05 and 2006-10 as compared to negative growth rate in the period of 1996-2000. It is observed that proportion of trade deficit to GDP has got stabilized at high figure of 8% in all the periods. However, import coverage ratio has increased significantly from 32% in 1972-80 to 66% in 2006-2010, i.e. more than double (Fig.2). Import coverage level of Bangladesh is far behind India and Bhutan but comparable with Pakistan and Srilanka.

3. Composition Pattern and Growth of Exports of Bangladesh by Commodities and Countries

3.1 Structure of Exports of Commodities of Bangladesh

Structure of exports by end use of Commodities shows that over the whole period under review, consumer goods dominated the export basket (Table-3.1) . Consumer goods along with materials for consumer goods constitute over 95% of exports. The picture did not get changed since the beginning of eighties. In the 1996-00 and 2001-2005, consumer goods constituted around 90% of exports basket. Share of intermediate materials for consumer goods has decreased from 38% in the 70s to only 13% in 2006-10. Share of capital goods in exports has declined from 1.8% in 70s to 0.6% only in 2006-10. Even materials for capital goods also declined from 0.8% to 0.5% during the same period. As per stages of processing, though proportion of exports of primary products decreased, proportion of intermediate products or capital equipment or high tech products did not increase. Share of high tech products and capital equipment are stagnated at 0.2% and 0.3% respectively while share of intermediate products along with primary products has fallen considerably. The result is that around 88% of export is composed of consumer goods in 2009 increased from 78% just five years back.(Table-3.2a). This may not be inconsistent with the low technological background of the entrepreneurs and structure of the economy biased against technology oriented production.

As detailed export structure by commodities (Appendix Table-3.1) shows, share of the traditional exports has fallen and share of non-traditionals has substantially

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increased. Though Bangladesh has lost its importance in supply of jute and jute goods, it could show tremendous success in knitted and woven garments. It is ironic that in the seventies, jute and jute goods constituted 77% and in the period of 2006-2010, jute and jute goods garments constituted 4% of total exports. On the other hand, garments constitute 77% in 2006-10 rising from the very insignificant proportion of 7% in 1981-85 reflecting its tremendous growth (as against sharp decline of share of jute and jute goods).

Knitted garments superseded woven garments in the recent years and share of woven garments has virtually declined from 50% in 1991-95 to 38% in 2006-10. Historical data analysis shows that Bangladesh has gained a lot in increasing proportion of manufactured exports. However, in the process, it could not retain its traditional and indigenous resource based jute products. The role of Jute exports has decreased not only relatively but also absolutely though Bangladesh was the main supplier of jute products in the global market. Demand for jute products is likely to increase with increased demand for environment friendly products. Diversification of jute products is the point of desirable focus.

Data suggest that Bangladesh made remarkable success in both knitted and woven garments, though its main categories are not more than five. In knitted garments, T-shirts and pullovers (80%) and in woven garments, shirts, jackets and trousers are the major products (86%). Here its potentials have not yet got exhausted, rather the sector can move forward comfortably with background experiences for a number of years with accumulated skill of 5000 entrepreneurs and 26 lakhs garment workers and thousands of accounting and managerial professionals. There are many products yet to be developed. Again in the same category of

	C	minouties (% 5na		/	
Economi <u>c Phases</u>	% Share of consumers	% share of material for	% share of capital	% share of materials for	Total
	goods in	consumer goods	goods in	capital	
	exports	in exports	exports	goods	
1972-80	59.2	38.2	1.8	0.8	100.00
1981-85	68.5	29.4	1.0	1.1	100.00
1986-90	74.4	23.4	1.5	0.7	100.00
1991-95	81.2	16.4	1.7	0.6	100.00
1996-00	90.2	8.5	0.7	0.6	100.00
2001-05	89.3	10.0	0.4	0.3	100.00
2006-10	84.3	13.6	0.6	0.5	100.00

 Table 3.1: Dynamics of Structure of Exports by End-use of

 Commodities (% Share in Exports)

Source: Calculated from the data of BBS

products, it can go for higher quality products. Aggressive marketing drive with brand name of Bangladeshi Companies is a feasible option. For that economic

	,			-		
Economic	% Primary	% Mfg	% garment	% of Jute and	% of raw	% of Jute
Phases	Products	exports	l exports	Jute Goods	jute	textiles
1972-80	37.0867	62.9133	0.0681	77.0733	26.44	50.6311
1981-85	34.846	65.154	7.0146	58.508	15.586	42.92
1986-90	22.66	77.34	38.193	30.22	7.602	22.618
1991-95	13.118	86.882	62.2254	14.108	2.858	11.25
1996-00	9.044	90.956	73.5326	6.982	1.672	5.308
2001-05	7.138	92.862	75.1168	4.812	1.168	3.642
2006-10	6.186	93.814	77.0946	3.928	1.238	2.692
Total	20.4805	79.5195	42.7307	32.9859	9.9636	23.0213

Table 3.2: Structure of Exports of Bangladesh by Major commodities in % to Total Exports

Source: Calculated from Data of EPB

Indicators	2005	2006	2007	2008	2009
Exports in value in 000					
Dollars	9331406	11696539	13142843	16773287	17074095
Share of primary goods(%)	7.5	7.3	9.4	5.1	4.8
Share of intermediates (%)	13.4	17.1	13	7.8	5.9
Share of capital (equipment)					
(%)	0.7	0.6	1.7	0.5	0.3
Share of high-tech products					
(%)	0.3	0.2	0.1	0.2	0.2
Share of consumer goods (%)	78.1	75.3	75.8	86.4	88.8
Total	100	100	100	100	100

Table 3.2a: Structure of Exports By Stages of Processing

Source: Adapted from the Data of UNCTAD, 2009.

diplomacy and investment for international marketing need to be facilitated by the government. One note of caution is that it is very risky to rely on single product and export becomes vulnerable in the situation of global market change.

3.2 Growth of Exports by Commodities

Though proportion of traditional exports has declined tremendously, they are growing rapidly in the recent years. For example, jute and jute goods exports grew at the rate of 20% and 26% respectively in the recent period of 2006-10. Though proportion of non garments declined from 62% in 1981-85 to 32% in 2006-10, its growth was from negative to the positive 13.4% during the same period

(Appendix Table-3.1). Thus growth performance of not only of garments was substantial but also of others is appreciable amidst global economic crisis. Though knitted and woven garments contributed to the extent of 77% in the period 2006-10, other products except paper board and tea seem to be still prospective despite decline in their role in the growth of exports.

In respect of end use, though capital goods and materials for capital goods have small share in exports grew very highly in the recent period. Consumer goods grew steadily throughout the whole period of 1972-2010 (Table-3.3). High export growth of all the commodities groupings talks of prospect of diversified export in future.

Phases	Average Annu	al Growth			
	Growth of consumers goods	Growth of materials of consumers	Growth of capital goods	Growth of materials for capital goods	Export growth
1072.80	21.2	22.6	0.4	25.0	26.2
19/2-00	51.2	22.0	0.4	33.0	20.2
1981-85	9.2	6.8	138.3	127.3	8.3
1986-90	12.4	4.6	60.4	81.1	10.0
1991-95	20.2	8.0	62.3	93.9	17.6
1996-00	11.3	-7.1	156.4	19.1	9.1
2001-05	11.1	32.6	191.3	-19.1	12.7
2006-10	15.5	14.4	14.8	1011.2	15.0
Average	16.3	11.9	88.7	164.7	14.5

Table 3.3: Growth of Exports by End-use of Commodities

Source: Calculated from Data of EPB

3.3 Sources of Export Growth by Commodities

The predominant source of export growth in Bangladesh in terms of end-use of commodities, as indicated in Table-3.4, is consumers goods (73% on average for 1972-2010).. If we add materials for consumer goods of 18%, the figure would be 91% of export growth. High share and high growth of consumer goods as indicated before resulted in predominant contribution of consumer goods to exports growth over the years. During 1996-2000, the share of consumer goods as a source of export growth was as high as 96%. Afterwards, it started declining though remains very high as source of export growth. During 2006-10, contribution of consumer goods and materials goods to export growth constituted 74.5% of total exports. This indicates weak technological content of exports as source of its growth and reflects poor quality of export structure of Bangladesh.

Detailed commodity wise sources of export growth (as indicated in Table-3.5) shows that predominant contribution to export growth in the 70s and first half of eighties came from jute and jute goods. In the late eighties, contribution of jute and jute goods was though positive was small (21%). Afterwards, contribution of jute and jute goods was negative during 1990-2000. However, during 2006-2010, contribution of jute and jute goods to export growth again became positive (16%). From the eighties onwards, readymade-made garments became main source of export growth.

In the last economic phase (2006-10), ready-made garments contributed to the extent of 77% to export growth. Positive contribution to export growth, during the same period, came from leather (1.72%), frozen food (0.54%), engineering products (7.1%), footwear (0.80%) and other manufacturing products (6.55%). Contribution of tea was very high in the 70s, but later on declined, and in the recent period it became negative because of its excess domestic consumption over production. Contribution of paper, chemical products and fertilizer was

Economi <u>c</u> <u>Phases</u>	Growth of consumers goods	Growth of materials of consumers goods	Growth of capital goods	Growth of materials for capital goods	Total
1972-80	67.43	31.52	0.03	1.02	100.00
1981-85	56.85	18.04	12.48	12.63	100.00
1986-90	78.34	9.14	7.69	4.82	100.00
1991-95	84.82	6.78	5.48	2.91	100.00
1996-00	94.39	-5.59	10.14	1.06	100.00
2001-05	71.41	23.49	5.51	-0.41	100.00
2006-10	64.78	9.71	0.44	25.07	100.00
Average	72.99	14.62	5.68	6.71	100.00

Table 3.4: Sources of Growth of Exports by End-use of Commodities

Source: Calculated from the Data of Table-3.1 and 3.3.

substantial in some years but negative in recent time. Handicrafts, leather goods and pharmaceuticals are insignificant though are prospective in contribution to export growth in future. Narayan Chandra Nath : Dynamics of Trade Pattern and Competitiveness of Bangladesh

 Table 3.5: Sources of Export Growth by Commodities

 (% Contribution of Individual Items to export Growth)

(70 Com	induction.		muuun		слрон	ulowill)	
Export Items	1972- 80	1981- 85	1986- 90	1991- 1995	1996- 00	2001- 05	2006- 10	Observation
								Declined but
Raw jute	346.42	26.32	10.31	-4.10	-1.62	1.34	2.94	prospective
Tea	67.84	3.15	4.43	-0.05	-0.80	0.26	-0.02	No prospect
	-							Declined but
Frozen Food	179.07	4.66	-4.35	10.91	1.35	7.12	0.54	prospective
Agri products	-30.21	-9.93	-6.52	0.36	-0.03	1.58	2.29	prospective
Other primary								Declined but
commodities	3.60	0.01	0.32	1.81	0.20	0.54	0.79	prospective
commodities	- 340.27	32.69	8.36	5.43	-4.04	10.20	3.85	prospective
								Declined but
Jute goods	308.27	54.62	13.15	-3.37	1.07	0.15	14.05	prospective
Lotal jute and	75.07	Q1 1 /	21.22	8 10	2 57	1.41	15 71	Declined but
Juie goods	15.07	01.14	21.55	-0.10	-2.57	1.71	15.71	Declined but
Leather	2.89	5.27	13.92	1.27	-1.35	3.66	1.72	prospective
								Declined but
Leather goods	0.11	0.00	0.00	4.44	2.20	0.00	0.00	prospective
Footwear	0.11	0.00	0.00	3.16	2.27	1.61	0.79	prospective
Woven								Increased and
Garments	0.43	45.02	66.92	71.06	57.16	28.10	31.16	prospective
Vnitwoor	0.05	0.00	0.00	112 20	50.99	40.62	46.03	Substantial and
Total	0.05	0.00	0.00	112.39	30.88	40.02	40.05	Substantial &
garments	0.49	44.62	68.67	101.32	103.32	65.62	76.37	prospective
Chemical		-						l Declined but
products	3.51	246.46	32.50	6.49	0.16	5.55	-0.66	prospective
Fertilizer	0.00	-0.42	32.48	310.76	-4.00	0.00	0.00	Declined
Pharmaceutic								Declined but
als	7.25	0.47	-0.06	0.58	0.34	0.11	0.00	Prospective
								Declined &
								not
Paper prod	10.70	3.17	-0.09	0.19	0.01	0.00	0.00	Prospective
Uandiaraft	1 50	0.08	0.40	0.50	0.24	0.01	0.03	Declined but
Engineering	1.39	-0.08	0.40	0.39	0.54	-0.01	0.03	Stable and
products	5.39	30.79	3.59	0.59	-0.14		7.12	prospective
Specific								Declined but
textiles	-0.01	-1.74	1.75	10.33	4.11			prospective
								Stable and
Other mfg.	7.80	0.42	1.37	6.62	7.68	20.89	6.55	prospective
Tot mfg	245.06	66.15	05.00	0.7.77	107.20	00.65	06.00	Prospective
exports	345.86	66.15	95.88	97.77	107.30	89.65	96.83	
Total Export	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
Total Exports								Declined but
Garments	00 72	82 65	44.02	10.22	1.02	3/ /2	26.17	Prospective
Total Mfg	17.15	02.05	44.02	10.22	1.05	54.45	20.17	Declined but
exports excent								Prospective
Garments	345.63	49.06	35.39	5.20	6.12	24.31	23.08	r

Source: Calculated from the data of EPB of Different Periods

3.4 Structure and Growth of Exports by Market Destinations

3.4.1 Structure of Exports by Market Destinations

Only nine countries constitute stably 75% of total exports of Bangladesh during 1991-2010 increased from 38% in 1981-85 (Table-3.6). Share of other countries than these nine countries have declined from 62% in 1981-85 to 25% in 2006-10. In the period of 1996-2005, share of other countries was abysmally lower at 19% only. The country like USA alone accounts for 25% of total exports. Three European Countries- UK, Germany and France taken together buy 25% of our total export products. Thus 50% of our exports are for just four market destinations. All these suggest that Bangladesh export is concentrated not only in very few commodities but also in very few markets, and the country is too much dependent on very few countries to increase its export earnings. This suggests the need for massive drive for market diversification to avoid instability and vulnerability of exports along with consolidation of existing ones. Diversification of export commodities in these developed markets is definitely a possible option to pursue. Their import demand need to be studied closely at detailed product categories. The country can think in increasing exports in emerging economies of China, India, Brazil, Russia and Korea. Expansion of demand of the market destinations must be product specific as per their unmet demand and low level of competition from within and outside. Since exports are concentrated in only nine. markets, there is a huge potential for taking the benefits from market expansion.

3.4.2 Growth of Exports to Individual Market Destinations

It is notable that though Bangladesh export market is concentrated in nine developed economies, growth of exports to other market destinations has been remarkably high in the recent period of 2006-10 (Table-3.7). They account for 24% which is much higher than the growth rate of 16% of exports to top nine countries.

3.4.3 Sources of Growth of Exports to Individual Market Destinations

Data analysis suggests that contribution of top nine countries to export growth of Bangladesh has been predominantly high since the beginning of eighties. In the recent period, its contribution has decreased to 67% in 2006-10 from 97% in 1981-85. Contribution of five economies USA, UK, Germany, France and Netherlands taken together have been to the extent of more than 54% of export growth of Bangladesh (Table-3.8). This indicates that trade cooperation with developed economies has still potentials to be realized. Since 2000, role of

	NSA	UK	Germany	France	Belgium	Italy	Nether lands	Can ada	Japan	Others	Total	% exports to Ton 9
Period												importers
1972-80	14.9	7.5	2.1	1.7	4.0	4.6	2.1	1.5	3.2	58.4	100.0	41.6
1981-85	12.6	4.5	1.4	1.1	4.5	5.5	1.9	0.9	5.2	62.4	100.0	37.6
1986-90	27.2	5.9	4.4	2.1	3.9	8.0	2.2	1.6	5.2	39.4	100.0	9.09
1991-95	32.2	8.3	9.4	5.6	4.0	6.5	3.9	1.9	2.4	25.8	100.0	74.2
1996-00	35.4	9.4	10.5	6.8	4.4	4.9	4.7	1.9	2.3	19.7	100.0	80.3
2001-05	32.5	10.9	13.8	6.7	4.0	4.3	4.2	2.8	1.6	19.2	100.0	80.8
2006-10	25.9	9.6	15.2	6.5	3.1	4.0	4.8	4.0	1.5	25.5	100.0	74.5
Average	25.0	8.0	7.8	4.2	4.0	5.3	3.3	2.1	3.0	37.2	100.0	62.8

Table 3.6: % Share of Individual Market Destinations to Total Exports (Average % Exports)

Source: Calculated from the data of BBS

		Table 3.	7: Averag	e Annua	l Growth	of expc	orts to Indiv	idual Ma	rket De	stinations		
Period	NSA	UK	Germany	France	Belgium	Italy	Netherlands	Canada	Japan	Others	Total exports	Top 9
1972-80	4.1	10.1	12.7	4.5	5.7	23.3	11.1	4.6	42.0	16.7	11.9	7.9
1981-85	20.5	3.0	186.4	12.2	33.3	7 7	3.3	16.8	21.9	0.5	5.2	14.5
1986-90	25.3	17.8	38.0	55.8	2.8		19.6	16.9	-2.9	2.5	11.3	19.5
1991-95	23.9	28.2	32.6	25.8	16.4	 	30,4	27.6	16.3	10.7	18.3	21.8
1996-00	14.6	10.0	17.2	14.8	13.1	4.2	16.0	11.6	0.4	3.8	10.7	12.7
2001-05	2.0	13.7	17.8	11.8	9.2	9.1 15	1.0	28.2	5.0	14.1	8.9	7.7
2006-10 All Vears	13.8	14.5	18.4	17.4	15.5	8 5	26.2	21.0	24.7	24.3	18.2	16.2
average	14.3	13.7	43.7	19.4	13.3	5.7	15.4	17.5	17.0	11.0	12.2	14.0
Source: Calc	ulated fron	n the data	of BBS									

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			Tabi	le 3.8: Sc	ources o	if Export	Growth by	⁄ Market	Destina	tions		
JSA		UK	Germa	Franc	Belgi	Italy	Netherla	Cana	Japan	Other	Total	Top 9
1			ny	e	m		spu	da		s	exports	
4		5	2	1	2	2	2	0	6	68	100	32
27		1	27	1	16	11	H	2	12	З	100	57
45		7	11	8	Ч	19	ŝ	2	Ļ	9	100	94
37		11	15	2	ŝ	4	9	ŝ	2	13	100	87
45		80	16	6	S	2	7	2	0	7	100	93
7		15	25	∞	4	4	0	8	Ч	28	100	72
19	123	7	15	9	ε	ε	7	4	2	33	100	67
23	~	7	22	5	3	9	3	2	3	26	100	74

Source: Calculated from the data of Tables-3.5 and 3.6

emerging market destinations has been steadily increasing for export growth of Bangladesh. It increased from 7% in 1996-2000 to 28% in 2001-2005 and 28% in 2006-10. This is an encouraging sign for export market diversification of Bangladesh.

4. Composition and Growth of Imports by Commodities and Countries

4.1 Composition of Imports by Commodities

Overwhelming imports, as data analysis suggests, are for consumption. Share of consumption goods increased from 31% in 1981-85 to 57% in 2006-10. Next

		%	% Capital	
Economic	% primary	Intermedia	Machinery	% Consumer goods
Phases	goods Import	te Goods	Import	imports
1972-80	31.8	22.4	9.6	36
1981-85	27.9	23.3	29.6	19
1986-90	19.0	16.2	34.2	31
1991-95	12.1	16.4	29.7	42
1996-00	12.3	14.5	9.3	64
2001-05	12.3	19.0	8.4	60
2006-10	13.8	21.9	6.9	57
Average	20.1	19.3	17.9	43

Table 4.1: Structure of Imports By Commodities (% Total Imports)

Source: Estimated From Data of BBS

important item of import is intermediate goods constituting 22% in the recent period. Its share has slightly declined to 22% from 23% in 1981-85.Share of primary goods has substantially declined from 28% in 1981-85 to 14% in 2006-10 (Table-4.1). Share of capital goods has also substantially declined to 7% in 2006-10 from 30% in 1981-85.

4.2 Growth of Imports by Commodities

In terms of growth, there is no stability of growth of capital machinery and primary goods. Growth of Consumption goods is stably high followed by intermediate goods. Growth of all categories of imports was high in the period of 2001-05.Growth rate of consumer goods has declined from 40% in 1972-80 to 11% in 2006-10 (Table-4.2). Growth rate of intermediate goods has improved while of capital machinery has deteriorated in the same period.

	Primary			
Economic	goods	Intermediat		Consumer goods
Phases	Import	e Goods	Capital Import	imports
1972-80	61	48	57	40
1981-85	-9	-13	4	33
1986-90	4	13	10	21
1991-95	19	13	10	17
1996-00	14	7	-2	14
2001-05	27	26	27	13
2006-10	-7	1	-1	11

Table 4.2: Growth of Imports By Commodities

Source: Estimated From Data of BBS

4.3 Sources of Import Growth by End-use of Commodities

In terms of end-use of products, consumer goods is the main source of growth of imports (50.06%). High positive contribution of consumer goods to import growth is highly manifested in all the economic phases. In the eighties and first half of nineties ,contribution of capital goods import to import growth was considerable. During 1986-2005, contribution of primary and intermediate products was substantial. During 2006-2010, contribution of consumer goods was as high as 115% to import growth. This reflects poorer quality of imports in the recent years as well as negligence to import substitution of consumer goods.

	(commodities dur	ing 1972-20	10	
	Primary		Capital	Consumer	
Economic	goods	Intermediate	Goods	goods	
Phases	Import	Goods	Import	imports	Total
1972-80	38.78	21.49	10.94	28.79	100.00
1981-85	-131.19	-158.25	61.86	327.59	100.00
1986-90	5.94	16.46	26.73	50.88	100.00
1991-95	15.81	14.66	20.43	49.10	100.00
1996-00	14.96	8.82	-1.62	77.84	100.00
2001-05	18.12	26.95	12.37	42.56	100.00
2006-10	-17.71	4.02	-1.27	114.96	100.00
Average	20.97	15.83	13.14	50.06	100.00

Table 4.3: Sources of Growth of Imports By End-use of Commodities during 1972-2010

Source: Calculated by the Author from the Tables 4.1 and 4.2.

FΥ	India	China	Singapore	Japan	Hongkong	Taiwan	S. Korea	NSA	Malaysia	Others	Total	Top 9
1986-90	3.0	3.2	6.7	13.3	3.3	0.0	2.9	7.2	1.2	59.1	100	40.9
1991-95	8.8	5.6	6.1	9.8	6.9	2.8	5.8	5.2	1.1	50.2	100	49.8
1996-00	13.2	7.9	5.8	7.9	5.7	4.3	4.5	4.1	1.8	44.8	100	55.2
2001-05	13.9	10.4	8.7	6.2	4.6	3.6	3.8	2.5	1.9	44.4	100	55.6
2006-10	13.8	15.9	5.9	4.1	3.6	2.3	3.3	2.1	3.5	37.5	100	62.5
All years	12.7	12.0	6.5	6.1	4.3	3.9	3.8	3.0	2.6	42.3	100	57.7
Source: Esti	imated F1	"om Data	of BBS									

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Table 4.4: Structure of Imports by Sources of Supply in %

4.4 Structure of Imports by Sources of Supply

Imports of Bangladesh are concentrated in nine countries constituting 63% of total imports. Two suppliers are India and China constituting together one third of imports of Bangladesh. India and China constituted only 6% in 1996-90 but have come up increasingly to outbid other suppliers in the market of Bangladesh. Share of top nine countries has increased from 40% in 1986-90 to 63% in the recent period (Table-4.4). Share of imports from Japan has sharply declined during the period under review. Share of other countries than these countries has sharply declined from 59% to 37% during the period.

4.5 Growth of Imports by Sources of their Supply and sources of Import Growth

There has been steady growth of imports during 1972-2010 @11% p.a. except in 1996-2000 (Table-4.5). There has been impressive growth of imports from India, China, Malaysia and Korea Republic. Growth of imports from USA is also stably high. While share of nine countries has increased, growth of supply of other countries has also increased stably @ 9% p.a. and considerably in the recent period. Imports from like Malaysia, South Korea and Japan have considerably increased along with predominant supply from India and China.

Around 67% of import growth was contributed by nine countries. Around 43% of import growth was from two countries-India and China. Share of major nine countries in import growth has considerably increased in the recent period. Contribution of China and India to import growth has increased remarkably in the recent period to the extent of 48% in 2001-05 and 44% in 2006-10.

Around 67% of import growth was contributed by nine countries in 2006-10 (Table-4.5). Around 43% of import growth was from two countries-India and China. Share of major nine countries in import growth has considerably increased in the recent period. Contribution of China and India to import growth has increased remarkably in the recent period to the extent of 48% in 2001-05 and 44% in 2006-10.

5. Concentration Ratios of Exports and Imports

Bangladesh export as indicted in Fig.5, has high concentration ratio (0.37 in 2006-10 increased from 0.33 in 1972-80). Its concentration ratio is the highest among the seven important comparator nations (Fig.6). This reflects relative vulnerability of its export sector. This indicates the need for product diversification in the export basket. Concentration ratio of comparator countries ranges from 0.22 in case of Pakistan and Srilanka to 0.14 in case of India and Vietnam, 0.11 in case of China and 0.08 in case of USA(Fig.6). Import concentration ratio of Bangladesh

			Table 4	.5: Co	mpound Gr	owth of	f Import	's by Sour	ces of Sup	ply in %			
FΥ	India	China	Singapore	Japan	Hongkong	Taiwan	Korea	SU	Malaysia	Others	Total	Top N	ine
1986-90		1000											
1001 05	24.7	15.6	11.5	16.8	35.9		18.5	6.1	11.0	10.1	12.3		15.6
C6-1661	39.7	33.3	-4.7	15.0	21.3		19.8	10.9	6.4	8.2	13.5		1.11
1996-00	-6.7	-5.3	19.6	-0.4	3.9	15.6	-3.4	-0.4	11.9	10.1	4.8		7.6
2001-05	14.4	23.4	1.9	8.6-	4.3	1.6	0.9	7.3	16.9	10.1	8.9		8.3
2006-10	19.4	22.9	8.3	12.4	6.4	3.4	14.9	10.2	35.2	12.7	16.4		8.3
Average	18.9	19.1	7.5	6.3	12.4		11.5	5.0	17.4	9.1	10.9		12.4
			Tal	ble 4.6:	Sources of	^f Import	Growth	By Sour	ces of Sup	ply			
FΥ	India	China	Singapore	Japa	an Hongk	D Z D	aiwan	Korea	US M	alaysia	Others	Total	Top 9
1986-90	9	4			18	σ	c	4	4	÷	87	100	3
1991-95	, УС				11) [r 0	t <	-1 .	ç ç	TOO T	70 E
1996-00	-17	1 %	2	1 0	; -	77	0 E	ې ه	4 C		3U 86	100	0 1
2001-05	22	26	li eg	2	- <i>L</i> -		-) C) (۳ H	80	100	4 6
2006-10	19	25			4	- 2	1 📩	о м	1 -	n o	f (;	100	75
Average	22	21		4	e	ഹ	C	7	ı .		о 20 20 20 20 20 20 20 20 20 20 20 20 20	1001	с Ч

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Source: Estimated From Data of Tables-4.3 and 4.4.



Fig.5 Concentration Ratio of Exports and Imports of Bangladesh

Fig.6 Concentration ratio of Exports-(Comparative Cross Country Picture)



Fig.7 Concentration ratio of Imports - Cross Country Picture


is relatively low and as low as 0.09 in 2006-10 decreased from 0.12 in 1972-80 and comparable with almost all countries of South Asia. Thus import is relatively diversified in Bangladesh (Fig.7).

6. Intra-industry Trade Index and Intra Regional Trade

Evidence suggests that international specialization has been shifting more towards intra industry trade with the increase in international trade. It has been established that intra industry trade is driven by product differentiation and economies of scale, resulting in increased consumer welfare from the availability of wider basket of products within each industry. Bela Balassa (1987)ⁱⁱⁱ showed that intra industry trade is positively related with trade openness and negatively correlated with income inequality. Economic integration and intra industry trade is linked to a considerable extent. It is important to investigate as to what extent Bangladesh trade is of intra industry nature. As Tabular data shows, with the advent of trade liberalization, intra industrial trade i.e., export (Xi) and import (Mi) in the same industry in Bangladesh has increased sharply over the years in Bangladesh. But the level of intra industrial trade is lower than India, Pakistan and Srilanka.

7.1 Intra Industry Trade Intensity Index Of Grubel and Liod (GL)[1975]

For measuring intra industry trade, most commonly used instrument is Grubel and Liod (GL) index^{iv}. This index provides intra industry intensity of each product. At aggregate level, intra industry trade intensity is often evaluated by calculating the average of GL index for each product weighted with the ratio of each product to country's total trade.

GL=
$$\frac{\sum_{i=1}^{n} (X_i + M_i) - \sum_{i=1}^{n} |X_i - M_i|}{\sum_{i=1}^{n} (X_i + M_i)}$$

The intra industry GL index ranges between 0 and 1 with larger values indicating a greater degree of intra industry trade . Main criticism against GL index is that it tends to underestimate the intensity of inter industry trade. As Tabular data (Table-7.1) show, over time, intra industry trade of Bangladesh has increased though lags behind India and Srilanka.

Year	Items	BD	IND	MALD	PAK	SRL
	No. of Industry Groups					
1995	> G-L Index 50	8	35	1		
	Weighted G-L IIT	11	38.2	3.9		
	No. of Industry Groups					
2004	> G-L Index 50	17	40	4	22	30
	Weighted G-L IIT	47.6	62.7	20.5	52.5	52

 Table 7.1: Intra-Industry Trade of Bangladesh as

 compared to Other SAARC Countries

Source: Adapted from Rajeeb jain and J.B. Singh, "Trade pattern in SAARC countries: Emerging Trends and Issues", RBI., 2009

N.B.G-L Index 50 indicates intra industrial Trade no of industries (out of 99 in 2 digit level industry groups) with more than intra regional index of 50.

7.2 Vona Index of Intra Industry Trade

In view of several problems with GL index, Vona,S $(1990)^V$ constructed an index for measurement of aggregate intra industry trade across all the industries, which includes only two way flows of goods produced by the same industry, independently of their balance. It is defined as the proportion of trade values of

 Table 7.2: Vona Intra Industry Index for Traded

 Commodities of Bangladesh

	Vona intra				
	industry Trade			Vona	
	index of			Index-Intra	
	consumer		Vona Index-	Industry	Total Vona
	goods=	Vona Index-Intra	Intra	Trade for	Index of
	consumer goods	Industry Trade	Industry	materials	intra industry
Economic	trade total/total	for Materials of	Trade for	of capital	trade for all
Phases	trade	Consumer goods	capital goods	goods	commodities
1972-80	0.26	0.32	0.15	0.10	0.24
1981-85	0.36	0.34	0.17	0.10	0.29
1986-90	0.47	0.29	0.09	0.14	0.32
1991-95	0.52	0.23	0.09	0.11	0.35
1996-00	0.43	0.21	0.09	0.12	0.31
2001-05	0.22	0.39	0.10	0.03	0.28
2006-10	0.12	0.48	0.09	0.01	0.28
Average	0.34	0.32	0.11	0.09	0.29

Source: Calculated from the Data of BBS

commodities having simultaneous exports and imports within an industry to total trade values. The Vona Index is expressed as:

$$V = \frac{\sum_{i=1}^{m} (X_i + M_i)}{\sum_{i=1}^{n} (X_i + M_i)}$$

Where 'm' is number of industries having simultaneous exports and imports ,and

Where 'n' is number of industries either with exports or imports or simultaneous exports and imports.

As our results of calculation of Vona index show, intra industry trade of Bangladesh is at a very low level of 28%.in the recent period and there is no sign of increase (Table-7.2). Intra industry trade happened here in consumer goods and materials for consumer goods. In capital goods and materials for capital goods, intra industry trade is abysmally low and ironically declined gradually. This is a symptom of technologically backward trade specialization and trade pattern of Bangladesh.

8. Intra Regional Trade and Similarity of exports and Imports of Bangladesh in the SAARC region

8.1 Intra Regional Trade and Bangladesh Role

Intra regional trade is relatively meagre, and Bangladesh's role in intra regional trade is also low though has been increasing. India and Pakistan are having lower role. Bangladesh imports more than it exports to the region, India and Pakistan are net exporters and need to import more from the regional countries. Srilanka, Nepal and Afganistan are playing greater role in intra regional trade but these countries are net importers (Table-8.1). Bangladesh need to explore more export

Country	1985	1990	1995	2000	2004	2007
Afghanistan	11.4	14.5	11.1	29.7	35.3	43.1
Bangladesh	4.7	6	12.8	7.9	10.5	9.4
India	1.7	1.6	2.7	2.5	3	2.7
Maldives	12.5	12.7	14.3	22.2	19.8	12.2
Nepal	34.3	11.9	14.8	22.3	47.2	60.5
Pakistan	3.1	2.7	2.3	3.6	5	6.6
Sri Lanka	5.5	5.6	7.8	7.4	15	18.9
Total SAARC	3.7	2.7	4.3	4.5	5.0	4.8

Table 8.1: Intra-regional Trade Share of South Asia's Total Trade (Per cent)

Source: Regional Co-operation Strategy and Programme, South Asia (2006-2008), ADB

opportunities in the region. Intra regional trade is beneficial for Bangladesh because of low trade transaction cost involved at minimum time of delivery with greater contact of the parties. Regional market and its changes are easier and quicker to know and forecast with more friendly behavior of regional firms. Moreover, it will help enjoying economies of scale.

8.2 Similarity of exports and Imports of Bangladesh in the SAARC region

One of the questions regarding trade pattern in regional context is whether Bangladesh exports and imports similar products in the context of similar tastes and development level. The similarity of export pattern may be gauged from the Export Similarity Index developed by Finger and Kreinin (1979)^{V1} Rank correlations and Similarity indices show that in both exports and imports Bangladesh has high similarity correlation with SAARC countries (Table-8.2). Highest similarity of Bangladesh exports exists with Srilanka indicating high competing situation with it. Similar is the case with Pakistan in export market. In import, Bangladesh has highest similarity with Srilanka. India's export is practically complementary to imports of Bangladesh and Srilanka and latter countries would compete with each other for similar imports from India. All these explain low intra regional trade performance of Bangladesh in South Asian region as the member countries of the South Asian region tend to specialize in broadly similar types of items for exports and for similar types of imports. Common exporting items of Bangladesh with South Asian countries are identified as 11 and belong to two broad categories-fish and garments (Table-8.3). We are to identify areas of intra industrial trade with these countries in future. We have high similarity index with Cambodia also revealing its competitive character with Bangladesh. Though export complementarities of Bangladesh may be weak with Srilanka, would be strong with India and Pakistan for import of raw materials, intermediate and capital goods. Import from these two regional countries will be complementary to the Bangladesh exports to the region and rest of the world. Low trade transaction cost advantage with neighbouring India will help increased imports of Bangladesh at lower price to help increased export to the world at competitive price. Bangladesh as a geographically small country with huge population has to rely on its exports for development increasingly by using resources and market of South Asian region and its own surplus labour. As bilateral correlation coefficient of GDP of Bangladesh with India, Pakistan and Srilanka during 1960-2006 shows, there exists high economic complementarities in between these countries. So potentials of high growth of these countries may boost the trade flows of Bangladesh with these regional countries. Only

 Table 8.2: Rank Correlation and Similarity Index of Bangladesh Exports and Imports of Bangladesh with SAARC countries (2004)

Country	India	Maldives	Pakistan	Srilanka
Rank Correlation of Bangladesh exports	0.49*	0.32	0.53*	0.55*
Baskets				
Export Similarity Index of Bangladesh	20.4	35.8	32.7	57.8
with SAARC countries				
Rank Correlation of Bangladesh Imports	0.63*	0.59*	0.67*	0.76*
Baskets				
Bilateral Correlation of Bangladesh GDP	0.57*	0.29	0.57*	0.47*
with SAARC Countries (1960-2006)				

Source: Adapted from Rajeev Jain and J.B.Singh, RBI,

		Тор 20	Other than top 20
030613	Shrimps and prawns, frozen	BD, IND	PAK, SL
610510	Men's, boys shirts, of cotton, knit	BD, Pak,SL	India
610910	T-shirts, singlets and oth	BD, IND,SL	Pak
610990	T-shirts, singlets etc, of materials nes	BD, SL	Ind, Pak
611020	Pullovers, cardigans etc of cotton	BD, SL	IND, PAK
620342	Men's, boys trousers & shorts of cotton non-knit	BD, MD.Pak.Sl	Ind
620343	Men's, boys trousers short non-knit	BD, SL	Ind, Pak
	Women's, girls trousers & shorts of		
620462	cotton non-knit Mon's how shirts of sotton non	BD, MD,SL	Ind, Pak
620520	knit	BD,Ind,SL	Pak
	Women's, girls blouses & shirts of		
620630	cotton,non-knit	BD, IND,SL	Pak
620600	women's, girls blouses & shirts of		Ind Dal
020090	materials nes, non-Khit	BD, SKL	пи, Рак

Table 8.3: Common Exporting Items Bangladesh with other SAARC countries

Source: Compiled from UNDATA Base, 2004

requirement is to increase the tradability of key resources of South Asian countries to complement each other in their economic development. Recent move for special and differential treatment accorded to Bangladesh (for being LDC) by India and Pakistan will help increased trade flows of Bangladesh in the region and increased export competitiveness with rest of the world. And development of Bangladesh would boost up demand of Bangladesh for regional goods because of similarity of preferences of the people.

8.3 Sensitive List of India and Competitiveness of Bangladesh in these items

Taneja et al have made exercise to show the vulnerability of items of sensitive items of India with respect to different countries of SAARC^{VII}. The sensitive list under consideration for Bangladesh consists of 298 items (excluding 33 food security and revenue items). In addition 147 items in the apparel sector where India granted duty free access have also been classified on the basis of paired RCAs to identify items where India was most vulnerable. They have found out only eight items) in which India is not competitive in the international market but Bangladesh is. These 8 items are very meagre, and for Bangladesh also these are minor exports. Thus, India can withdraw sensitive list entirely with respect to Bangladesh.

9. Indicators of Revealed Comparative Advantage and Specialisation pattern of Bangladesh

9.1 Revealed Comparative Advantage

A statistical indicator that reflects a country's comparative advantage or disadvantages of different products can be employed for evaluating the performance and specialization of a country. Here quantitative comparison would be made between different products in the same country vis-a-vis rest of the world. Changes in the indicator of comparative advantage may be due to both a shift in specialization and a variation in trade performance. We have used Balassa index of revealed comparative advantage and came up to use standardized revealed comparative advantage as analytical technique to uncover changes in comparative advantage patterns over time and make comparisons between the products. Along with it, we have tried to use trade specialization index to see whether the products are specialized in the lines of their comparative advantage. Our study focus is on time series data of a wider range of commodity groups and market destinations to make dynamic assessment of comparative advantage of Bangladesh in the global market.

9.1.1 Balassa Revealed Comparative Advantage (RCA) for Commodities.

Balassa (1965) suggested an index measuring comparative advantages^{viii} and it is common in the literature^{ix} to measure comparative advantage with the help of the Balassa revealed comparative advantage index (RCA). However, as Siggel $(2007)^{X}$ pointed out, Balassa's index measures competitiveness rather than comparative advantage, since cost measured in terms of market prices reflects competitive advantage rather than comparative advantage which requires equilibrium prices. The use of RCA hence captures competitiveness of a country's export products vis-à-vis each other in the international market. This is very much in line with the Ricardian concept of comparative advantage which proposes that by producing the good in which it is relatively efficient (relative not to the other country but relative to the other goods), and importing the other good, each country can gain. The concept of RCA can also be used by pairing the RCAs for products of an exporting country with the corresponding RCAs of another country. This provides an approach for classifying pairs of items for any two exporting countries on the basis of their competitiveness. This can also serve as a rationale for identifying items that are most vulnerable to competition^{Xi}. Revealed Comparative Advantage (RCA) index of a country depicts the relative share of a commodity in the country's total exports with respect to that commodity's share in world exports.

The country would be considered to have a comparative advantage or disadvantage in products depending on whether the ratio of RCA is greater or less than 1.It ranges from 1 to infinity when it enjoys comparative advantage, but zero to one when it has comparative disadvantage for the products. To address asymmetric values of the index, revealed symmetric comparative advantage may be calculated (SB) as proposed by Dalum et al (1998)xii. SB=(RCA-1)/(RCA+1).The SB ranges from -1 to 1. Bangladesh has been enjoying high revealed comparative advantage in knitted garments, woven garments, jute and jute goods, other textile articles, frozen fish, leather, footwear, headgear and its parts. Our estimate shows that 24.7% products of Bangladesh out of 1571 products at 4-digit level are enjoying comparative advantage in world market and their average RCA is around 20 and their average symmetric RCA is around 0.90 i.e. very high. Trade specialization index of these products is on average around 0.75. But these products categories are facing high concentration in terms of not only of products (88%share for three products) but also of market destinations (55% for three markets). These results indicate that attention need to be made not only on revealed comparative advantage of products for specialisation, but also on diversification of export items and market destinations. This is important for ensuring sustainability of export earnings on a long term basis.

Our analysis of Revealed comparative advantage of products suggests that Bangladesh possesses strong comparative advantage in knitwear and woven garments, and gained significant comparative advantage over time (Table-9.1). At the same time, traditional export commodities including tea and leather lost their previous comparative advantage. The sectors which came into dynamism are footwear, ceramic products, household articles including tableware and

Table 9.1: Revealed Co	omparative Advant	age (RC	A), Trade Sp	ecialisation l	ndex and Con	centration R	atios of 2009 for	
Bi	angladesh exports (out of	1571 Produc	ts) by Comm	odities at 4 di	git level		
Products having comparative	RCA		Exports of	Balance	Specialisatio	on ratio of	Concentration	
advantage	RCA		Bangladesh	(000 Dollars)	n Index (TSI)	products	ratio of markets	
Knitted Garments	36	0.95	45.42	7,735,614	1.03	69	44	1
Non-Knit Garments	30	0.94	37.37	6,317,071	1.01	67	64	
Other Textile Articles Made	12.2	0.85	4.03	672,706	66.0	51	41	
Head Gear and Parts	14.5	0.87	0.58	94.735	0.96	100	83	
Vegetable Fibres anfabrics	113.5	0.98	2.2	352.306	0.87	16	49	
Leather	6.1	0.72	0.98	135.363	0.71	94	61	
Fish	5.1	0.67	2.87	463,695	0.96	16	49	
Footwear	0	0.33	1.33	187.913	0.74	85	51	
Tobacco and Mfg substitutes	1.1	0.05	0.29	38,960	0.69	98	43	
Fertilizer	1.1	0.05	0.35	-408.371	-0.74	100	81	
All	20.24	0.91	95	15.592.673	0.75	86	55	
Potential Products Ceramic Products Pharmaceuticals	0.8 0.1	-0.11 -0.82	0.35	-4.844	-0.03	95 92	50 37	
Plastic Products	0.1	-0.82	0.23	-622,281	-0.86	68	58	
Leather goods	0.4	-0.43	0.12	6,881	0.24	59	69	
Meat, fish and food	0.4	-0.43	0.12	18,616	0.88	66	50	
								L.

Source: Calculated from UNCOMTRADE data

Type of changes in Comparative Advantage	No of Products	%
Stably high and Increased	5	5.10
Advantage Lowered	4	4.08
Shift from disadvantage to advantage	3	3.06
Disadvantage reduced	7	7.14
Increased Disadvantage	24	24.49
Shift from advantage to disadvantage	55	56
Total	98	100.00

 Table 9.2: Pattern of Changes of Revealed Comparative Advantage of 98

 Products at 2-digit Level during 2005-09

Source: Calculated from the data of UNCTAD

kitchenware, light engineering, pharmaceuticals, bicycles, tent, home textiles and vegetables. It is established that differences in productivity, price, quality and timely delivery are important determinants of bilateral trade flows. Under these circumstances, the challenges for Bangladesh are to increase both price and non-price competitiveness and find new potential industries and markets for vitalizing the exports of the country in the wake of acute global competition.

9.2. Trade Specialisation Index

Single flow indicator as Revealed Comparative Advantage Index for exports or relative export growth does not allow synthetic assessment of the country's position in international trade because of differences of country's degree of import dependence. Solution of this problem requires consideration of both export and imports. In that situation, the comparative advantage can be better measured by trade specialization index^{XIII}.

9.2.1. Trade Specialisation Index for Commodities

Trade specialization index (TSI) is an important indicator of trade pattern and competitiveness of a country. The index is computed as the difference between normalized trade balance at product level and normalized level at country level.

$$TSI= \frac{X_i - M_i}{X_i + M_i} - \frac{X_t - M_t}{X_t + M_t}$$

=Normalised Trade Balance (NTB)-Global balance(Average NTB)

$$\mathbf{STSI} = \frac{TSI}{1 - NTB}$$

Standardized trade specialization index (STSI) depicts both the commodity and the geographic specialization of the country in international trade. Bangladesh is

having comparative advantage in 19% of products at 2-digit level and 10% at 4 and 6-digit levels in 1998. If we analyse export performance of Bangladesh by products for 2009 as in Table 9.2, we may see that products having comparative revealed disadvantage may enjoy comparative advantage as per Trade specialization index. However, in most cases, products with revealed comparative advantage would have comparative advantage as per Trade Specialisation index.

As per geographical trade specialization is concerned, as the evidence shows, Bangladesh has been geographically specialized in two regions: European Union and North America specially USA. It does not enjoy geographic comparative advantage in Asian countries except Thailand. Bangladesh enjoys slight geographical advantage with Vietnam, Laos and Cambodia among other Asian countries. Bangladesh's disadvantage with Philippines and Middle East is small and tends to be overcome in course of time. It is notable that Bangladesh's comparative disadvantage with Asian giants like Japan, China, India and Korea Republic could not be reduced over the years. This raises the question regarding effectiveness of export promotion efforts of Bangladesh in respect of these countries. Narrowness of exports in number of items and markets talks about vulnerability of Bangladesh in international trade.

Our calculation results revealed that trade specialisation index has been increasingly positive in consumer goods in all the economic phases with average positive figure 0.31 (Table-9.3). There has not been any sign of trade specialisation in capital goods in any phases. Trade specialization in intermediate goods has been positive until 1990 after which it has been persistently negative. This is because of low technology base of the production system of Bangladesh and also of trade liberalization and increasing import dependence for raw materials and capital goods.

	•	, ,,	
	Trade Specialisation	Trade Specialisation	Trade Specialisatior
Economic	Index of Intermediate	Index of Capital	Index of Consumer
Phases	Goods	goods	goods
1972-80	20.61	-40.96	16.87
1981-85	14.23	-42.39	64.66
1986-90	17.43	-58.03	47.81
1991-95	-9.07	-69.68	34.09
1996-00	-27.57	-73.47	18.70
2001-05	-14.66	-73.68	16.25
2006-10	-27.32	-74.50	20.17
Average	-3.76	-61.82	31.22

Table 9.3: Trade Specialisation Index by Types of Goods Traded

Source: Estimated by the author from the data base of BBS

9.2.2 Net Revealed Comparative Advantage or relative trade Advantage

The Relative Trade Advantage Index (RTA), which was first used by Scott and Vollrath (1992)^{xiv}, shows the net trade advantage/ disadvantage. This index is computed as the difference between the Relative Export Advantage (RXA) and the Relative Import Penetration Index (RMP). Considering both exports and imports, the RTA is a more comprehensive measure of competitiveness, and expressed as:

RTAij = RXAij - RMPij.

The competitive advantage revealed by this indicator is implicitly weighted by the importance of the relative export and the relative import advantages. It can be greater or less than zero. A positive value expresses a situation of net competitive advantage, and a negative one shows a competitive disadvantage. As data analysis shows, net relative advantage index has been increasingly positive in respect of manufactured items specially textiles and clothing and other manufactured goods in casof Bangladesh^{xv}. But as compared to India, its weakness in competitiveness is evident. While India enjoys net relative trade advantage in 8 out of 10 categories, Bangladesh has positive net trade advantage only in two product categories of manufacture at 2-digit level. India has net trade disadvantage in fuels and machinery and transport equipment. Bangladesh has net relative trade disadvantage in all five categories of primary commodities and chemical products, iron and steel and machinery and equipment under manufactured items section. This clearly demonstrates shallowness of net trade competitiveness of Bangladesh relative to India.

9.3 Geographic Revealed Comparative Advantage Index

Geographic specialization index shows. He revealed comparative advantage in a particular market and geographic specialization. The most commonly used index for this is Balassa Geographic Specialisation Index (GB) as Share of Bangladesh export to the market A to the share of World Export to the market A. A country is said to have specialisation and accordingly comparative advantage in the export in region 'A', if GB is greater than 1.

A symmetric Balassa (SGB) index is assessed as: SGB= $\frac{GB-1}{GB+1}$

The symmetric Balassa Geographic specialisation index for Bangladesh reveals that Bangladesh has comparative advantage in export to North America and Western Europe (Table-9.4 and Fig.8). Bangladesh need to explore potential areas of its comparative advantage in other industrialized and advanced developing

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countries along with consolidating the existing markets. Since garments constitute 78% of our exports, we shall see the Geographic revealed comparative advantage in knit and non-knit garments exports of Bangladesh. The results show that in knit garments, Bangladesh has been enjoying high revealed comparative advantage in these products with the main players (Table-9.5). In knit garments there has been more acute competition from China, Turkey, Cambodia, Vietnam, Pakistan, Srilanka and Tunisia. Here biggest market player is China with 33% market share of global knit exports, and Bangladesh is having only 4.85% market share. There is enough scope for Bangladesh to try to take some of the China's share in course of upward development of China with some structural change in its export basket. For China, knitwear constitutes only 4.5% of its total exports whereas for Bangladesh it constitutes 45% of total exports. Next to China, important competitors are Turkey, Vietnam, India and Cambodia. Bangladesh has to compete with them not only with low wage competitive edge but also higher productivity and fetching higher values of exports in diversified items in the category. In non-knit garments, most of the big players are facing revealed comparative disadvantage (Table-9.6), while Bangladesh has been enjoying relative advantage. China's position in recent years though awkward is having 34% market share of non-knit garments. Here lies the big potential for Bangladesh to look into. Main competitors here are Vietnam and Turkey. Other competitors with high revealed comparative advantages are Srilanka, Cambodia, Tunisia, Egypt, Morocco, Pakistan, Bulgaria, Rumania and Indonesia.

We have examined the revealed comparative advantage of Bangladesh in two markets-US and EU markets. From the calculation results (Table-9.7), it is indicated that Bangladesh has been enjoying revealed comparative advantage in general for garments products in both US and EU markets. Bangladesh has been enjoying revealed comparative advantage in garments exports in EU with respect to all countries except Turkey in all the periods. Bangladesh does not enjoy much revealed comparative advantage in US market as in EU market with respect to countries under review and is in tough competition with them. However, its share in US market has increased considerably during the period under review.

In order to analyse revealed comparative advantage in EU market with main six countries-China, India, Vietnam, Indonesia, Mexico and Turkey during 1990-2008, we have chosen five main garments: (i)T-shirts, (ii)Jersey, pullovers, (iii) Men/boys' Suits, Jackets, Blazer, (iv)Women/Girls' Suits, Jackets, Blazer and, (v) men's/boys' shirts. Calculation results (Table-9.8) show that in T-shirts, Jersey, pullovers and Men/boys' Suits, Jackets, Blazer, Blaze

overwhelming revealed comparative advantage with respect to the comparator countries except Turkey. In Women/Girls' Suits, Jackets, Blazer, Bangladesh experienced comparative disadvantage with comparator countries except Mexico. In men's/boys' shirts, Bangladesh has been enjoying comparative advantage with China and Mexico but disadvantage with other four countries. Implication of these results is that Bangladesh has to consolidate its area of advantage and must make drives to win over others in the areas of disadvantage. There is enough

	-	-						
Geographical	Balassa	RCA			Symmetri	c Balassa	Index	
•	1988	1993	1998	2009	1988	1993	1998	2009
North America	1.6255	1.9049	1.7653	2.3	0.2383	0.3115	0.2767	0.394
Western	0.7124	0.9974	1.09	2.4	-0.17	0.0013	0.0463	0.41
Europe								
Other	0.798	0.4003	0.3856	0.40	-0.1123	-0.42	4434	-0.42
Industrialised								
Countries								
Africa	1.87	0.573	0.192	0.32	0.30	-0.27	-0.67	-0.51
Developing	1.099	0.543	0.426	0.65	0.048	-0.29	-0.402	-0.212
Asia								
Developing	0.1247	0.08	0.805	0.135	7783	-0.852	851	-0.074
America								
Total Export	1	1	1		0	0	0	

 Table 9.4 Geographic Revealed Comparative Advantage of

 Bangladesh Exports in Different Markets, 1988-2009

Source: Author's Calculations and BIDS Study, 2004.

Fig. 9: Development of Revealed Comparative Advantage of Core Importing Nations of Bangladesh Exports during 1973-2010



					Growth of		
			Global		share in		
	Exports in	Exports as	Market	Growth	world	Balassa	
	value in 000	% of total	share	of	exports	RCA	
Country	Dollars	exports	(%)	exports	(p.a.)	Index	SRCA
World	159,905,269	100	1.26	6	2		
China	53,762,941	4.47	33.62	15	9	3.5	0.56
Hong Kong	11,798,633	3.58	7.38	-3	-9	2.8	0.47
Bangladesh	7,754,376	45.4	4.85	18	12	36	0.95
Italy	7,030,625	1.74	4.4	2	-5	1.4	0.17
Turkey	6,927,384	6.78	4.33	1	-5	5.4	0.69
Germany	6,859,099	0.61	4.29	10	3	0.5	-0.33
India	5,187,279	2.93	3.24	14	7	2.3	0.39
Viet Nam	4,363,794	7.28	2.73	26	20	5.8	0.71
Belgium	4,066,064	1.1	2.54	11	5	0.9	-0.05
France	3,883,674	0.84	2.43	5	-1	0.7	-0.18
Spain	3,592,810	1.61	2.25	20	14	1.3	0.13
Netherlands	2,775,555	0.64	1.74	13	6	0.5	-0.33
Cambodia	2,568,264	56.1	1.61	13	6	45	0.96
Indonesia	2,528,006	2.17	1.58	8	2	1.7	0.26
UK	2,182,773	0.62	1.37	1	-5	0.5	-0.33
USA	1,952,903	0.18	1.22	-7	-13	0.1	-0.82
Thailand	1,858,902	1.22	1.16	-1	-7	1	0.00
Portugal	1,818,325	4.19	1.14	-2	-8	3.3	0.53
Pakistan	1,680,740	9.57	1.05	0	-6	7.6	0.77
<u>Sri Lanka</u>	1,580,890	22.2	0.99	9	3	18	0.89
Mexico	1,547,246	0.67	0.97	-12	-18	0.5	-0.33

Table 9.5 Geographic Revealed Comparative Advantage of KnitGarments of Bangladesh with important suppliers, 2009

Source: Calculated from the data of UNCOMTRADE

			ucon re	unite to	mportan	couppile	10 (2000)	/	
Country	Exports as % of total exports	Imp orts as %of total imp orts	Exports as % of world exports	Imports as % of world imports	Growth of exports in value (% p.a.)	Growth of imports in value (% p.a.)	Net Normal ised Trade (X-M) / (X+M) * 100	RC A	SRC
World			1.24	1.19	2	1	0.7		
China	3.89	0.1	29.69	0.66	7	6	95.7	0.13	-0.
Italy	2.74	1.78	7.07	4.73	1	4	20.5	0.39	-0.
Hong Kong	3.03	1.84	6.35	4.19	-5	-5	21.2	0.48	-0.
Germany	0.77	1.58	5.49	9.58	6	3	-26.4	0.14	-0.
Bangladesh	37.4	0.35	4.05	0.04	12	10	98	9.23	0.
India	3.46	0.03	3.89	0.04	5	19	97.8	0.89	-0.
France	1.17	1.93	3.45	6.71	4	3	-31.4	0.34	-0.
Viet Nam	8.51	0.49	3.24	0.22	13	34	8/.4	2.63	0.
Belgium	4.21	1.24	2.75	2.81	-5	20	-6.2	0.42	-0
Spain	1.04	2.17	2.45	4.03	10	6	-0.2	0.42	-0.
Indonesia	2.69	0.11	1 99	0.07	0	37	93.5	1 35	-0.
Netherlands	0.66	1.08	1.81	2.66	9	7	-18.3	0.36	-0.
UK	0.78	2.18	1.73	6.78	2	-1	-58.9	0.45	-0.
Mexico	1.07	0.41	1.56	0.62	-14	-4	43.6	0.69	-0.
Morocco	16.1	0.56	1.42	0.12	2	13	84.7	11.3	0.
Tunisia	15.5	2.11	1.42	0.26	-2	-1	69.5	10.9	0.
Romania	5.15	0.85	1.33	0.3	-12	6	63.9	3.87	0.
Denmark	2.09	2.48	1.23	1.31	5	4	-2.4	1.70	0.
Poland	1.25	1.09	1.09	1.05	3	30	2.3	1.15	0.
USA	0.15	2.01	0.98	20.71	-4	-5	-90.8	0.15	-0.
Sri Lanka	21.6	0.44	0.98	0.03	-1	-3	94.7	22.0	0.
Pakistan	6.87	0.05	0.77	0.01	-2	19	97.2	8.92	0.
Thailand	0.74	0.15	0.71	0.13	-8	16	69	1.04	0.
Austria	0.79	1.8/	0.66	1.65	2	4	-42.1	1.20	0.
Combodio	10.0	1./0	0.05	1./9	-1	12	-40.2	34.6	-0.
Bulgaria	19.8	0.44	0.57	0.01	-5 A	12	52 62 0	0.62	0.
Found	3.29	0.85	0.55	0.15	-4 17	4 14	57.1	9.02	0.
Portugal	1.92	1.38	0.53	0.62	-5	6	-7.3	3.62	0.
Philippines	2.09	0.13	0.51	0.04	-13	8	86.3	4.10	0.

 Table 9.6: Geographic Revealed Comparative Advantage of Non-Knit Garments

 exports of Bangladesh relative to important suppliers (2009)

Source: Calculated from the data of UNCTAD, 2010

Table 9.7: Symmetric Revealed Comparative Advantage (SRCA) of
Bangladesh with the Core Exporting Countries of RMG to
US and EU Markets in 2000, 2005 and 2009

Exporter	2000			2005			2009		
F	Global Market Share	US	EU-15	Global Market Share	US	EU-15	Global Market Share	US	EU-15
Banglades									
h Share in	2.6	3.4	3	2.5	3.2	3.5	4.3	5	4.7
	Global	SRCA c	of	Global	SRCA	A of	Global	SRCA c	of
	Market	Banglad	esh with	Market	Bangl	adesh	Market	Banglad	esh with
	Share	the coun	tries	Share	with t	he	Share	the coun	tries
					count	ries			
China	18.2	0.13	0.38	26.8	0.13	0.38	31.7	-0.03	0.11
Turkey	3.3		-0.29	4.3		-0.12	3.5		-0.24
India	3	0.10	0.03	3.1	-	0.14	3.6	-0.02	0.005
Vietnam				1.7	-	0.55	3	-0.36	0.50
Indonesia	2.4	-0.05	0.16	1.8	-	0.39	1.8	-0.47	0.28
Mexico	4.4	-0.39		2.6	-		1.3	-0.59	
Thailand	1.9		0.33	1.5	-	0.40	0.9	-0.39	0.10
Pakistan	1			1.3	0.28	-0.23	0.9	-0.32	-0.01
Banglades									
h in		0.13	0.07		0.12	0.17		0.07	0.04

Source: Calculated from the data of UN Comtrade, Eurostat, ITC and WTO, as compiled by WB,2009

		<u> </u>	<u> </u>		<u> </u>	
r	China	India	Indonesia	Mexico	Turkey	Vietnam
	HS Code 61	09:TShirts,Sir	nglets			
1990	0.18	-0.03	0.15	0.47	-0.30	0.21
2000	0.25	0.02	0.18	0.42	-0.34	0.25
2008	0.23	-0.02	0.20	0.42	-0.18	0.19
	HScode 611	0: Jersey, Pull	overs			
1990	-0.03	-0.04	-0.30	0.53	-0.69	-0.03
2000	0.10	0.02	-0.14	0.49	-0.37	0.13
2008	0.04	0.17	0.06	0.49	-0.02	0.06
	HScode 620	03: Men/boys'	Suits, Jackets,	Blazer		
1990	-0.20	0.00	-0.03	0.33	-0.63	-0.27
2000	0.20	0.00	0.05	0.30	-0.35	-0.06
2008	0.10	0.12	0.07	0.20	-0.55	-0.00
	HScode 620	0.08)4:Women/Gir	ls' Suits, Jack	ets, Blazer	-0.17	-0.13
1990	-0.79	-2.33	-0.60	0.22	-2.39	-0.53
2000	-0.22	-0.45	-0.21	0.36	-0.79	-0.12
2008	-0.23	-0.35	-0.06	0.32	-0.50	-0.32
	HScode 620	05:Men/Boys'	Shirts			
1990	0.27	-0.04	0.24	0.50	0.09	-0.05
2000	0.27	-0.06	0.07	0.53	0.12	-0.10
2008	0.09	-0.20	-0.08	0.53	-0.09	-0.18

Table 9.8: Symmetric Revealed Comparative Advantage Indices of5 Top RMG export Categories of Bangladesh to EU

Source: Calculated from the Data of UN Comtrade.

scope for diversification in new areas, and efforts should be oriented to the potential areas for exports diversification within garments before looking into areas of non-garments exports. We have huge .human skill and capital built up over the years and we could show here our competitive edge over others. Lastly, there is a big difference with China in our market share (near about 8 times than that of Bangladesh). Since we are enjoying revealed comparative advantage with

		• • •		
Countries/Regions	1989/90	1995/6	1999/00	2009-10
SAARC	-0.669	-0.825	-0.748	-0.37
India	-0.92	-0.9205	-0.915	-0.36
EU	0.25	0.53	0.56	0.63
USA	0.584	0.725	0.754	0.59
Japan	-0.45	-0.29	-0.68	-0.32
ASEAN	-0.55	-0.779	-0.73	
Korea	-0.97	-0.938	-0.918	-0.35
China	0.71	-0.68	-0.96	-0.39
Thailand	-0.94	-0.49	0.544	-0.37
Rest of the World	0.1224	-0.54	-0.56	
Total	0	0	0	0

Table 9.9: Standardised Geographical Specialisation Index (SGSI)

Source: Computed from Statistical Yearbook of Bangladesh, BIDS Study, 2004.

China in almost all important garment products market, we have enough scope to increase our market share here.

9.4. Geographic Trade Specialisation Index

Like Geographic Revealed comparative advantage, geographical trade specialization index also is positive for EU and North America and has increased over the years (Table-9.9). Side by side with consolidating these two regions, we are to diversify market destinations and increase the trade specialization index of rest of the world.

10. Market Share of Exports of Bangladesh and Status of Relative Competitiveness of Bangladesh

10.1 Market Share to World Exports and Imports

Bangladesh has experienced increase in market share of world exports from 0.04% in 1980 to 0.13% in 2008 and in share of world imports from 0.13% to 0.15% during the same period (Fig.9). Despite increased trade openness during



Fig.9 Market Share of Bangladesh in World Exports and Imports in %

1950-2008, market share of SAARC countries in total world trade has declined (from 3.71 to 1.39% in World exports and from 3.12 % to 2.31% in World Imports).Bangladesh position in respect of market share of world export and import is relatively better among SAARC countries except India and Pakistan..

10.2. Market Share of Major Bangladesh Commodities in World Exports Market

Though market share of Bangladesh in world exports constitute 0.13%, it is subject to cross sectoral variation (Table-10.1). Clothing export of Bangladesh is high as 4.55% of world export (in 2010), and Bangladesh ranks 2nd position in world garment export. Market share of other textiles is 14.5%. Market share of footwear is 1.85%. Next important export item of Bangladesh is fish having market share of 1.64%. Market share of vegetable textile fibres is around 0.69%. Market share of hides and skin is 0.27%. Market share of vegetables and roots is around 0.15%. Market shares of furniture and headgear and its parts are 0.15% and 0.13% respectively. Other important export items occupying good market share (more than (0.01%) are articles of leather, plastics, ships, boats and floating structure, coffee and tea, optical and medical apparatus, electrical and electronic equipment, ceramic products, vehicle, beverages, knitted fabrics, toys and printed books. Positive changes in market share during 2005-09 occurred in products of knit and non-knit garments, other made textile articles, sets, worn clothing etc. fish, articles of copper, furniture, products of animal origin, ships, boats and floating structure, manmade filaments, beverages, organic chemicals, salt, IT and consumer electronics, electrical equipments, footwear, plastic products and optical and medical apparatus. Only 25% products at 2-digit level have positive change of market share of Bangladesh.

Export Items	Marke World	t Share o Exports	f Comm	odities i	n the	Change of Share
Industry (Bangladesh)	2005	2006	2007	2008	2009	
00 All industries	0.09	0.09	0.09	0.1	0.13	0.04
62 Articles of apparel, accessories, not knit or crochet	2.39	2.64	2.76	4.1	4.85	2.46
61 Articles of apparel, accessories, knit or crochet	2.7	2.82	2.7	3.31	4.05	1.35
03 Fish, crustaceans, molluscs, aquatic invertebrates nes	0.71	1.4	1.03	1.44	1.64	0.93
53 Vegetable textile fibres nes, paper yarn, woven fabric	8.64	0.85	12.9	0.78	0.69	-7.95
63 Other made textile articles, sets, worn clothing etc	0.85	10.1	0.99	13.0	14.4	13.64
41 Raw hides and skins (other than furskins) and leather	0.87	0.9	0.91	0.87	0.27	-0.6
87 Vehicles	0.01	0.83	0.42	0.21	0.81	0.8
64 Footwear, gaiters and the like, parts thereof	0.14	0.01	0.17	2.06	1.85	1.71
07 Edible vegetables and certain roots and tubers	0.19	0.01	0.01	0.05	0.15	-0.04
65 Headgear and parts thereof	1.43	1.28	0.72	1.28	0.15	-0.57
08 Edible fruit, nuts, peel of citrus fruit, melons	0.08	0.01	0.27	0.07	0.06	-0.02
55 Manmade staple fibres	0.12	0.23	0.26	0.06	0.05	-0.07
69 Ceramic products	0.1	0.02	0.04	0.02	0.02	-0.08
06 Live trees, plants, bulbs, roots, cut flowers etc	0.2	0.08	0.12	0	0.05	-0.15
09 Coffee, tea, mate and spices	0.12	0	0.02	0.04	0.04	-0.08
90 Optical, photo, technical, medical, etc apparatus	0.01	0.01	0.09	0.02	0.09	0.08
49 Printed books, newspapers, pictures etc	0.05	0.07	0.01	0.06	0.03	-0.02
30 Pharmaceutical products	0.01	0.05	0.08	0.06	0.00	-0.01
74 Copper and articles thereof	0.01	0.06	0.05	0.03	0.02	0.01
10 Cereals	0.02	0.02	0.06	0.08	0.02	0
60 Knitted or crocheted fabric	0.04	0.07	0.04	0.02	0.02	-0.02
94 Furniture, lighting, signs, prefabricated buildings	0	0	0.23	0.12	0.13	0.13
22 Beverages, spirits and vinegar	0	0	0	0.03	0.03	0.03

Table 10.1: Market Share of Major Bangladesh Commodities inWorld Exports Market at 2-digit level during 2005-09

Source: Calculated from the data of UNCOMTRADE

10.3 Bangladesh Position in US and EU Garments Market

As already mentioned, Bangladesh ranks second in the world exports of garments having 4.3% of market share in 2009(Table-10.2). China ranking in first position of world garments exports has market share of 32% of global exports of garments .i.e. 8 times higher than market share of Bangladesh in garments exports. Only 8 countries are having 50% of market share of global garments exports. These are the main competing countries for Bangladesh in global market of garments. Five countries experienced increase and three countries decrease of market share of garment exports. This is indicative of tough competition in between the countries for maintaining market share in the global exports of garments.

Exporter	2000			2005			2009			Change of
	World	SU	EU-15	World	SU	EU-15	World	NS	EU-15	Share
Total RMG Exports	198			277			317			
in S (2000) Billions										
China	18.2	13.3	9.6	26.8	26.4	17.7	7 31.7	3901	24	13.5
Turkey	3.3		6.9	4.3		7.6	3.5		6.3	0.2
Bangladesh	2.6	3.4	ŝ	2.5	3.2	3.1	5 4.3	5	4.7	1.7
India	3	3.2	2.8	3.1	4.2	3.5	3.6	4.3	3.9	0.6
Vietnam			-	1.7	3.6	0.	7 3	7.4	1.1	1.3
Indonesia	2.4	3.5	2	1.8	4	1.5	2 1.8	5.8	1.1	-0.6
Mexico	4.4	13.1		2.6	8		1.3	5		-3.3
Thailand	1.9		1.1	1.5	2.9	0.9	0.0	2.4	0.8	7
Total of 8 countries	35.8	36.5	2639	43.7	52.6	35.65	50	30.4	43.0	14.25

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10.4 Sources of Changes of Market Share of Bangladesh

10.4.1 Sources of Changes of Market Share of Bangladesh compared to comparators

Since relative competitiveness is affected by multiplicity of factors (including differentials in productivity, prices, quality of export products and delivery and service schedules), its measurement involves analysis of price and non-price determinants of changes in competitiveness. To deal with this problem and to avoid the complexities of measurement of competitiveness, one of the ways is to use country's export shares as ex-post reflection of changes in competitiveness and the model measuring competitiveness under this approach receiving wider use and acceptance is constant market share model of analysis. This model examines firstly, whether and how far export is affected by world demand changes, secondly, whether exports are concentrated in commodities for which demand is growing relatively slowly, thirdly, whether exports are growing primarily to relatively stagnant region and whether the country in question is unable to compete effectively with other sources of export growth.

A change in market share as Stenizke (1979)xvi concludes reflects the changing competitiveness of a country's exports relative to those of the entire region. An unfavourable competitive shift reveals that some other producers enjoy competitive advantage to enter into the market and increase their market share at the expense of others. Thus, the competitive shift may be used as an indicator of changes in the competitiveness of a country's exports relative to those of other countries in the region. Here we have analysed the relative position of sources of changes of market share of Bangladesh relative to comparator countries. There has been positive change of market share of Bangladesh during 1995-07 by 23% (Table-10.3). The comparator countries having positive change of market share are China, Vietnam, India, Thailand, Turkey, Korea and Indonesia. Increased market share of Bangladesh is partly explained positively by increase of competitiveness and commodity adaptation effect and partly negatively by decrease of commodity structure, geographical structure and geographical interaction. Japan, Malaysia, Srilanka and Pakistan showed negative change of market share. Except in Japan, competitiveness has been always positive. The competitiveness is determined by both price and non-price factors. The price factor of competitiveness is influenced by among others, by effective exchange rate, cost and productivity, while the non-price factors involve quality and variety of products, marketing techniques and terms of export finance, transport, packing and delivery time. Negative commodity structural effect in Bangladesh reflects that commodity composition of export is concentrated on those in which world demand is not so high. Negative geographical structural effect reflects that export is concentrated in those areas which have not been growing fast. This implies Bangladesh should shift its product composition and market composition gradually to better end results.

Table 10.3	: Relative	Market Sh	are and Co	instant Mai	rket Share A	nalysis of v	vorld merci	handise e.	xports during	1995-2007
Exporting	Market	Market	Change	Competi	Commodity	Geograph	Structural	Commod	it Geographic	Residual
countries	shares1	shares	in 1995-	tiveness	Structure	ic	Interactio	У	adaptatioBa	adaptation
	995	2007	2007			Structure	u	Adaptation	n ngladesh	2
Bangladesh	0.10	0.12	23	43	-47	-5	-3	5	-	31
India	0.76	1.28	68	LL	-13	6	3	-11	-	8
China	4.2	10.5	150	172	-38	-14	8	6	5	15
Vietnam	0.11	0.41	2.76	336	L'C-	-2,2	33	-56	<i>L</i> -	19
Pakistan	0.15	0.15	ņ	13	ŝ	11	-2	18	-	-25
Srilanka	0.07	0.06	-16	Э	-29	4	-11	47	10	41
Turkey	0.49	0.88	81	86	8	17	12	1	0	-29
Thailand	1.2	1.24	4	25	-17	5	3	0	0	-5
Japan	9.08	5.33	-41	-33	-9	0	ų.	2	1	-2
Korea	2.55	2.85	12	2	-14	8	-18	9	1	27
Malaysia	1.71	1.52	-11	20	-10	L-	1	<mark>%</mark>	0	-6
Indonesia	1.05	1.07	2	19	-;	ς.	-1-	-14	-2	6
Source: Adapt	ted from the	UNIDO calc	sulation based	d on BACI						

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10.4.2 Sources of Changes of Market Share of Bangladesh by Sectors

Bangladesh has experienced positive change of market share in clothing with high positive competitiveness effect as its main factor showing that concentration in garments was correct one. Its positive change of market share in electric and electronic equipment with high competitiveness effect reflects that Bangladesh has the high potential in these sectors^{xvii}. Textiles also have positive growth with positive contribution of competitiveness to export growth. Similar is the case with leather products where competitiveness has significant impact. Another important emerging sector is IT and consumer electronics sector which have positive growth of market share and high positive contribution by competitiveness for its growth. Processed food also has positive change of market share with competitiveness as major factor for the same. Wood products, basic manufacture, chemicals, nonelectric machinery and fresh food had negative change of market share with negative sign of competitiveness but positive sign of geographic specialisation effect. These products require enhancement of competitiveness for increased market share. Thus efforts for consolidation of competitiveness in the products with positive change of market share should continue and side by side efforts should be made for enhancement of competitiveness in the sectors with negative growth of market share.

10.5 Global Ranking of Competitiveness

10.5.1 Status of Global Competitiveness of Bangladesh in of South Asia and competitors

Among 142 countries, Bangladesh ranks 108th position in competitiveness in 2011-12 (Table-10.4) reflecting how weak its position is in the global scale of competitiveness. Even Srilanka is holding 52nd position in global ranking. Bangladesh showed its weaknesses in almost all the components of competitiveness. Infrastructure (132nd), technological readiness (122nd), innovation (124th) and institutions (112th) are the weakest components in global competitiveness ranking of Bangladesh. Even its market size is smaller than Vietnam though population of Bangladesh is much larger. It is poor in quality of business environment and business competitiveness index. Its position in labour market efficiency also has deteriorated over time because of low wage environment of production amidst increasing cost of living despite abundant and surplus labour in the country. The position of the country is good only in maintaining financial stability and macroeconomic environment. Bangladesh ranks 115th in trading across borders with one of the highest time and cost required for exports and imports eroding its competitiveness among nations (Table-10.5).

Competiveness Indicators	IND	SRL	PAK	BD	Vietnam	China
Global Competitiveness						26
Index	56	52	118	108	65	
Basic Requirements	91	65	130	112	76	30
1.Institutions	69	50	107	112	87	48
2.Infrastructure	89	60	115	134	90	44
3.Macro stability	105	116	138	75	65	10
4. Health & Primary						32
Education	105	45	121	108	73	
Efficiency Enhancers	37	69	100	99	66	26
5. Higher Education and						58
Training	87	66	122	126	103	
6. Good Market Efficiency	70	41	93	81	75	45
7.Labour Market Efficiency	81	117	136	100	46	36
8.Financial Market						48
Sophistication	21	45	70	67	73	
9.Technological Readiness	93	85	115	122	79	77
10Market Size	3	67	30	49	33	2
Innovation	40	34	72	113	75	31
11.Business Sophistication	43	32	76	88	87	37
12. Innovation	38	42	75	124	66	29

 Table 10.4 Rank of Bangladesh compared to SAARC and other Asian Countries based on Indicators of Competitiveness (Out of 142 Countries)

Source: Adapted from Competitiveness Report 2011-12, World Economic Forum.

10.5.2 Status of Competitive Components of Export Performance of Bangladesh

Though 94% of Bangladesh export is composed of manufacture, per capita manufactured exports does not exceed 4.5% level of the world figure (Table-10.6). Even Cambodia has per capita manufactured exports three times higher than Bangladesh. Singapore has per capita manufactured exports to the extent of \$50028, Taiwan \$8053, Korea \$ 5766 and Malaysia \$4755. Share of medium/high technology exports in manufactured exports is as low as 3.4% in 2005 which is at the level of 5% of the world, which is unbelievably low. This implies that we have no primary goods for exports and our manufacture for exports is low technology based which can not command high value nor can it produce innovative products for diversification of export basket. Even these low technology based exports are dependent on imports. Our position is not comparable with comparator countries.

10.5.3 Global Ranking of Sectors in terms of Competitiveness indicators in Bangladesh

We have analysed the global ranking of Bangladesh by sectors^{xviii}. Ranking in export growth (Table-10.7) is satisfactory in clothing, textiles, processed food, IT

& Consumer electronics, electric and electronic equipment and leather products. Ranking in market share and net exports is high for garments, textiles and leather goods followed by IT and consumer electronics. Ranking in respect of per capita exports is low across the sectors but relatively better in clothing, leather products and textiles. Ranking in product concentration is very poor across the sectors but a bit better in textiles, leather products and clothing. Ranking in terms of market concentration is better in all sectors except IT & Consumer electronics, electric and electronic equipment. Ranking in respect of competitiveness effect is better in clothing, leather products, textiles processed food, IT & consumer electronics and Electric equipment and electronics. Ranking in terms of matching with world

Table 10.5: The (Comparative Positio	n of Bangladesh in	Trading (Across	Border)
		0	0,	/

		Trading		Cost to		Cost to
		Across	Time to	Export (\$		Import (\$
		Borders	Export	per	Time to	per
		(Rank)	(Days)	Container)	Import(Days)	Container)
	Bangladesh	115	25	965	31.00	1370.00
Doing	Singapore	1	5	456	4.00	439.00
Business	India	109	16	1095	20.00	1070.00
Report 2012	Pakistan	75	21	660	18.00	705.00
	Bangladesh	112	25	915	31.00	1390.00
Doing	Singapore	1	5	456	4	439
Business	India	100	17	1055	20	1025
Report 2011	Pakistan	81	21	611	18	680

Source: Adapted from Doing Business Report 2011 and 2012, World Bank.

Table 10.6 Comparison of Competitive Components of	
Export Performance of Nations	

	Manufactu per Capita	red Exports (dollars)	Share of exports	f Manufactured in total exports in %	Share of Technolo	medium/high ogy exports in	
Country World	2000 824	2005 1235	2000 82	2005 81	2000 64.3	2005 62.4	
Bangladesh	39	56	92.3	94.0	3.3	3.4	
China	182	556	92.1	95.1	45.3	57.5	
India	37	82	83.5	87.3	19.8	32.6	
Indonesia	210	251	69.7	64.5	34.1	33.1	
Japan	3598	4387	95.2	94.2	85.2	82.0	
Malaysia	3815	4753	89.3	85.5	76.4	72.1	
Korea, Rep	3582	5766	97.8	97.9	69.6	75.1	
Singapore	33314	50028	97.1	94.6	77.8	72.1	
Taiwan	6494	8053	97.5	96.8	71.3	70.2	
Thailand	957	1498	85.5	87.4	59.5	61.6	
Turkey	361	925	88.6	90.8	31.9	40.6	
USA	2480	2707	89.7	88.7	74.5	72.1	
Viet Nam	87	211	46.8	54.0	21.5	21.4	

Source: Adapted from UNIDO Data Base, 2009

Tabl	le 10.7	: Clob	al Rar	ıking c	of Sect	ors in	terms o	if Trade	related l	Econor	nic indic	ators			
	Fresh food	Proc esse d food	Woo d prod ucts	Text iles	Che mica Is	Leat her prod ucts	Basic manufact ures	Non- electronic machinery	IT & Consumer electronics	Electr onic compo nents	Transpo rt equipm ent	Clothi ng	Miscell ancous manufa cturing	Min erals	
Export growth in value, p.a. (134	25	136	30	139	54	131	131	29	39	120	7	134	18	
Net exports (in thousand US\$)	157	145	109	122	118	Π	122	104	75	81	83	2	107	117	
Per capita exports US\$/inhabitant)	167	158	142	80	141	75	140	138	116	127	130	41	140	157	
Share in world market (%)	73	119	134	29	96	34	110	98	87	102	86	4	88	121	
Product diversification (N° of															
equivalent products) Product concentration	138	89	46	75	117	55	122	126	11	83	129	83	76	80	
(Spread)	16	90	85	63	106	53	112	117	103	66	116	65	78	106	
Market diversification (N° of													2		
equivalent markets)	31	30	39	16	52	17	38	66	09	67	102	23	49	99	
Market concentration															
(Spread)	56	99	80	26	71	29	72	101	62	80	87	26	65	108	
Competitiveness effect, p.a.															
(%)	135	19	132	29	133	35	125	133	38	32	115	7	132	15	
Initial geographic															
specialisation, p.a. (%)	89	47	2	86	27	105	47	35	19	23	126	79	116	54	
Initial product specialisation,															
p.a. (%)	III	142	-	117	6	75	27	18	1	114	54	111	99	84	
Adaptation effect, p.a. (%)	70	36	143	10	149	34	132	119	110	82	67	14	73	26	
Matching with dynamics of															
world demand	16	70	38	85	52	48	8	21	15	~	123	115	16	52	
Absolute change of world															
market share (% points p.a)	151	64	103	6	118	63	105	110	43	63	112	2	113	58	
Average Index: Current Index	120	125	121	58	122	24	130	135	110	114	130	8	101	141	
Average Index: Change Index	101	46	32	81	52	51	17	24	5	7	138	105	110	П	
Source : Adapted from Date	a of UN	CTAD,	2010												

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demand is high for IT &Consumer electronics, electrical and electronic equipment and non-electric machinery. Ranking in terms of change in market share, clothing, textiles, IT & consumer electronics performed better.

11. Findings and Conclusion

Trade intensities have increased over time in Bangladesh. However, Bangladesh product is majorly sold in domestic market despite steady efforts for export oriented development. Coverage of imports by exports has increased over time and now though lags behind India and Bhutan in the region. There is a huge trade deficit increasing in absolute terms and as proportion to GDP in the country posing a problem in the way of increasing capacity to import. Import intensity has increased over time and is much ahead of export intensity eroding the capacity to import and creating condition for balance of payment constraint to growth.

Composition dynamics of export show that over time, proportion of manufactured exports has increased and now it reaches 95% of total exports. Though manufacturing component in exports is a sign of progressive structure on the surface, export structure of Bangladesh suffers from poor quality because of poor technological component with 98% exports belonging to low technology based products and relatively poor per capita manufactured exports as indicated by its 4.5% level of per capita global manufactured exports. Export is narrow based and confined to few items of garments and other consumer goods. Though main category of exports is ready made garments constituting 78% of exports, garment products are concentrated in five items-T-shirts, pullovers, jackets, trousers and Men's and Boys' shirts. Concentration ratio of exports of Bangladesh is one of the highest in the world in not only in products but also in market destinations, which are concentrated in two areas-USA and EU. Nine countries buy 75% of Bangladesh garments. The changing export structure has been basically a shift from indigenous resource based jute to labour intensive import dependent garments in the export dynamics.

Import structure of Bangladesh is dominated by consumer goods at both static and dynamic level. Proportion of consumer goods now constitutes 57% of total imports of the country. Intermediate goods stably constitute 22% of imports. Proportion of primary goods and capital goods are 14% and 7% respectively. This indicates poor quality of technology component of imports. From this import structure, it is clear that there is a lacking in import substitution of consumer and intermediate goods by increased imports of capital goods and rawmaterials for using available surplus labour for domestic production with higher productivity. Import is not so much concentrated. But number of suppliers is not many. Only

nine suppliers supply 63% of our imports. High growth of supply is from China, India, Malaysia and Korea in recent years. Deeper analysis of import structure indicates that Bangladesh need to increase quality and technology component of imports for increased productivity in the economy.

Bangladesh has though been doing basically inter industry trade, its intra industry trade also has been increasing gradually though lower compared to India and Srilanka. At present, intra industry trade of Bangladesh is at a level of 28%. In course of trade development, Bangladesh tends to develop intra industry trade.

In so far as intra regional trade is concerned, participation of Bangladesh is very negligible. Results of similarity index show that India is not a competing economy but a complementary economy. India's export is Bangladesh's imports and complementary to Bangladesh development through providing primary inputs and capital goods to Bangladesh. Only country where similarity index is high is Srilanka implying similar trade pattern with Bangladesh. Both Bangladesh and Srilanka are competing imports from India and exports to the rest of the world for similar types of products. Common export items of Bangladesh with SAARC countries specially Srilanka, India and Pakistan are primarily two-fish and Pakistan are highly correlated.

It has been found that Bangladesh has been enjoying high competitiveness for exports in garments, jute and jute goods, other textile articles, fish, processed food, leather, footwear, IT and consumer electronics. Around 25 % of products at 4-digit level are showing positive RCA and TSI for Bangladesh. Analysis of net trade advantage shows that Bangladesh trade pattern suffers from shallowness as evidenced by the fact that only two categories (at 2-digit level)-textiles and clothing and other manufacture out of ten products of trade basket have positive value. Geographic RCA of Bangladesh is positive only for USA and EU.. In both knit and non-knit garments, Bangladesh has high RCA and TSI. In knit wear, Bangladesh has been enjoying positive RCA but faces tougher competition with established suppliers like China, Vietnam and Turkey. In non-knit garments, Bangladesh has better position relative to China which has negative RCA. But China's market share in both knit and non-knit is more than 30% of world exports. Bangladesh is a better performer in EU but in US market, Bangladesh's competitors are many enjoying positive RCA and TSI making the competition tougher for Bangladesh. In EU market, Bangladesh enjoys higher RCA in T-shirts, jersey, pullovers, Men's and Boys' 'shirts and Men's and Boys' suits and jackets, but experiences competitive disadvantage in women's and girls' 'suits, jackets and blazers. It implies that Bangladesh needs to diversify and increase competiveness for export expansion.

Market share of Bangladesh in global exports is 0.13% and global imports 0.15% with increasing trend. Bangladesh has market share of 4.85% in garments ranking second position in the world. High market share with positive trend belong to garments, other textiles, jute and jute goods, fish and processed food, leather and leather goods and footwear. It is notable that only 8 countries are supplying 50% world garments market indicating tough competition to maintain the market share. China is having 33% of world garments market which is eight times higher than Bangladesh holding second position next to China. This creates scope for Bangladesh taking over of some of shares of China where it has competitive disadvantage. It has been observed that there has been positive change of market share of Bangladesh by 23%, and main source of this positive change is competitiveness. Bangladesh ranked 108th position out of 142 countries in global competitiveness ranking of 2012. Infrastructure, technology preparedness, innovation and institutions are identified as the four weakest areas for poor competitiveness of Bangladesh.

Thus Bangladesh has though experienced reasonable growth of exports and remarkable success in garments exports, trade pattern of Bangladesh is characterized by poor quality, low technology based products, narrowness of products and markets, domination of consumer goods in exports and imports basket, poor competitiveness and limited success in product and market diversification for export expansion, All these indicate the necessity of broadening the production base, raising technology level and improving infrastructure for quality production with varieties and innovativeness to address both domestic and export market.

		•						
Export Items	1972- 80	1981-85	1986-90	2661-1661	1996-00	2001-05	2006-10	
taw jute	4.61	1.85	-1.51	-6.26	0.35	7.22	26.46	High Growth recently
Tea	27.57	14.44	-4.72	-1.88	-6.28	-1.12	-13.45	Negative growth
rozen Food	62.47	18.56	10.38	18.78	3.06	5.46	6.82	Positive though lowered
Agriproducts	39.47	63.95	12.82	7.06	15.99	40.09	20.38	High Growth
Other primary commodities	30.84	4.18	5.12	21.28	-0.96	17.01	26.43	High Growth
otal primary commodities	8.04	7.03	0.52	8.06	1.28	7.82	12.32	High Growth
ute goods	14.13	0.14	-2.17	-0.43	-3.24	3.69	20.44	High Growth
otal jute and Jute goods	9.18	0.51	-2.38	-2.17	-3.03	4.33	21.07	High Growth
eather	26.03	3.09	28.37	3.78	-0.24	3.83	5.50	R5easonable growth
cather goods	517.26	117.24	-100.00	79.64	2.56			Prospective
ootwear	517.26	-85.71	#DIV/0	66.78	9.49	78.53	26.43	High Growth
voven Garments	211.80	202.49	44.70	25.63	11.27	3.31	13.10	Reasonable growth
Cnitwear	20.37	-20.00	0.00	184.99	27.14	17.96	20.10	High growth
otal garments (Woven and Knitted)	345.50	204.44	45.33	29.68	14.54	8.35	16.36	High growth
harmaceuticals	289.03	40.27	87.95	162.89	22.27	-54.29	#DIV/0	Prospective
Handicraft	110.93	-10.40	27.65	10.73	8.77	-9.63	3.82	Low Positive growth
Engineering products	566.71	793.96	89.14	36.31	-12.47	#DIV/0!	29.51	High Growth
specific textiles	-71.79	89.18	90.07	98.98	-1.09	#DIV/0!	#DIV/0i	Negative growth
)ther mfg.	197.36	20.96	43.32	69.86	28.73	27.81	14.73	Reasonable growth
ot mfg exports	15.94	4.46	16.25	20.70	11.95	8.99	15.71	High growth
rotal Export	11.93	5.19	11.26	18.34	10.72	8.87	15.44	High Growth
fotal exports except garments	11.91	2.29	2.43	7.41	2.55	10.53	12.93	Reasonable growth
Total manufactured exports except arments	15.92	-0.03	4.01	7.14	3.35	11 89	13 37	Reasonable growth

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Extrinsic Determinants of Economic Growth June 2012

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Abstract The paper empirically estimates the effects of the extrinsic uncertainty variables on economic growth. The extrinsic variables are represented by democracy, corruption and armed conflicts. In a crosssectional study involving 127 countries, the study finds that democracy negatively affects economic growth, while polity has a positive impact on economic growth. Armed conflicts do not appear to have any statistically significant effect on economic growth.

Key Words: Extrinsic uncertainty, economic growth.

JEL Classifications: C31, C51, O47

1. Introduction

The pursuit for economic growth remains at the forefront of the policy agenda of any economy. Economic growth indeed constitutes the necessary condition for attaining higher standard of living or human welfare, the ultimate objective of any development policy. The early growth models typically emphasized on resource endowment and/or the 'initial conditions' as the prime determinants of economic growth. The differences in resource endowments across countries partly explain the stylized fact that economic growth differs across countries. The other potential determinants are open to discussion.

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The neoclassical theory of growth describes economic growth as a function of capital, labour and technology. The neoclassical growth theory is essentially supply-oriented (Federici and Marconi, 2002) and, as such, is silent on the role of domestic policies including trade policies. However, a touch of emphasis on foreign demand can be traced into the demand-oriented theory of Kaldor (1970). Growth empirics up to the mid-1980s made extensive use of the neoclassical models. The notion of the endogenous new growth theory renewed the research interest in economic growth. The endogenous growth theory owes a great deal to the phenomenal works of Romer (1986) and Lucas (1988), which was supplemented by, among others, Grossman and Helpman (1991), Aghion and Howitt (1992), Romer (1993) and Coe and Helpman (1995). Based on Arrow's (1962) learning by doing the endogenous growth theory proposes a macrodynamic theoretical construct to explain the effects of trade policies alongside capital flows and transfer of ideas and technology on the growth rate of income. Thus, development policies and the shifts in these policies have been formally recognized as arguments of the growth equation.

Neither the neoclassical theory nor the endogenous theory recognises the role of the 'extrinsic' or the 'sunspots' variables *vis-à-vis* the 'intrinsic' variables in economic growth. The extrinsic variables include the political variables such as democracy, government stability, political violence, political volatility, subjective perception of politics, frequency of armed conflicts, and corruption. Recent models of growth have emphasized that the growth performance of a nation may be affected by these parameters (see, for example, Brunneti, 1997). This paper aims at bringing in further empirical evidence concerning the role of these variables in economic growth. The paper particularly emphasizes on the role of 'polity' score, armed conflicts, and corruption by alternatively using cross-sectional data from 127 countries.

The rest of the paper is organised as follows. Section II reviews relevant literature on corruption, polity, conflict and economic growth; Section III presents the theoretical framework; Section IV illustrates empirical model, data and empirical results; and Section V concludes the study.

2. A Brief Review of the Literature

The modern-day world has come off a long way from the organic view of the state in which the existence of the citizens and their activities would exclusively mean for the welfare of the 'state' rather than the citizens themselves. The role of the government has thus shifted from maintenance of law and order, and governance to enhancing the standard of living of the citizens. This is probably truer in democratic societies where leadership is conferred by the mandates of the citizens. The perceived new role of the government apparently made it performance-oriented, the achievement of which is contingent upon the presence or absence of certain parameters. The set of parameters include, among other things, governance, political violence, political volatility, corruption, and armed conflicts.

By highlighting the role of the extrinsic variables, the contemporary growth literature brings to the front the *institution* view on economic growth. The role of institutions in economic development was emphasized by Lewis (1955) quite a long time ago. Some consider institutions as potential sources of differences in cross-country differences in growth [see, for example, North and Thomas (1973); Acemoglu *et al.* (2005)]. Rodik (2005) develops a four-cluster taxonomy of institutions that is vital to the study of economic growth. The taxonomy includes (a) market-creating institution that ensures the security of the property rights and enforcement of contracts; (b) marketing-regulating institution responsible for command and control; (c) market-stabilizing institution that refers to the political regime that oversees the operation of the market. Thus, a clear synergy between economic institutions as embedded in the neoclassical theory, political institutions, and political regimes is now discernible.

The theoretical framework of the neoclassical growth theory has now become an integral element of macroeconomic textbook. And its empirical applications are well documented in the growth literature. This paper therefore avoids a review of the neoclassical theory. The literature on economic institution-growth nexus is still evolving. The literature in this area largely draws from the development of economic institutions in many European colonies in the past 500 years. These included the provision for private property, introduction and/or maintenance of extractive institutions, migration of the Europeans to sparsely populated regions, introduction of legal rights and the quality thereof in protecting the investors, among other issues. Empirical evidence, though not free from controversy, is indicative of a positive impact of economic institutions on economic growth. Acemoglu, Johnson and Robinson (2001, 2002) find positive effects of the development of private property and the introduction of extractive institutions in previously poor regions. Acemoglu (2001) finds that settlements of Europeans, as proxied by mortality rates 100 years ago, have no effect on per capita GDP today. However, mortality rates are likely to have contributed to the development of institutions that may affect growth. La Porta et al. (1997, 1998) show that the degree of investor protection as spelled out in the legal systems has implications
for the development of equity and stock markets. Better investor protection leads to greater debt and equity markets and also to better labour-market conditions, which in turn may contribute to growth (Botero et al., 2004). Deger, Lam and Sen (2011) find positive relationship between growth and economic institutions.

The theoretical underpinnings of extrinsic uncertainty or sunspot variables (or "animal spirits" or "market psychology" as they are alternatively known) to economic growth have been brought forward by Cass and Shell (1981, 1983). Cass and Shell (1983) argue that while extrinsic uncertainty does not matter in the static Arrow-Debru economy with complete markets, it may matter in overlapping-generations models under certain conditions. Further, in the presence of extrinsic uncertainty, equilibrium allocations are Pareto optimal in a 'weaker' sense', "which is appropriate to dynamic analysis". Bruneti (1997) has an extensive survey of the empirical literature concerning the effects of the sunspot variables on economic growth. The survey reviewed five categories of papers respectively concentrating on democracy, political volatility, government stability, political violence, and subjective political measures. Measures of political volatility and subjective political indicators have been found to have significant effects of economic growth followed by government stability and political violence. Democracy appears to have mixed results, and in most cases being unsuccessful in explaining economic growth. Deger, Lam and Sen (2011) find that political institutions 'including democracy' do not have any conclusive effects on economic growth.

3. Theoretical Framework

The two-factor simple Cobb-Douglas output function can be written as

 $Y = AL^{\alpha}K^{\beta} \tag{1}$

The basic factors of production, labour and capital positively affect economic growth with probably different size of contribution, namely, α and β respectively. There are also institutional and infrastructural advancements which are very influential factors for output growth. In equation (1) A represents the initial endowments of a country, thereby capturing the differences in productivity across countries. Besides, the literature also suggests a 'state capacity' variable in the growth equation, which also can be captured by A. Human capital is also one of the important determinants of economic growth (see, for example, Mankiw, Romer and Weil, 1992; Mankiw, Phelps and Romer, 1995). As representatives of the 'sunspots' or 'extrinsic uncertainty' variables, the present study includes corruption, armed conflicts, and non-democracy into the model. Accordingly, equation (1) has been revised as follows:

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$$Y = AL^{\alpha}K^{\beta}H^{1-\alpha-\beta}E^{\delta}; \ \alpha > 0, \beta > 0, \delta < 0$$
⁽²⁾

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Testable specification of the model (by taking logarithm) can be given as follows:

$$lnY_{it} = \mu_i + \ln(A)_i + \alpha lnL_{it} + \beta lnK_{it} + (1 - \alpha - \beta)lnH_{it} + \delta lnE_{it} + \varepsilon_{it}$$
(3)

where, Y is output of country i at time t; μ is the country-specific effect; A is initial endowment of the country i; E is the vector of extrinsic uncertainty and ε is the error term.

4. Model, Data and Empirical Results

4.1 The Model and Data

The cross-sectional model uses the mean values of the variables. The specific empirical model for the cross-sectional results is as follows:

$$\dot{y}_{i} = (lnY_{i,t} - lnY_{i,t-1}) = \mu_{i} + \beta_{1}lnY_{i,0} + \beta_{2}lnL_{i,t} + \beta_{3}lnK_{i,t} + \beta_{4}lnH_{i,t} + \beta_{5}NPI_{i,t} + \beta_{6}Polity_{i,t} + \beta_{7}C_{DUM} + \varepsilon_{i,t}$$
(4)

 Y_{it} is PPP-GDP (constant 2005 international \$) for each country over time, y_t is cross-sectional average growth of income, Y_{io} is initial income level. It may be noted here that data for PPP-GDP per capita are available from 1989 for most of the countries. For the rest of the countries in the sample, data are available from 1990 or from 1991. *L* is the labour force participation rate, *K* is gross fixed capital formation as percentage of GDP, *H* is human capital as proxied by the percentage of population attaining secondary education aged 25 and over), *Polity* is the average polity score, *NPI* is the average of non-corruption perception index, *C_Dum* is the conflict dummy, which takes a value of 1 if there is an incidence of conflict and 0 otherwise; and ε is error term.

Data on PPP-GDP, initial income, labour force participation rate, and gross fixed capital formation are sourced from the 'World Development Indicators' (WDI) of the World Bank. Data on human capital are taken from Barro and Lee database (2010) and WDI. Data on polity, corruptions and armed conflicts are compiled from Center for Systemic Peace and Center for Global Policy, George Mason University (April 30, 2010), Uppsala Conflict Data Program (1 August 2011); and Corruption Perceptions Index (various issues) of the Transparency International.

4.2 Description of the Variables

Since the extrinsic uncertainty variables are not widely known, a brief description of each of these variables is presented below.

Polity Score

'Polity', in the *Webster's New World College Dictionary* is defined as a "political or governmental organization; a society or institution with an organized government; state; body politic." In the 'polity' dataset, the polity scores take values within the range of -10 (strongly autocratic) to +10 (strongly democratic). However, we converted them into a range of 0 to 20, which facilitates the conversion of the variables into logarithmic form as required. We use the modified version of polity called 'polity 2'. The advantage of using polity2 is that it has converted some unusual scores such as -66, -77, and -88 into normal scores (-10 to +10) which, therefore, can be termed as standardized scores.

Non-Corruption Perceptions Index

According to the *Transparency International* (TI) (the Berlin-based anticorruption nongovernmental organisation) 'corruption' is the abasement of entrusted power for private gain. The *Corruption Perceptions Index* (CPI), according to TI, is a "poll of polls". It shows the average scores which are the reflection of opinions by international businesspeople and financial journalists for individual countries. In CPI, countries are ranked according to the perceptions of corruption in the public sector. It is an assessment about corruption level at which it is perceived by businesspeople as impacting on their commercial life.

It is perceived that the greater the score is, the less corrupted the country would be. Therefore, although TI terms the corruption indicator as CPI, this study terms it as Non-Corruption Perceptions Index (NPI). Consequently, if corruption deters economic growth, we can expect a positive sign for the coefficient of the NPI variable. The NPI scores for different groups of countries are plotted in Figure 1. The more developed regions of the world appear to have higher scores.





Armed Conflicts

In the UCDP/PRIO Armed Conflict Dataset Codebook the term 'conflict' has been defined as: "a contested incompatibility that concerns government and/or territory where the use of armed force between two parties, of which at least one is the government of a state, results in at least 25 battle-related deaths." We collect the average of the annual number of battle deaths due to both internal and external conflicts. We construct a dummy variable for armed conflicts. A value of 1 for the dummy denotes the presence of armed conflicts and a value of 0 denotes otherwise. A distinctive effect of internal to external conflict is beyond the scope of this study. However, any further study may find this distinction interesting.

4.3 Empirical Results

Descriptive Statistics

The study uses 127 observations (the list of the countries is given in the Appendix) for the time period from 2000 to 2010. This is a cross-sectional study and we include average values of all variables except Y_{1989} and C_DUM. As mentioned earlier, Y1989 is PPP-GDP per capita, hence, it is a constant value of the mentioned year and C_DUM is a dummy variable. The world average of human capital is about 22 percent with a standard deviation of 15.67 percent, which indicates a large discrepancy between countries. Average polity score is about 14 out of 20 in the world. China's average polity score from 2000 to 2010 was 3, while its average GDP growth rate was 10.29 percent during the same period. Qatar's average polity score was 0 (zero), while the country's average GDP growth rate was 13.54 percent in the last decade. On the contrary, Portugal's average polity was 20 while the country's average GDP growth rate was less than 1 percent. A similar scenario is observed in many other countries. Consequently, it seems there is an inverse relationship between democracy and economic growth.

No country in the world is free from corruption. It's just a matter of degree. The average NPI score for the world as a whole is about 4 out of 10. With the highest NPI score of 9.52, Finland is the least corrupt country. Denmark (9.46), New Zealand (9.45), Singapore (9.28), Sweden (9.24) and Iceland (9.22) are the other less corrupt countries. With the lowest score of 1.7 Afghanistan and Bangladesh are the most corrupt-prone countries in the world. (Somalia and Myanmar have lower NPI scores than Afghanistan and Bangladesh. The two countries, however, are not included in the present study).

	?Y	Y ₁₉₈₉	L	Κ	н	Polity	NPI	
Mean	14549173653	8645.91	21500568.52	21.44	21.71	13.95	3.995	
Median	2078924357	4714.89	4231411.06	21.22	18.37	16	3.17	
Maximum	5.46078E+11	64828.61	758262206.8	39.48	74.1	20	9.52	
Minimum	23225901.93	400.99	300610.46	8.86	0.67	1	1.7	
Std. Dev.	54978134055	10223.18	78393041.18	4.73	15.67	6.04	2.07	
	127	127	127	127	127	127	127	
Observations								

Table 1: Descriptive Statistics

Note: ΔY is growth of PPP-GDP (constant 2005); Y_{1989} is per-capita PPP-GDP in 1989; L is labour force, K is capital (% of GDP); H is human capital which is proxied by labour force with secondary education (% of population aged 25 and over); P is polity score; and NPI is non-corruption score.

Correlation Matrix

The correlation matrix (Table 2) shows that initial income and human capital as well as initial income and non-corruption scores are highly correlated. All other explanatory variables are insignificantly correlated with each other.

	?InY _i	InY ₁₉₈₉	InF _i	InK _i	InH _i	InNPI _i	InPolity _i	C_DUM
?InY _i	1							
InY ₁₉₈₉	0.47	1						
InL _i	0.78	-0.07	1					
InK _i	0.29	0.13	0.08	1				
InH _i	0.26	<mark>0.67</mark>	-0.10	0.19	1			
InNPI _i	0.33	<mark>0.76</mark>	-0.08	0.13	0.47	1		
InPolity _i	0.03	0.07	0.15	-0.02	0.13	0.22	1	
C_DUM	0.10	-0.37	0.36	-0.18	-0.29	-0.37	-0.05	1

Table 2: Correlation Matrix

Regression Results

The estimated regression results are presented in Table 3. In view of the strong correlation of human capital and non-corruption score with initial endowments, two alternative equations are estimated, with and without the initial endowments variable. Model 1 shows that the coefficient of polity score is statistically significant alongside initial endowments, labour force, and capital. A negative sign of the coefficient of the polity variable indicates that the greater the degree of democracy, the lower will be the growth rate. Human capital and corruption do not appear to have any significant effect on economic growth. Model 2

indicates that both polity and corruption variables have statistically significant effects on economic growth along with labour force, capital, and human capital. The polity variable still has a negative sign. A positive coefficient of NPI indicates that corruption is negatively related with economic growth. In both models, armed conflicts appear not to be a significant determinant of economic growth.

Table 3: Regression Results						
	Model 1	Model 2				
С	-4.19***	-0.04				
	(0.92)	(1.10)				
InY ₁₉₈₉	0.77***	-				
	(0.08)					
lnL	1.04***	1.08***				
	(0.04)	(0.05)				
lnK	1.28***	1.14***				
	(0.22)	(0.30)				
lnH	-0.03	0.36***				
	(0.07)	(0.08)				
InNPI	0.16	1.37***				
	(0.18)	(0.18)				
InPolity	-0.35***	-0.52***				
·	(0.08)	(0.10)				
C DUM	0.12	-0.02				
_	(0.13)	(0.17)				
Adj. R ²	0.92	0.85				
F ^{STAT}	185.68***	109.78***				
Observations	127	127				

Note: *** stands for the level of significance at 1percent; Standard errors are in parentheses. Model1 includes all variables of our theoretical model (Equation 3). However, $\ln Y_{1989}$ is highly correlated with lnH, lnNPI and lnPolity; hence, we exclude the initial income variable from the regression equation (Model 2) to fix multicollinearity problem.

5. Conclusion

The primary objective of the study has been to empirically estimate the effects of the extrinsic uncertainty variables on economic growth. In a cross-sectional study involving 127 countries, the study finds that democracy negatively affects economic growth, while polity has a positive impact. Armed conflicts do not appear to have any statistically significant effect on economic growth. The empirical results of this study are consistent with earlier findings.

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APPENDIX

List of Countries included in the Sampi	Li	ist	of	Countries	Included	in the	Sample
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Afghanistan	India	Qatar
Albania	Indonesia	Romania
Algeria	Iran	Rwanda
Argentina	Ireland	Russia
Armenia	Israel	Saudi Arabia
Azerbaijan	Italy	Senegal
Australia	Jamaica	Sierra Leone
Bahrain	Japan	Singapore
Bangladesh	Jordan	Slovak Republic
Benin	Kazakhstan	Slovenia
Bolivia	Kenya	South Africa
Botswana	Kuwait	South Korea
Brazil	Kyrgyz Republic	Saudi Arabia
Burundi	Laos	Senegal
Cambodia	Latvia	Sierra Leone
Cameroon	Liberia	Singapore
Central African Republic	Lesotho	Slovak Republic
Chad	Libya	Slovenia
Chile	Lithuania	South Africa
China	Madagascar	South Korea
Colombia	Malawi	Spain
Costa Rica	Malaysia	Sri Lanka
Cote d'Ivoire	Mali	Sudan
DR Congo (Zaire)	Mauritania	Swaziland
Congo	Mauritius	Sweden
Croatia	Mexico	Switzerland
Denmark	Moldova	Syria
Dominican Republic	Mongolia	Tajikistan
Egypt	Morocco	Tanzania
El Salvador	Mozambique	Togo
Ecuador	Namibia	Thailand
Estonia	Nepal	Trinidad and Tobago
Ethiopia	Netherlands	Turkey
Fiji	New Zealand	Tunisia
Finland	Nicaragua	Uganda
France	Niger	Ukraine
Gabon	Norway	UAE
Gambia	Oman	UK
Georgia	Pakistan	USA
Germany	Panama	Uruguay
Ghana	Papua New Guinea	Venezuela
Greece	Paraguay	Yemen
Guatemala	Peru	Zambia
Guyana	Philippines	
Honduras	Poland	
Hungary	Portugal	

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A Study of Performance Through Ratio Analysis: Intra- and Inter- comparison between Bangladesh Pharmaceutical and Cement companies

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Abstract Financial statement analysis provides a view of the financial status of companies through a view of their current situation as well as enabling forecasts to be drawn about their future. However, there is a chance of manipulation in the financial statements, which can often be detected through proper analysis of the statements. Over time different ratios may often be provided and as a result accurate forecasting can be greatly hampered. In this study, two industries in Bangladesh have been selected for analysis - Pharmaceutical companies and Cement companies. The analysis clearly shows the importance of financial ratio analysis in enhancing the understanding the efficiency and effectiveness of corporate investment and return in the manufacturing industries. The analysis demonstrated in this paper shows that managerial actions need constant and close investigation, and well defined policies are needed to improve managerial efficiency, which in turn is likely to be attractive to both investors and finance providers.

Keywords: Financial statement analysis; Bangladesh Pharmaceutical and Cement Industries; Managerial efficiency.

1. Introduction

Financial statement analysis helps us to interpret the overall performance of a company so that managerial efficiency, operational efficiency and financial

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viability over a period can be determined. It indicates the performance of a company and also provides a benchmark to establish the financial position of the company. Financial ratios are indicators of the extant health of a company and also provide an insight into possible future areas of concern.

The analysis of financial ratio helps us to understand significant items that are not necessarily stable across different industries and time periods. Managers, wishing to gain a benchmark understanding of how a company is faring, may make judgments based on simple observations of performance such as turnover, profit margin and work-in-progress. Senior management must attain a deeper and broader understanding if they are to better appreciate where the company is heading. The risks of not correctly interpreting and understanding the financial position and operating efficiency of a company include making inefficient investments in that company. Financial ratio analysis forewarns of such risks by highlighting dangerous trends and differences. So when used objectively, it is possible to predict the trends that may cause concern thus enabling investors, finance providers and management to take appropriate action.

The objectives underpinning the analysis corporate financial of statements are to facilitate efficient decision making from the perspective of an investor or a finance provider (creditor). The analysis generally attempts to achieve an understanding of whether managers of companies are satisfactorily using current earnings, if they are acquiring and managing assets well, if the company can meet its obligations, to determine whether the sources of a company's assets and investments are efficient, and to evaluate the overall efficiency and performance of a company.

In this study we apply ratio analysis to the information provided in the financial statements of six organisations; three in each of two industries that are of importance to the Bangladesh economy. We identify the ratios that are applied in the analytical testing and explain the theoretical concepts underpinning the importance of these measures. We also consider how these measures can be used to interpret corporate performance and financial position.

1.1 The selected companies and industries

As the six companies identified in this section are significant organisations in two industrial sectors that are important to the Bangladesh economy, they have been selected for the analysis in this study.

The Bangladesh Pharmaceutical industry is one of the most developed hi tech sectors of the Bountry and it makes a significant contribution to the economy.

After the promulgation of Drug Control Ordinance - 1982, the development of this sector accelerated. The professional knowledge, thoughts and innovative ideas of the pharmacists working in this sector are the key factors for these developments. Due to recent development of this sector we are exporting medicines to global markets including to Europe. This sector also provides 95% of the total medicine requirements of the Bangladesh market. Emran and Hossain (2005) comment that healthy growth is likely to encourage the pharmaceuticals companies to introduce newer drugs and newer research products, while at the same time maintaining a healthy competitiveness in respect of the most essential drugs.

Leading pharmaceutical companies are expanding their business with the aim of further developing the export market. Beximco Pharmaceuticals Limited (BPL) is one of the leading pharmaceutical manufacturing companies in Bangladesh. Considered as a technological leader among the local manufacturers, BPL currently is ranked in third position in local sales among Bangladesh pharmaceutical companies, and this position is supported by an extensive distribution network that supports its products in the local market. Companies like BPL and others (such as Square Pharmaceuticals and ACI Pharmaceuticals) are now trying to adopt international manufacturing standards in their facilities. In the bulk drugs and pharmaceutical industry these are currently almost non-existent in Bangladesh. Sabnam and Biswas (2008) argue that the Bangladesh pharmaceutical industry now badly needs an extensive guardianship from the government in policy matters, knowledge and infrastructural capacity building in order to combat challenges in the journey to acquiring world class manufacturing know-how and cost-competitive human capital. The sector consistently creates job opportunities for highly qualified people and many established entrepreneurs in Bangladesh today had their start in pharmaceutical companies. Thus, pharmaceutical companies are contributing significantly towards raising the standard of healthcare through enabling local access to newer products and information.

Meghna Cement Mills Ltd., (MCM) is one of the largest cement industries in Bangladesh. The company is International Standard Organization (ISO) (ISO 9001: 2008) certified having accreditation of its manufacturing products for both local and export markets under the registered trade mark "King Brand Cement". The company has been listed with both the Dhaka and Chittagong Stock Exchanges since 1995 and 1996, respectively. Other significant organisations in the cement industry include Heidelberg Cement Bangladesh Ltd. (HCB), which meets 13% of the Bangladesh demand for cement from its two plants located at Dhaka and Chittagong. It employs 260 people across the country and has become a major force in the sector. Aramit Cement Limited (ACL), incorporated in 1995 with technical collaboration of a Chinese company, is another significant organization in the Bangladesh cement industry. The company has attained ISO 9002 certification. Its products carry the brand name 'Camel' and these have become popular among Bangladesh consumers.

1.2 Outline of this study

This paper proceeds as follows. The next section provides a review of the literature that considers the measures used to enable effective and efficient interpretation of information provided in the financial statements of companies. It then identif the ratios that have been selected for analytical testing and explains the theoretical concepts underpinning the importance of these measures of performance and financial position. This is followed by a brief outline of the methodology adopted in the study. Next a determination and discussion of the selected ratios based on the financial statement information of the six selected companies is provided, and this is followed by a concluding section.

2. Literature review

Bierman and Mc Adams (1969) argued that most financial decisions are made under conditions of uncertainty about the future. There is no procedure for management to follow, which will lead to the selection of the correct alternative each time. In dealing with uncertainty, it is desirable to focus attention on the decision *process* rather than on the merits of any single decision or outcome. Ratio analysis is regarded as a useful tool that assists managers in this process. For example, Schall and Haley (1980) suggest that financial ratios efficiently provide a great deal of information regarding a company's condition. A ratio, when compared with a target range of values can serve as a meaningful indicator of a company's financial health as well as a means to detect imminent problem areas.

Hyder(1988) argues that financial statements present a snapshot (still picture) of the past operation of a business. The reliability of the statements depends upon those who prepare these statements. In order to draw meaningful conclusions, several years statements should be studied and for more meaningful comparison, comparative statement forms should be used. Hashmi (1988) comments that ratios can sometimes be misleading if an analyst does not know the reliability and limitations of the figures from which they are computed and the financial position of the business at other times of the year. Gitman (2002), for example, points out that financial statements and thus financial ratios rely on accrual concepts. He

argues that as a result ratios can provide useful insights into important aspects of risks and returns. However, Hashmi (1988) acknowledges that in spite of limitations the utility and importance of ratio analysis as a tool of decision making is undeniable.

Horne (1998) argues that because reported financial data and the ratios determined from these data are numerical, there is a tendency to regard them as precise portrayals of a company's true financial position. While for some companies the data may closely approximate economic reality, for others it is necessary for the analyst to go beyond the reported figures in order to properly analyze performance and financial condition.

Moyer et al. (1990) caution that ratios should not be viewed as substitutes for sound business judgment. Instead, they should be regarded simply as tools that can help management to make better decisions. A further cautionary note comes from Ross, et al. (1996) who suggested that the basic problem with financial statement analysis is that there is no underlying theory to help identify which quantities to look at and to guide in establishing benchmarks. They argued that there are many instances where financial theory and economic logic can provide adequate guidance to managers making judgments about investment value and risk.

Hampton (1998) argues that financial ratios can be used to locate symptoms of problems. Once the symptoms have been located, the financial analyst must determine the cause of any problem, and then move on to finding a suitable solution to the problem. The problem might lie in the ability and experience of the management team. Kevin (2000) argues that the most important variable affecting the future prospects of the company is perhaps the quality of its management. However while the future of a company depends on the quality and competence of its management, to a very great extent assessing these managerial attributes is perhaps the most difficult task in company analysis.

Bringham and Houston (2001) observed that ratio analysis is used by three main groups. These are: (1) managers who employ ratios to help, analyze, control and thus improve their company's operations; (2) credit analysts who analyze ratios to help ascertain a company's ability to pay its debts; and (3) stock analysts who are interested in a company's efficiency, risk and growth prospects. Further, Gitman (2003) argues that ratios enable financial managers to monitor the pulse of the firm and its strategic goals.

Mostyn (2008) comments that of all the primary financial statements, the balance sheet is the most basic and essential. The income statement is a "change

statement" that shows the change in equity as a result of operating a business during a specific period of time. Kmhagen (2005) suggests that the 'bottom line' (profit figure) on the income statement is not the only important figure in the financial statements and argues that it may not even be the most important as there is another whole dimension of valuable information that can be obtained from the data reported in the financial statements. Ratio analysis is one of many tools that can be used to evaluate a company's performance, its current status, and its evaluation over time. The other two important financial statements are the statement of owner's equity (or stockholders' equity) in which the changes to owner's equity for a specific period of time are summarized; and the statement of cash flows in which the changes in cash for a specific period of time are explained.

This overview of the relevant literature showns that financial statement analysis using tools such as ratio analysis to assess performance and financial condition can be beneficial in assisting managers to better operate. However, it also indicates that 'to be useful' ratios must be interpreted with caution and with a full appreciation of the limitations of the underlying financial data on which the ratios are determined.

3. Selected ratios

For the purpose of analysing financial statement information, we classify ratios into the following broad spectrums: a) Liquidity ratios; b) Profitability ratios; c) Expense ratios; d) Leverage ratios; e) Activity ratios; and f) Investment turnover ratios. These ratios used in this study are now identified and briefly discussed.

a) Liquidity ratios: measure the ability of a company to meet its short-term obligations and reflect the short-term financial solvency or strength of the company. These ratios help with the understanding of liquidity. A low degree of liquidity will potentially lead to poor credit worthiness and a consequent loss of creditor's confidence. On the other hand a high degree of liquidity may be inefficient as idle assets (cash) do not generate returns. Common liquidity ratios include the current ratio, quick ratio, receivable turnover ratio, payables turnover ratio, inventory turnover ratio, average payment period, and the average collection period.

b) Profitability ratios: are calculated to measure the operating efficiency of a company. Besides, management of the company, finance providers and owners are interested in the profitability of a company while finance providers want to receive interest and repayment of principal in due time; owners want to get an

acceptable return on their investment, which is only possible if a company earns sufficient profits. Signals of problems emanating from profitability ratios include indications of high production costs, idle assets, low sales, inadequate selling prices, high administrative expenses, and excessive interest payment. Commonly used profitability ratios include the gross profit margin, net profit margin, return on equity, asset turnover, return on assets, earnings per share, and return on investment.

c) Expense ratios: are computed through comparing expenses with sales. The term expense includes cost of goods sold, operating expenses, administrative expenses, and selling expenses. A low expense ratio is generally considered to be favourable as it indicates operational efficiency while a high ratio is regarded unfavorably.

d) Leverage ratios: are used in judging the long term financial position of a company and include the calculation of financial leverage (capital structure). The ratios reflect the mix of funds provided by owners and lenders. The most common leverage ratio incorporates a comparison of debt to equity. Debt is considered to be riskier than equity as a company has a legal obligation to pay interest to debtholders irrespective of the profits it makes or the losses it incurs. The relationship describing the finance providers' contribution relative to the owners' contribution is called the debt-equity ratio. The greater the debt-equity ratio the greater will be the risk to the finance providers (creditors).

e) Activity ratios: indicate the speed with which assets are being converted or turned into sales. Activity ratios thus involve a relationship between sales and assets. An appropriate balance between sales and assets generally reflects that assets are managed well. Commonly used activity ratios are work in progress turnover, and raw material inventory turnover.

f) Investment turnover ratios: reflect the relationship between the cost of goods sold and either the assets or investments of a company. The higher the turnover ratio, the more efficient the management and utilization of the assets or investments is assumed to be. Commonly used investment turnover ratios include total asset turnover, fixed assets turnover, and current assets turnover.

4. Methodology of the study

Ratio analysis provides useful information to assist in gaining insights into the economic characteristics of different industries and of different companies under similar economic conditions, and across time which are due to operational, financing and investing decisions of managers. The analysis conducted in this

study is based on information contained in the annual reports of selected companies. Intra and intercompany analysis is performed and a total number of twenty eight ratios are determined. The currency used in this analysis is the Taka (Tk).

Intra company analysis: A comparative analysis of the following companies is provided.

Beximco Pharmaceuticals Limited (BPL) financial statement information for the years 2008 to 2010.

Meghna Cement Mills Limited (MCM) financial statement information for the years of 2007 to 2009.

Intercompany analysis: A comparative analysis of the following companies is provided.

Beximco Pharmaceuticals Limited (BPL), ACI Pharmaceuticals (ACI) and Square Pharmaceuticals Limited (SPL) for the year 2010.

Meghna Cement Mills Limited (MCM), Aramit Cement Limited (Aramit) and Heidelberg Cement Bangladesh Limited (HCB) for the year 2009.

5. Determination and discussion of the ratios

Pharmaceutical companies

a) Liquidity ratios

Current	ratio	:	BPL

Year	Current Asset		Current Liability	y Ratio	Ratio		
2010	6,191,667,831		2,513,157,232	2.46	2.46 times		
2009	6,191,673,783		2,321,451,642	2.66 times			
2008	2,861,891,654	2,602,032,267			1.09times		
Current ratio	0=	Year	Beximco	ACI	Square		
Current asset/ current liabilities	/	2010	2.46 Times	1.05 times	2.15 Times		

The current ratio shows fluctuating results over the years. Over the period the value of this ratio ranged from 1.09 to 2.66 which demonstrated an overall uptrend. The year 2009 shows the best performance while 2008 shows the worst. The main reason for in this ratio appears to be linked to the reduction of current

asset and the decrease in current liabilities. From the above chart we can assume that BPL's short-term debt payment ability is moderate with a 2.46:1 position in terms of paying its short term debt.

-					
Year	(Current Assets – Inventories)		Current I	liability	Ratio
2010	6191667831-1,983,809,444=4,207,85	8,387	2,513,157	,232	1.67 times
2009 2008	6,191,673,783- 1,722,953,284-=4,468 2,861,891,654-1,505,288,093=135,60	2,321,451, 2,602,032,	1.92 times 0.52 times		
Quick R	atio	Year	Beximco	ACI	Square
Quick Ra liabilitie	atio= (Current asset/Inventory)/current s	2010	1.67 Times	0.60 times	1.15 Times

Quick ratio : BPL

The quick ratio of BPL shows fluctuating results over the three years. The value of this ratio ranged from 0.52 to 1.92, which demonstrated a large amount of upward momentum. It appears that the company has an improving capacity to deal with its short term obligations; that is BPL's current operating activities provide sufficient cash to pay off its current liabilities.

Current cash	debt	coverage	ratio	:	BPL
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Year	Cash flow from operation	Current Liability	Ratio
2010	2,040,045,602	2,513,157,232	0.811 times
2009	842,792,622	2,321,451,642	0.36 times
2008	1,166,071,983	2,602,032,267	0.44times

The current cash debt coverage ratio of BPL shows fluctuating results over the years. The value of this ratio ranged from 0.36 to 0.811. It appears that the company is quite able to meets its short term liabilities. BPL's current operating activities provide enough cash to pay off its current liabilities which indicate again company is in a reasonable position in terms of its liquidity.

b) Profitability ratios

There are many measures of profitability which facilitate an evaluation of the returns of a company to its sales, assets, or equity. These ratios provide indicators of the capacity of a company to survive difficult circumstances such as declining prices increasing costs and declining sales. The profitability ratios we determine for intra-company analysis in this study include: (1) net profit margin; (2) return on assets; (3) return on equity; (4) earnings per share; and (5) price earnings ratio.

Net profit margin

The net profit margin ratio offers information as regards a company's success from its core trading activities. The ratio provides an indication about the operational outcome from sales activity after the cost of goods sold is removed by measuring the proportion of each sales currency unit (Taka) that is regarded as profit.

Year	Net income	Sales	s revenue		Ratio
2010	1,051,648,808	6,490),847,353		16.20%
2009	624,740,307	4,868,254,915			12.83%
2008	545,341,273	4,010,167,059			13.59%
Profit margin on Sales		Year	Beximco	ACI	Square
Profit margin on Sales =Net Income / Net Sales		2010	16.20%	12.13%	15.72%

Profit Margin	on	Sales	:	BPL
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This analysis shows that BPL ratio range is 12.83 to 16.20%, reaching the highest at 16.20% in 2010 and the lowest at 12.83% in 2009. Comparison of this ratio with the other companies in this study shows that Square Company (SCL) is the closest competitor. An implication of this ratio appears to be that BPL has firm control over its operating costs.

Return on assets

This ratio measures the profit earned by a company through the use of the capital invested in it by both owners and creditors in acquiring capital assets. Return on assets is interpreted as a measure of the success of a company in using the assets it has acquired.

Year No	et income	Tota	ıl asset]	Ē
2010 1,0	051,648,808	21,3	72,399,509	2	1
2009 62	24,740,307	19,8	91,933,422	3	3
2008 54	5,341,273	14,8	19,665,441	3	3
ROA	Year	Beximco	ACI	Square	
Rate of return on Assets = (Net Inco +Interest)/ Total Assets	ome 2010	4.92%	3.12%	13.89%	

Rate of return on Assets : BPL

This analysis shows that BPL's ratios are fluctuating with a peak at 4.92% in 2010 falling in 2009 to 3.14%. A comparison indicates that BPL is similar to its competitors ACI and SCL. Interpretation requires managers to consider whether or not these returns are at an acceptable level or not, and benchmarking to competitors operating under similar economic conditions and I similar markets is commonly an integral part of this evaluation.

Return on equity

The return on equity ratio indicates the amount of return generated from the equity invested in a company by its owners. It is a useful ratio for investigating the capability of the company's managers to provide an acceptable return on the capital invest by the owners.

Year	Net income	Equity			Ratio%
2010	1,051,648,808	15,974,08	36,451		6.58%
2009	624,740,307	10,885,70	06,614		5.74%
2008	545,341,273	10,450,20	02,145		5.23%
ROE		Year	Beximco	ACI	Square
Rate of ret Equity	turn on equity= Net income /	2001	6.58%	13.27%	18%

Rate of return on equity : BPL

This analysis shows that ROE of BPL ranged from 5.23% to 6.58% across the period, reaching the highest at 6.58% in 2010 and the lowest at 5.23% in 2008. A comparison shows that BPL's return on equity is lower than its competitor. This lower rate of return can be interpreted as BPL not being able to reward its owners as well as its competitors are able to.

Earnings per share

Earnings per share (EPS) measures the net income available for the owers on a per-share basis. EPS is a commonly used benchmark and is often quoted in publicly available share market updates.

Year	Net income	Number of Shares			R	atio
2010	1,051,648,808	203,413,696		5.17		17
2009	624,740,307	178,497,231			3.	50
2008	545,341,273	1,510,640,0	1,510,640,065			17
EPS			Year	Beximco	ACI	Square
LIG			1 cui	Bexilleo	1101	Square
Earnings per share= (Net income-Preferred dividends) / Ordinary shares outstanding			2010	5.17	30.49	138.36

Earnings per share : BPL

This analysis shows a dramatic difference between SCL and BPL's EPS ratios. This occurs because of the difference in the two companies' book values of equity. However, the analyst will need to undertake further examination in order to determine whether the EPS of these companies has been increasing or decreasing.

Price Earnings ratio

The Price Earnings Ratio or P/E measures market expectations regarding both risk and future growth prospects of a company's net income. Companies whose net income is expected to grow substantially will often have this expectation reflected in a high price earnings ratio.

P/E ratio	Year	Beximco	ACI	Square
Price Earnings ratio	2010	20.67	23.72	26.07

The P/E ratio tends to be higher for companies that have high growth prospects and lower for riskier companies. BPL's P/E ratio, being lower than those of the other pharmaceutical manufacturers examined in this study can be interpreted as a higher risk company, or as having lower relative growth prospects. Further analysis may be focused on the risk indicators, levels of debt in particular, to further understand the risk.

c) Coverage ratios

Coverage ratios measure the long-term debt servicing ability of a company by focusing on either the excess of earnings over interest or the proportional relationship of debt in the company's liabilities and equities. Coverage ratios determined in this study include the debt to asset ratio, times interest earned, and the cash debt coverage ratio.

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Debt to asset ratio

Total debt includes both current liabilities and long-term debt. Usually creditors prefer low debt ratio because the lower the ratio the greater the cushion against their losses in the event of liquidation. The owners can benefit of because it magnifies earnings, thus the return to stockholders but too much such debt often leads to financial difficulty that eventually might cause bankruptcy.

DUDITOT	sset Ratio . DI L				
Year	Total liabilities		Total assets		Ratio
2010	5,398,313,058		21,372,399,509	9	0.25
2009	9,006,226,808		1,325,124,286		0.45
2008	4,369,463,296		14,819,665,44	1	0.29
Debt to A	Asset Ratio	Year	Beximco	ACI	Square
Total lia	bilities/Total assets	2010	0.25	0.19	0.23

Debt to Asset Ratio : BPL

An interpretation of this data appears to indicate that BPL has satisfactory policies in place for the management of its debt. This implies that it has only a moderate level of risk associated with its ability to repay its long term liabilities. By comparison, SCL and ACI appear to have a higher level of risk.

Time interest earned

This ratio provides an indication of the margin of safety between the ability of a company to service its financial obligations based on its measure of net income. Thus, the ratio can be interpreted as an indication of the level of protection to finance providers and other creditors in the event of bankruptcy or other financial failure of the company.

Time Interest Earred : BPL

Year	Earnings before and taxes (EBIT	interest)	Interest expense	Ratio
2010	1,361,532,326		662,182,384	2.05
2009	867,467,427		289,427,992	2.99
2008	741,121,010		249,654,298	2.96
Times interest earned	Year	Beximco	ACI	Square
Time interest earned =EBIT/ Interest expense	2010	2.05	3.91	4.16

The time interest earned (TIE) ratio of BPL is low relative to its competitors. In year 2010, the TIE ratio is 2.05 times, which means the number of times that BPL's income before interest and taxes covers its interest obligation, while, ACI and Square have stronger ratios of 3.91 times, and 4.16 times respectively. This ratio is interpreted as representing a company's interest paying ability.

Cement Companies

Liquidity ratios

Current ratio

Company	2007	2008	2009
Meghna Cement Mills	1.1	1.43	1.29
Ltd.			
Aramit Cement			1.16
Heidelberg Cement			1.18
Bangladesh Ltd.			

The higher the ratio, the better is a company's ability to repay its short term liabilities. Meghna Cement Mills Limited's (MCM) capability increased to 1.43 in 2008: although it decreased in 2009 it remains higher than in 2007. In 2009 Heidelberg Cement Bangladesh (HCB) is in a stronger position than Aramit Cement Limited (ACL). From an operational point of view, one of the implications might be that the management of operational aspects such as the Supply chain management (SCM), Just-in-time (JIT) and other project management is efficient in HCB resulting in an improved cash position.

Quick ratio

Company	2007	2008	2009
Meghna Cement Mills	0.51	0.98	0.86
Ltd.			
Aramit Cement			0.34
Heidelberg Cement			0.65
Bangladesh Ltd.			

Meghna Cement Limited's immediate short term liquidity has improved across the study period. It compares favourably to both ACL and HCB, and again, the inference may be that MCM has more effective management and policies that enhance its cash flow position.

Receivables turnover ratio

Receivables turnover ratio indicates the number of times a company's receivables are turned into cash (turnover) each year. The ratio indicates how rapidly debts

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can be collected. A high ratio indicates a relatively short time lag between credit sales and cash collection while a low ratio shows that debts are not collected rapidly.

Company	2007	2008	2009
Meghna Cement Mills Ltd	43.17	32.73	18.98
Aramit Cement			14.83
Heidelberg Cement			21.69
Bangladesh Ltd.			

This analysis shows that MCM's debt collection capability has deteriorated since 2009. The comparative analysis shows that the competitor companies range around MCM's level, and that all three have a ratio that is relatively similar.

Credit turnover ratio

This ratio shows the relationship between net credit purchases and the average amount of creditor's outstanding during the year. A lower credit turnover ratio indicates the rate at which accounts due for payment are being settled. An increasing ratio indicates that the creditors are being settled more rapidly than previously.

Company	2007	2008	2009
Meghna Cement Mills	14.75	25.49	22.49
Ltd.			
Aramit Cement			17.58
Heidelberg Cement			19.86
Bangladesh Ltd.			

As we see, MCM tends to settle its account more rapidly than either ACI or HCB. On the other hand, it can be implied that both ACI and HCB are making more efficient use of their cash resources by slowing down the rate at which they settle their creditors. One other possible interpretation of this ratio is that a lower ratio indicates a lesser ability to pay promptly, and could be a signal of increasing riskiness.

Inventory turnover ratio

Inventory turnover ratio indicates the efficiency of the firm in selling its products. A high ratio is good from the viewpoint of moving stocks out of the company while a low ratio may be indicating an inability to sell the stock.

Company	2007	2008	2009	
Meghna Cement Mills	2.8	5.66	5.81	
Ltd.				
Aramit Cement			6.01	
Heidelberg Cement			5.77	
Bangladesh Ltd.				

This analysis shows that MCM's ability to sell its inventory (stock) has been increasing rapidly (> doubled) across the three-year period. Aramit (ACI) has the strongest inventory turnover, perhaps indicating the relative strength of its management policies in this area of its operations.

Average payment period

The average payment period (or average age of accounts payable) is the average amount of time taken by a company to pay its outstanding accounts. As it indicates the pattern of the bill payment system of a company, prospective lenders and suppliers of trade credit are likely to find this ratio extremely informative.

Company	2007	2008	2009
Meghna Cement Mills Ltd.	17.12	32.11	19.88
Aramit Cement Heidelberg Cement			21.1
Bangladesh Ltd.			10.04

This data shows that MCM slowed the rate of payment of its creditors significantly in 2008. However by 2009 the company was in a relatively similar position to both other companies examined in this study.

Average collection period

The average number of days for which a company's debts (or receivables) are outstanding is called average collection period. Generally, the shorter the average collection period, the better the quality of debtors is likely to be. The implications that can be draw include that the company has a strong and effective debt collection system and that its policies relating to the extension of credit to customers is sound.

Company	2007	2008	2009
Meghna Cement Mills Ltd.	39.22	41.89	22.25
Aramit Cement			23.19
Heidelberg Cement			21.9
Bangladesh Ltd.			

In this measure all three companies are in a similar position. Heidelberg Cement Bangladesh Limited (HCB) holds the strongest position with its shorter collection period. An implication is that management policies are strong resulting in a relatively short collection period from debtors.

Profitability ratios

Profitability ratios are generally determined if the analyst desires to measure the operating efficiency of a company. In addition to the management of a company, creditors and owners are also likely to be interested in profitability. Creditors want to receive interest and repayment of principal in due time and owners want to get an adequate return on their investment. Both are possible only if the company earns sufficient profits. Implications of abnormally low profitability ratios include high production costs, idle assets, inadequate sales, inadequate selling price, high administrative expenses, and possibly excessive interest rates charged by lenders to the company.

Gross profit margin

The gross profit margin indicates the efficiency of the production of core products. A high gross profit margin relative to an industry average implies that the company is able to produce at lower cost relative to its competitors under similar operating conditions.

Company	2007	2008	2009
Meghna Cement Mills	0.12	0.07	0.097
Ltd.			
Aramit Cement			0.091
Heidelberg Cement			0.093
Bangladesh Ltd.			

The data show that MCM was relatively stronger in the measure of gross profit margin than its two competitors. As mentioned earlier, these results might be interpreted as the more effective operating policies such as those relating to Supply chain management (SCM), Just-in-time (JIT) and other project management.

Net profit margin

The net profit margin provides a measure of the relationship between net profit and sales and is interpreted as an indicator of managerial efficiency in operating a business. A company with a high net profit margin would be in a more advantageous position to survive in adverse economic conditions such as a declining sales price, rising costs of production, or perhaps a decline in demand for its core products.

Company	2007	2008	2009
Meghna Cement Mills	0.28	0.29	0.22
Ltd.			
Aramit Cement			0.20
Heidelberg Cement			0.22
Bangladesh Ltd.			

All three companies have a similar level of net profit margin, although it can be seen the MCM's declined across the three-year period. The analyst might need to examine the trend more closely to understand the reason for this decline, and whether or not the competitors experienced a similar trend.

Return on equity ratio

The return on equity ratio indicates how well a company has used the resources provided by its owners. The ratio is likely to be of considerable interest to extant and prospective owners.

Company	2007	2008	2009
Meghna Cement Mills	3.58	4.23	4.59
Ltd.			
Aramit Cement			4.69
Heidelberg Cement			4.19
Bangladesh Ltd.			

Generally, the higher the ratio, the stronger is the company's performance. The data show that MCM's performance improved across the period to 2009 and that it considerably outperformed one of its competitors. Aramit Cement Limited (ACI) registered the strongest performance as measured by this statistis.

Return on assets ratio

This ratio shows the relationship between net income and average assets and is used to indicate the overall efficiency of managements' use of assets to generate a return for the owners on their investment in a company.

Company	2007	2008	2009
Meghna Cement Mills	0.28	0.33	0.31
Ltd.			
Aramit Cement			0.32
Heidelberg Cement			0.29
Bangladesh Ltd.			

Owners would be looking for a high return on assets ratio. The data show that MCM's best performance across the three-year period occurred in 2008, and that it was strongest in that year compared to all three of the companies in 2009.

Asset turnover ratio

The relationship between net sales and average assets are described as the asset turnover ratio. It is expressed as the number of times that a company produces of sales per unit (TK) of capital employed in its net assets.

Company	2007	2008	2009
Meghna Cement Mills Ltd.	0.99	1.12	1.42
Aramit Cement			1.56
Heidelberg Cement			1.34
Bangladesh Ltd.			

Generally analysts are looking for a high ratio as indicator of efficiency. The data demonstrate that MCM achieved the highest asset turnover ratio, implying that its management is the most effective in utilizing its net assets to generate sales.

Earnings per share (EPS)

The earnings per share (EPS) calculation indicates a company's earning power on per share basis. EPS does not reflect how much is paid out to the owners in the form of a dividend or how much the company retains in the business to support future growth.

Company	2007	2008	2009
Meghna Cement Mills	25.82	27.11	27.89
Ltd.			
Aramit Cement			31.19
Heidelberg Cement			30.49
Bangladesh Ltd.			

Higher the ratio, better the firm's position. In this measure, MCM showed its best performance in 2009. In 2009, ACL was the best. From operation management's aspect these outcomes might be linked to good management of operational aspects of the company such as the Supply chain management (SCM), Just-in-time (JIT) and other projects, as mentioned above.

Expense ratios

Cost of goods sold (COGS) ratio

The ratio shows the relationship between costs of goods sold and net sales.

Company	2007	2008	2009
Meghna Cement Mills Ltd.	87.83	93.07	90.29
Aramit Cement			90.82
Bangladesh Ltd.			89.23

Firms strive to reduce this ratio. Here we see MCM has a falling ratio across the three-year period, although it clearly took action to produce this trend between 2008-2009.

Administrative ratio

This ratio depicts the proportion of administrative expense that is covered by a company's level of net sales.

Company	2007	2008	2009
Meghna Cement Mills	1.67	1.51	1.21
Ltd.			
Aramit Cement			1.1
Heidelberg Cement			1.28
Bangladesh Ltd.			

A low ratio is desirable, and all three companies have a similar outcome. ACL showed the lowest ratio and so it can be regarded as having the most effective management of its administrative operations.

Selling expense ratio

This ratio is similar to the administrative ratio and reflects the share of sales units expressed in economic terms (currency: TK) that are required to cover a company's selling costs.

Company	2007	2008	2009
Meghna Cement Mills	6.5	1.33	2.63
Ltd.			
Aramit Cement			2.68
Heidelberg Cement			3.22
Bangladesh Ltd.			

As with administrative expenses, a low ratio is desirable. In this measure MCM appeared to be the most efficient.

Financial expense ratio

This ratio is similar to the two above. Financial expenses include interest charges, and can be a significant cost of conducting business. It is important that a company's management effectively controls these expenses.

Company	2007	2008	2009	
Meghna Cement Mills	3.53	3.11	1.86	
Ltd.				
Aramit Cement			1.76	
Heidelberg Cement			1.58	
Bangladesh Ltd.				

Generally, the lower the ratio the better, as less of the sales units (Tk) are needed to service the interest charges. HCB showed the best position in 2009 relative the earlier years. This might be interpreted as a company that has lower levels of debt than its competitors, and the analyst might need to investigate this matter further to fully understand the reasons underpinning the statistics.

Leverage ratios

Debt-equity ratio

Debt is risky from the perspective of investing in a company as a company has a legal obligation to pay interest on debt and to repay debtholders on maturity of the debt, irrespective of the profits made or losses incurred by the company. The relationship usually indicating the level of this risk is the debt-equity ratio. The greater the debt-equity ratio the greater the risk to debtholders.

Company	2007	2008	2009
Meghna Cement Mills	2.75	4.16	3.3
Ltd.			
Aramit Cement			3.5
			• •
Heidelberg Cement			2.6
Bangladesh Ltd.			

In this measure, MCM was in most risk in 2008 however by 2009 the company had considerably reduced this level of risk. HCB has the least risky debt/equity ratio.

Activity / Efficiency turnover ratios

Activity ratios are also called efficiency ratios or asset utilization ratios because they indicate the speed with which assets are converted into sales units (Tk). The balance between sales and assets generally reflects effective management of assets.

Work in progress turnover ratio (WPTR)

This ratio indicates the relationship between cost of goods manufactured and average work in process inventory.

Company	2007	2008	2009
Meghna Cement Mills	2.29	5.14	5.83
Ltd.			
Aramit Cement			5.92
Heidelberg Cement			6.02
Bangladesh Ltd.			

Lower is generally regarded as better for this ratio. In this measure MCM was most efficient across the entire three-year period under study.

Raw material inventory turnover ratio (RMITR)

The raw material inventory is related to materials consumed in the production processes of a company.

Company	2007	2008	2009
Meghna Cement Mills Ltd.	0.42	0.64	0.69
Aramit Cement Heidelberg Cement Bangladesh Ltd.			0.66 0.74

Generally the higher the ratio, the better is the outcome. In this measure MCM showed an improving situation across time, and HCB had the strongest position in 2009.

Investment turnover ratios

These ratios are based on the relationship between the cost of goods sold and assets/investments of a company. A number of different ratios are used to understand these situations.

Fixed assets turnover ratio

This ratio indicates a company's efficiency in utilizing its long-term (fixed/capital) assets.

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Company	2007	2008	2009
Meghna Cement Mills	1.98	2.59	3.87
Ltd.			
Aramit Cement			4.23
Heidelberg Cement			4.05
Bangladesh Ltd.			

Generally the higher the ratio, the more favourably is the statistics regarded. Aramit had the best outcome in 2009 implying that its ability to manage its long term assets and investments is relatively more efficient than its two competitor companies.

Current assets turnover ratio

This ratio depicts the relationship between costs of goods sold and average current ratio.

Company	2007	2008	2009
Meghna Cement Mills	1.59	1.79	1.95
Ltd.			
Aramit Cement			2.14
Heidelberg Cement			2.09
Bangladesh Ltd.			

Again, the higher the ratio, the more favourable it is. MCM showed its best performance in 2009, while overall, ACI had the best outcome.

Total asset turnover ratio

Assets turnover ratio shows the firm's ability in generating sales from all financial resources committed to total assets.

Company	2007	2008	2009
Meghna Cement Mills	0.86	1.04	1.28
Ltd.			
Aramit Cement			1.42
Heidelberg Cement			1.19
Bangladesh Ltd.			

A higher ratio is expected. In this measure, MCM's performance improved through to 2009. In 2009, Aramit was the best.

&) Market ratios

Price/earnings (P/E ratio)

The price-to-earnings ratio (P/E ratio) is a measure of the price paid for a share relative to the company's net profit earned. A rising P/E ratio is generally attractive

and indicates that investors are paying more for each unit of net income of a company.

Company	2007	2008	2009
Meghna Cement Mills	18	11	16
Ltd.			
Aramit Cement			12.98
Heidelberg Cement			14.1
Bangladesh Ltd.			

In this measure, MCM was most efficient in 2007 and had the strongest P/E ratio in 2009.

Market/book ratio

The market-to-book (M/B) ratio provides an indication of how investors view a company's operating and overall performance. It relates the market value of shares to their book value. An increasing M/B ratio is usually regarded as favourable.

Company	2007	2008	2009
Meghna Cement Mills Ltd.	46.48	29.82	44.62
-			
Aramit Cement			40.5
Heidelberg Cement			43
Bangladesh Ltd.			

In this measure, MCM was most favourable in 2007. Also in 2009 MCM had a stronger M/B ratio than its two competitors.

5. Concluding remarks

On several important measures Aramit and Heidelberg are regarded as less favourably placed or managed than Meghna. However, in some measures Meghna is not performing as well as its two competitors. These outcomes may at first glance appear to be conflicting, and the analyst must perform additional testing or investigation in order to form a well-informed opinion or run the danger of making or advising clients on inefficient investment and financing decisions.

Some implication that may be drawn from this case study analysis of six important companies in the Bangladesh economy are that to remain or to become more competitive in the cement and pharmaceuticals industries, managers must improve the figures by changing or adopting better operational, financing and management policies. The figures from the financial statement may not always be

very meaningful and performing ratio analysis mar pinpoint anomalies between the ratios provoking further analytical investigation. As such, they are a valuable tool for the detection of manipulation of the numbers in financial statements.

Generally companies that have well defined policies to manage the company and its operations are attractive to investor and finance providers, as they maximize their performance. However, ratio analysis is but one tool that can be and is utilized by analysts seeking to understand the intricacies of corporate management and performance. Other techniques might also be needed to assist in the understanding of whether window dressing (financial statement manipulation) may have occurred, or indeed whether or not the company is a viable long-term investment target. Thriving in a competitive environment requires an assessment of socio-economic as well as managerial and operational as well as current knowledge of policy makers' decisions and the threat of entrance of domestic companies and also foreign companies into the mix.

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An Exploration of the Role of Non-Conventional Mechanized Transport in the Northern Bangladesh: A Supply Side Analysis

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Abstract In the absence of adequate investment in rural motorized transportation sector, rural people have innovated Non-Conventional Mechanized Transport (NCMT) with their indigenous knowledge and own resources, which has become a mainstay of their earnings, and consequently of the rural economy. This paper explores the key socio-economic issues regarding NCMT. In doing so, a survey was conducted with the suppliers such as drivers and owners of NCMT using a structured questionnaire with face to face interview method. Six Upazillas from Rajshahi and Bogra districts were selected purposively as the study area. Findings show that there exist three kinds of NCMT such as Framed body, Plain body and Steering in the study region. The stagy also rascals that NCMT has attracted people from many different occupations and has been significantly contributing to rural as well as national economic growth by generating employment and investment. The diversity of its use has established it as the nucleus of all economic and social activities in rural Bangladesh. To widen the contribution of the sector the Bangladesh government could adopt some supportive measures such as forming a local regulatory body, improving mechanical devices, initiating training program for the drivers and so on. The findings also lead to the conclusion that there are ample opportunities to exploit the potentials of this emerging transport network to push the frontier of our economic development further.

Keywords: Rural Transport, Supply Side analysis, Northern Bangladesh

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1. Introduction

Rural economy in Bangladesh still occupies a key position and the performance of the economy largely depends on the performance of rural economy. The Bangladesh economy has been growing consistently over the last three decades and the rural economy has been remaining at the centre of this growth process. The key of this robust performance of rural economy is rural transport system and the nucleus of this rural transport system is $(NCMT)^4$. It was introduced to meet the growing demand for faster movement of goods and passengers. Rural road network was developing with a gradual shrinkage of water transport as well as the incapacity of conventional transport to meet the demand for rural economy. The local people have innovated it with their local knowledge and resources. Now all of the economic activities are circled around this non- conventional transport vehicle. It is playing the crucial role to generate income, to increase agricultural production and production diversification, human development such as health, nutrition and education, reducing isolation of the rural people. As many people are involved in this sphere directly and/or indirectly it is said now-a-days that NCMT plays a proactive role to enhance the welfare of rural people.

The overall objective of this paper is to assess the role of NCMT in economic development of rural Bangladesh.

The specific objectives of this paper are set out as follows.

- To describe the types and operational modes of NCMT;
- To explore the socio-demographic information about the owner and driver of NCMT; and
- To analyze the role of NCMT in socioeconomic development of rural economy.

NCMT stands for Non-Conventional Mechanized Transport and is locally known as "Nosimon", "Korimon", "Votvoti", "Alomshadhu" etc in the different parts of the country. There are basically two types of NCMT, nosimon and korimon. It was introduced by a person named Rafique from Boraigram of Bogra district during 1980s. He was a bicycle maker. Firstly he made it combining a low horse power shallow engine and a rickshaw van. Since its introduction in 1980s, it has gone through a process of development on trial and error basis without any official research. It has now reached a phase of maturity and has been expanding very fast. Now it is available in alternative designs and models based on the demand for different types of transports. These innovative people are constantly upgrading the design and mechanical devices and this will remain at the centre of rural economic activities for decades to come in Bangladesh. It becomes the lifeline of almost all the people in rural Bangladesh.

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2. Methodology

2.1 The data

The methodology of this study includes selection of study area, sample size, selection of respondents, and data analysis tools for the impact of NCMT in the economic activities of the rural people. Primary data were collected from the owners and drivers of this transport in the rural areas using a structured questionnaire. Face to face interview method was followed for collection of data.

Study Area

It is observed that the NCMT is widely used all around the country except in hills and haors. Though it is used around the country, the concentration and intensity of use is much higher in the Northern Bangladesh. In this context, two districts from Northern Bangladesh, Rajshahi and Bogra were selected purposively. The district of Bogra is the principal manufacturing area for this type of transport while Rajshahi is one of those areas where NCMTs are used extensively. Three Upazillas were selected purposively from each district and a simple random sampling technique was then used to select the respondents. Total sample size is 78.

3. Findings and Discussions

3.1 Types of NCMT

Based on the structure of body, NCMT could be classified in three broad categories. These are Framed body, Plain Body and Steering as illustrated in Table 3.1. A brief overview of these types is presented below.

Framed body

Framed body is characterized by its body structure. Structurally this kind of NCMT is covered by some rods and irons across half of the body of NCMT. This type is covered with rods and some steel plates. These NCMTs are very common in all the six study areas. Any kind of goods and people of most walks of life are being transported easily by this transport. This flexibility and easiness of use is the reason for the existence of these kinds of transport in all upazilas of the study areas. The concentration of Framed body is highest in Dhunot, while Sherpur, Shibgonj, Paba and Puthia contain nearly about 50 percent of NCMT as Khacha. Mohanpur has the least concentration of Khacha among the upazillas.

Plain Body

The second type of NCMT is known as plain body. It looks like just rickshaw van. A shallow engine is placed on it instead of peddle. This is the justification for its name as plain body. This kind of NCMTs is available mostly in Rajshahi District. The drivers and the people of Bogra district are not familiar with this type of transport. Their purpose is served by the Framed and Steering type of NCMT.

TADIE 5.1 : TYPES OF NCMT									
	Number per	Framed body	Plain Body	Steering	Total				
Area	route	(%)	(%)	(%)	(%)				
Dhunot	57	90	0	10	100				
Sherpur	81	67	0	33	100				
Shibgonj	80	78	0	22	100				
Mohanpur	71	27	48	24	100				
Paba	71	37	40	31	100				
Puthia	102	50	45	5	100				

Table 3.1 : Types of NCMT

Source: Questionnaire survey, 2013

Steering

All of the six study areas contain Steering type of NCMT. It is well known as Steering because of its handling system. This is driven and controlled by a steering. This type of NCMTs mostly use high capacity shallow engine, powered by 18 Horse Power (HP) to 32 HP. This contains 4 to 6 gears within it, and a heavy braking system and other modern technical devices.

3.2 Socio-Demographic Information of the Owner of NCMT

Some of the basic information regarding age, education and training of the owners and drivers as well as the mode of operation according to the types of the vehicles are presented in Table 3.2. It is found that the range of age of the drivers of the NCMT is from 16 to 55 years. The average age of the people who drive the NCMT in the study area is about 33 years. Besides driving, the drivers also perform the duty of loading and unloading. The cost of loading and unloading is inclusive in the cost of freight. So only the strong and physically fit people are generally the drivers of NCMT. Those people, with the ability of doing any hard work, are able to drive these vehicles. Information regarding education and training are presented in columns 3, 4 and 5 of Table 3.2. Most of the people involved in NCMT are literate and on an average they have received 6 years of education. Only 8 to 10 percent of the respondents in the study area have completed Higher Secondary Certificate (HSC) or Graduate level education. Whether literate or illiterate, it does not make any difference in terms of their earning in this profession.

Training for learning driving and training of drivers about the technical issues regarding vehicles is important for safety and security of the passenger and drivers. However, almost all the drivers of NCMT have no institutional training to drive NCMT as a professional driver. For the people who want to get the job of NCMT, 3/4 days' field practice is enough to drive NCMT. These people do not feel any problem in driving without any training. About 75 percent drivers have expressed that they have no institutional training to drive NCMT. Table 3.2 column 4 and 5 provide information regarding training of the drivers.

Area	Average	Average	Trai	Training		pe of pation	Average hours of
Area	age	year of Education	Yes	No	Full time	Part time	work per day
1	2	3	4	5	6	7	8
Dhunot	32	5	23	77	100	00	10
Sherpur	38	6	23	77	100	00	11
Shibgonj	33	5	23	77	100	00	8
Mohanpur	34	5	15	85	100	00	10
Poba	33	7	15	85	100	00	9
Puthia	30	8	15	85	100	00	7
Average	33	6	19	81	100	00	9

Table 3.2 : Socio-demographic Information of the Owner of NCMT

Source: Questionnaire survey, 2013

About 25 percent respondents who was involved in Steering informed that they have received 3 to 4 months' informal training.

3.2.1 Occupation before Involvement with and Dependency on NCMT

This sector has attracted people from 15 different types of occupation. They are van puller, rickshaw puller, cart pusher, agricultural and other labor, mason, carpenter, grill and lead workers, petty business, construction worker, cycle/rickshaw maker, transport labor, grocery trader, new comers, or students,

aqua culture, employee of shop and hotel, wood trader, CT driver, and garment worker as shown in Table 3.3. Those who were involved in illegal activities also came to this business. It is found that twenty three percent of the drivers were from agricultural labors. This has given them better opportunity to earn more and get job round the year.

Occupations	%	Occupations	%	Occupations	%
Agricultural labours	23	Petty businessmen	9	Grocers	5
Rickshaw and van pullers	17	Mason, carpenter, metal workers	8	Shop keepers, waiters	4
New comers	13	Transport worker, drivers	6	Illegal workers	3

Table 3.3 : Percentage Distribution of Occupation before Involvement with NCMT

Source: Questionnaire survey, 2013

Seventeen percent of the respondents were from van and rickshaw pullers while thirteen percent have come as newcomers in this occupation. Nine percent of the total respondents were the petty businessmen. Eight percent of the total respondents have come from the occupation of mason, carpenter, and grill and metalworker. Among the total respondents six percent was transport workers and conventional transport drivers. The rest came from occupations like grocery, shop keeping and illegal activities.

It is found from the field survey that people depend on NCMT in two ways. Firstly, some people directly depend on it and the farming people transport their agricultural product through NCMT.

3.2.2 People's Dependency

Within the six study areas it is found that the total number of NCMT is about 6046. Among these, 5755 persons are the owner of those NCMT. Column 2 in Table 3.4 shows the total number of NCMT in the study areas. So it can be said that almost one NCMT belongs to one household. In the study area, according to respondents' opinion, an average household consists of about 4 members whereas the average household size in the country is about 4.4 persons and in Rajshahi Division it is 4.1 person (BBS, 2011). Table 3.4 column 5 shows the total number of population engaged in NCMT in the six study areas.

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Area	No. of NCMT	No of owner	Family size (Average)	No of Direct dependents on NCMT
1	2	3	4	5
Dhunot	740	670	4	2960
Sherpur	1134	1035	5	5670
Shibgonj	960	925	4	3840
Mohanpur	923	920	4	3692
Poba	1065	935	5	5325
Puthia	1224	1270	4	4896
Total	6046	5755	4	24184

Table 3.4 : Nature of Direct Dependencies on NCMT

Source: Questionnaire survey, 2013

Among the family members of the respondents, there are 114 school going students in the study area. In addition to direct dependents there are a significant number of people involved in forward and backward linkage activities. These activities include the petroleum supply, maker/repairer, spare parts shops as forward linkage and shallow engine supply, body construction, wheel supply and other mechanical device supply as backward linkage.

4. Agricultural Dependency

It is reported that most agricultural commodities are transported by NCMT. The figures are presented in table 3.5. The table shows that the conventional transport system carries only 26 percent of the agricultural products whereas in an average 74 percent are carried by the non-conventional vehicles. The figures would be much higher if the NCMTs were not forced to operate outside the district headquarters. This is the case for the study areas in Sherpur, Paba and Puthia. The upazillas are located in district headquarters and the movement of NCMTs is restricted by law enforcing agencies.

 Table 3.5 : Transportation of Agricultural Commodity by

 NCMT and CT (in percentage)

				· •	0 /		
Area	Dhunot	Sherpur	Shibgonj	Mohanpu	ur Paba	Puthia	Average
1	2	3	4	5	6	7	8
СТ	22	30	24	25	29	28	26
NCMT	78	70	76	75	71	72	74
TOTAL	100	100	100	100	100	100	100

Source: Questionnaire survey - 2013

One of the striking features of transporting agricultural commodities is that it has significantly reduced the post harvest loss in the field. The harvested crops are immediately transported to safety.

The respondents also expressed their opinion on the suitability of using the NCMT as their first option to transport agricultural goods. Some important reasons are as follows. Firstly, rural agrarian people can minimize their transport costs as NCMT charges very small fare as compared to conventional transport. Secondly, NCMT possesses the feature of carrying any amount of goods which makes it user-friendly particularly to small and medium farmers. Thirdly, NCMT is time-saving as compared to other rural transport such as rickshaw van, bullock cart, push cart etc that ply simultaneously on the rural roads. Fourthly, availability of NCMT in rural areas is very high. People can get NCMT anytime. Finally, the accessibility of NCMT is completely hassle-free. People can have easy access with low fare to NCMT.

Because of these unique characteristics of NCMT, farmers prefer it to carry their goods. Other conventional transports cannot give this type of services in the rural areas, which is why rural people depend on it. Most of the respondents said the students, teachers and others persons engaged with educational institutions used to go to their institutions by this mode of transport. This transport charges low cost than that of others, said the respondents. It is available anywhere and anytime, easy to reserve in any time and it is more comfortable than other transports available in the rural area. For these types of facilities the school and college going people depend upon NCMT instead of CT.

4. Investment in NCMT sector

Total investment and efficiency of employment generation of NCMT is presented and compared with that of the conventional transport in the following sections. Total investment in the study areas and the volume of employment generation by the NCMT are presented in Table 4.1. Ratio of employment generated to volume of investment is also presented in that Table.

The purchasing price of NCMT is considered here as the total investment. The operating cost mentioned in Table 4.1 includes local thana police bribery cost, traffic police bribery cost, local mastan (muscle man), municipality cost, chain master cost etc on the monthly basis in addition to fuel and maintenance.

It is evident in Table 4.1 that there exist more than six thousand NCMT in the study areas. One person drives and operates one NCMT, so total employment generated in this sector is about six thousand persons per year. These created

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Area	Yearly	Total	Average	TI6 (100	TOC7 (100	E-I	E-I Ratio
	working	Employ	Income	thousand	thousand	Ratio	by TI
	man-hour	ment 5	Tk person/	taka)	taka)	by TI	(without
		(person/y.	month				Steering)
Dhunot	450240	740	12615	1127.14100	1.70385	0.5944	0.8496
Sherpur	608580	1134	12769	1335.93660	1.36450	0.7747	1.3736
Shibgonj	699300	960	13308	1424.50000	1.67700	0.6493	1.3493
Mohanpur	618240	923	16077	1278.09160	1.42900	0.7198	0.8593
Poba	628320	1065	10131	1543.46060	2.01600	0.6057	0.8108
Puthia	719040	1224	14000	1692.02100	1.28250	0.7505	0.9632
Total	3723720	6046		8401.15080	9.47285	0.6850	1.0343

Table 4.1 : Employment Investment (E-I) Scenario by NCMT Sector

Source: Field Survey, 2013

nearly 40 hundred thousand working man-hour yearly in the job market. Table-4.1 also shows the total investment which is over 8400 hundred thousand taka. The total operating cost is also a considerable amount which is just over 9 hundred thousand taka. It reflects the unusual costs of this sector.

The E-I ratio indicates the number of yearly employment per one hundred thousand taka investment. The average E-I ratio is 0.685, the highest ratio being in sherpur and the lowest in Dhunot. Tables 4.1, 4.2 and 4.3 and Figures 4.1(A of B) compare the E-9 ratio of different mechanized modes of rural transport with that of NCMT. Among the NCMTs, khacha and Plain body types are more than 80 percent. So employment generation is the highest in Khacha and Plain body type NCMT. If we consider employment generation without Steering type NCMT, we get the E-I ratio about 1.0343, which is illustrated in the last column of Table-4.1.

Table-4.2 indicates the performance of the conventional transport, CNG. In the study areas CNG employed nearly 7 hundred persons with total investment of 2488 hundred thousand taka. The E-I ratio is about 0.27, which is lower than that of NCMT. The E-I ratio of bus is also lower than that of NCMT which is shown in Table-4.3. Figures 4.1(A) and 4.1 (B) show the E-I ratios among the different

^{5.} Total employment: In the study area, one NCMT employed one person. So total employment includes the total number of NCMT in each study area.

Total Investment (TI): Total investment has been calculated by the initial purchasing cost of each NCMT. So TI is calculated by the initial purchasing cost of NCMT multiplied by the Total number of NCMT.

Total Operating Cost (TOC): Operating cost includes maintenance cost of NCMT, fuel cost of NCMT and other costs such as local police, municipality, local mastan (muscle man) at transport sector, traffic police, chain master and so on. It has been calculated for one month.

Area	Total Employment (person)	TI per CNG (100 thousand taka)	TOC per CNG (100 thousand taka)	TI (100 thousand taka)	E-I Ratio
Dhunot	216	3.63750	0.09738	785.70000	0.2749
Sherpur	200	3.63750	0.11189	727.50000	0.2749
Shibgonj	206	3.51875	0.11788	724.86250	0.2842
Puthia	50	5.00000	0.09000	250.00000	0.2000
Total	672			2488.06250	0.2700

Table 4.2 : E-I Ratio for CT (CNG)

Source: Field Survey, 2014

Table 4.3 : E-I Ratio for CT (Bus)

Area	Total Employment (Person)	TI per Bus (100 thousand taka)	TOC per Bus (100 thousand taka)	TI (100 thousand taka)	E-I Ratio
Dhunat	36	12.14567	0.51559	145.74804	0.2470
Sherpur	48	11.66667	0.49166	186.66672	0.2571
Total	84			332.41476	0.2527

Source: Field Survey, 2014



Figure: 4.1(A) - E-I Ratio of different mechanized rural transport mode with NCMT



Figure: 4.1(B) - E-I Ratio of different mechanized rural transport modes with NCMT except steering type NCMT

Source: Field Survey, 2014

modes of transport. It appears that the E-9 ratio of NCMTS is of other motorized transport.

5. General Observations

The survey report shows that the daily movement of these vehicles are within 50-55 km. NCMTs with 6 to 10 HP engine move locally within 5 to 15 km. route with 3 or 4 trips per day. NCMTs with the heavy duty engines like 25-35 HP move 100 km to 160 km per day. These NCMTs move in different routes daily, but these are not generally used, rather used as reserve transport. On the other hand, NCMT with low HP engine moves as a passenger or freight transport within the locality as a general transport. The owner or driver of those NCMT drives these transport 75 percent daily in one route. But only the bigger one which is about 25 percent of the total NCMT runs in different routes daily. All of these drive 7 days a week. This is because NCMT profession is their main profession and their family depends on it. About 10 to 12 passengers can be carried with the NCMT of 6 to 12 HP engines. Almost 16 and above passengers could be carried through the NCMT with 15 to 25 HP engine (Table 5.1, column 8 to 11).

In the case of freight transport, these are able to carry from 187 to 5598 kg in one trip. This depends on the engine power of the NCMT. Table 5.1 column 12 shows the carrying capacity of the NCMT in the study area. According to the respondents, longevity of the NCMT depends upon its use and care. Some have been seen to live up to 25 years with a bare minimum cost of maintenance.

	Тур	Type of Movement in %			nt in k	Р	Trip assen	wise ger (¶	Goods per Trip	Longevity		
Area Area Area Area Area Area Area Area	Daily	Often	Sometim es	Different	Movemer a weel	10 to 12	12 to 14	14 to 16	16 and above	per Trip in kg('00)	of NCMT in year	
1	2	3	4	5	6	7	8	9	10	11	12	13
Dhunot	52	77	0	0	23	7	15	0	8	54	31.72	12
Sherpur	55	15	38	8	38	7	38	23	8	0	22.76	14
Shibgonj	53	8	69	0	23	6	23	31	15	15	23.13	14
Mohanpur	55	0	85	0	15	7	8	23	38	15	22.76	15
Poba	51	38	38	0	24	7	8	0	38	23	28.73	19
Puthia	50	8	77	0	15	7	15	38	31	0	18.66	13

Table 5.1 : Route Wise Movement System in the Study Area

Source: Questionnaire Survey – 2013

6. Other Usage of NCMT: The Life Line of Rural Economic Activities

The NCMT types of transport are used in various kinds of business and work in the rural areas of Bangladesh. Government and non-government organizations use these transports daily or in emergency times. The use of these transports can be

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divided in three parts, firstly, personal usage: The people of rural areas of Bangladesh use it in celebrations of marriage and other personal celebrations. They also use it in cases of emergency. Bangladesh has the culture of figment hartals and strikes at times of political demonstration. During hartal all kinds of transport are seen to be non-operating but the NCMT never shuts down its operation. The political activists consider it out of the scope of hartal. In the rural areas of Bangladesh these types of NCMT are used in the case of house transfer. Even people carry the dead body to the grave yard. Farmers transport their perishable goods from the field to the market place daily within the shortest possible time. The political person carries the people to the political meetings and demonstrations. People use it to transfer bricks from the brick field to their house. Farmers of the Rajshahi district have been seen to carry their sugarcane to the sugar mills. Owners of the brick fields use these transports are used to bring fish to the wholesale market.

Secondly, various non-government organizations use these transports. The gas companies carry the cylinder gas from town to the rural area where the pipeline gas is absent. The whole sale companies transport their goods to the dealers in rural areas. In the rural areas of Bangladesh lots of kinder garten schools har been established. They use this transport as a school van in different study areas.

Thirdly, in the study areas the respondents said the local government organizations use these NCMTs for different purposes. For example, Police use it in their daily duty during night because of the shortage of their own transport. During election time local election commissions use it to transport their election goods to remote areas. Local administrations use it to transfer relief goods, local thana police use it to carry the dead body to the hospital for post mortem. Figure 6.1 shows the different kinds of beneficiaries of NCMT in the rural areas of Bangladesh.

From Figure 6.1 it is clear that the NCMT is mostly used in the rural areas to transfer their house. Local election commission also uses it to transfer the election materials to the poling center and vice versa. Local police use it in their regular night duty in the rural areas. There are no blockades to move the NCMT during hartal day on the rural road. Activists of the political parties consider the NCMT out of the scope of hartal. Political parties also use it for gathering in their meetings. Besides, different types of usage of the NCMT are shown in the Figure 6.1.

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Figure 6.1 : Beneficiary Groups of NCMT

Source: field survey, 2013

7. Conclusion

This paper explored the overall livelihood dimension of the NCMT and the livelihood pattern of the people involved with NCMT. A survey was conducted with the owner and driver of the NCMT in the selected areas of two districts. The major findings from the survey are: three kinds of NCMT exist in the study areas; average age of the driver is 33 years; the drivers have no institutional training to drive NCMT; this occupation is their only occupation to maintain their family expenses; total number of 23,020 people and 114 school going children depend on NCMT in the study areas; and about 74 percent agricultural products are transported using these vehicles. These findings have potential to invite appropriate policy measures in this sector. This paper attempts to redress NCMT seeking to change the mindset of the policy makers to think about its importance and role in promotion of transport services in the rural areas of Bangladesh. This paper raises the key issues of the transport in the rural areas statistically. People of the rural areas are able to meet the demand of transport. They proved it through the creation of NCMT by their indigenous knowledge. Policy implications can be made as follow that may be derived from these findings are, among other, the following:

- A rural transport regulatory authority can be formed to institutionalize the NCMT
- Policy should be developed to modernize the NCMT as complementary to existing conventional transport in the rural areas of Bangladesh.
- Huge research is necessary in this sphere. So government should take necessary steps to encourage researches in this sector.
- Initiative should be taken to improve the mechanical device of NCMT.
- Local rural training authority could be formed to train up the drivers and so on.

If these can be done, government of Bangladesh can earn a significant amount of revenue. Rural people will find a diversified and legal sector of employment.

8. Special Remarks

NCMT has already drawn attention both positively and negatively of the people of the country. It has made its presence felt by the mass people. It has been generating huge employment in the informal rural sector and moving the economy by carrying the heavy burden of the rural economy. The robust growth of Bangladesh economy during last decades also originated from this informal sector. One of the striking features of Bangladesh economy is that investment in official statistics has remained stagnant for many years but economic growth is increasing, leaving many of the "in-house Economists" in puzzle to find out the sources of economic growth in the country. This sub- sector is one of the many other informal sectors which has attracted huge investment during the last decades as presented in Table 4.1. This information is not accounted for in official national statistics. This is one of the many internal strengths of Bangladesh on which this economy is flourishing. This could give those "Economists" the clue to get appropriate answer to the puzzle.

9. For the Policy Makers

NCMT has already made its presence felt and will remain present in decades to come in Bangladesh. It has now become the part and parcel of our economy as well as everyday life of almost hundred percent of rural people. There is no way one can ignore or undermine its role. We wish to draw attention of the policy makers for immediate action for the sake of better performance of our economy.

1. The government should recognize it as the most efficient and flexible transport system for rural Bangladesh and should introduce registration procedure to institutionalize this transport system.

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2. There is ample opportunity to generate huge revenue from this sector, which could be further invested for the up-gradation and betterment of this transport system. The owners have expressed their interest to pay taxes to the government if they become registered. They informed that they have been paying bribes to the police men, and are forced to pay money to the Mastans and other power groups. So there is huge potential to generate revenue from NCMT if government recognizes this sector as significantly contributing to the economy.

3. The nature of this transport is mostly complementary to the conventional transport rather than substitute to it, barring some exceptions. So those who are campaigning against this transport, calling strikes and filing petitions in High Courts are actually acting against the interest of the nation as a whole. Recently two strikes were called by conventional transport owners in Southwestern and Northwestern districts to ban the NCMT as inter-district transport. This will create anarchy, promote inefficiency and hinder growth of the rural as well as the national economy. It is now high time to act for the government to recognize these realities regarding NCMT.

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Manufacturing Sector of Bangladesh-Growth, Structure and Strategies for Future Development

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Abstract The paper analyses the role of manufacturing in the future development of Bangladesh and suggests that the country has to accelerate manufacturing growth to achieve the target of economic growth and reduction of poverty. The paper argues that in order to achieve required growth of manufacturing, manufactured export must grow at a high rate as in the past, and there is the need for uplifting the sector from low technology-driven narrow production base to technologically upgraded, high productive and diversified production base. Manufacturing employment must grow at double digit in order to attain projected employment growth under the current five year plan. Manufacturing employment growth at such a high rate seems to be a challenging task before the country. The paper analyses the structural change of manufacturing and sources of manufacturing growth, and hinted on the contribution of size of enterprise, market orientation, factor intensities and subsectoral contribution to manufacturing growth. It identifies some specific sectors enjoying comparative advantage or having growth potentials for future. The paper analyses the constraints in the way of and desirable strategic options for future manufacturing development of Bangladesh. The paper argues for parallel strategies of export expansion, domestic demand expansion and import substitution. Though labour intensiveness need to be emphasised given the factor proportions in the economy, the paper argues that labour productivity enhancement needs to be adequately fostered for long term manufacturing development in the country.

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1. Introduction

1.1. Motivation of the Study

Given the ambitious growth targets of the Vision 2021, it is considered very important to give serious attention to manufacturing for employment expansion, productivity enhancement and increasing per capita income in the country. The main aim of the paper is to review the role of manufacturing in the transformation of the Bangladesh economy, analyse the pattern of its growth and structural change in the economy as well as within itself and identify critical areas of growth and sort out strategic options for its future development of Bangladesh economy. The research task here is to highlight sources of growth and growth potentials of manufacturing by size, market orientation, factor intensities and subsectoral contribution. The study will examine the structure of manufacturing in terms of value added, employment and export earnings. It will review the constraints and challenges of manufacturing sector and sort out the desirable strategies for its development.

1.2. Concrete Objectives of the Study

Main Objectives of the Paper are basically five:

- i. To analyse the role of manufacturing sector in economic transformation and economic growth of Bangladesh;
- ii. To analyse the structural change of manufacturing and sources of its growth;
- iii. To analyse pattern of manufacturing employment and manufactured exports;
- iv. To analyse the status of competitive performance of manufacturing and identify the important products enjoying comparative advantage for future growth;
- v. To review the challenges and strategic options for development of manufacturing in Bangladesh.

1.3. Methodology of the Study

We shall analyse the data for forty years by phases during 1972-2012, each of the phases being of five years, and examine the planned targets and policies for manufacturing growth, which is necessary for economic growth and employment creation in the country. Manufacturing is a part and subset of industry, which includes extractive industries and mining, power and energy and construction besides manufacturing.

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The author is grateful to the referee for his valuable comments and suggestions on the earlier draft of the paper. However, responsibility for any error of omission and commission rests with the author.

1.3.1. Data Source

The main data source would be secondary data base of BBS, Bangladesh Planning Commission, SME Foundation, Bangladesh Bank, EPB, UN, World Bank and IMF. In spite of the limitations of data of BBS on manufacturing, we have relied heavily on BBS. We have used BBS data of CMI and Economic Census to cover entire manufacturing sector. We have used data of Small and Medium Enterprise Foundation (SMEF) in the groupings of micro, small, medium and large subsectors of manufacturing in six subsectors. There is no uniformity of definition of different size of manufacturing in between the regulatory agencies. We have taken the definition of BBS for analysis.

1.3.2. Tools of Analysis

Our tools of analysis would be estimation of indicators and seeing them longitudinally and as compared to other countries of similar setting. We have resorted to Tabular Analysis, Graphical Analysis and Regression Analysis to arrive at conclusion.

1.4. Structure of the Paper

The paper is structured into nine parts:

- i. Introduction,
- ii. Importance of Manufacturing for growth and in Structural Transformation in the Economy, iii. Sources of Manufacturing Growth in Bangladesh,
- iv. Manufacturing Employment as New conduit of Job creation and Rebalancing of employment,
- v. Factor Intensities and Productivities of Sub-sectors
- Analysis of Status of Competitive Performance of Manufacturing Sector of Bangladesh, vii. Constraints and Challenges in the way of Development of manufacturing,
- viii. Strategic Options for Industrial development, and
- ix. Conclusion.

2. Importance of Manufacturing for Growth and Structural Transformation of the Economy

2.1. Importance of Manufacturing for Economic Growth in Bangladesh

It is widely acknowledged that accelerated economic growth and poverty alleviation, which are the vital goals before the country, require ensuring radical structural shift in the economy favouring the manufacturing sector. In the context of the limited resource base of Bangladesh, low technology and productivity, narrow product mix, the constraints of the domestic market, the pressure for gainful employment of a growing labour force and increasing scope to use the emerging global opportunities, the task of designing a strategy of manufacturing development capable of addressing the emerging challenges, both domestic and global, has become important for future development of Bangladesh.

Manufacturing sector is unique in enjoying benefits of increasing return to scale. The importance of manufacturing is also reinforced by the development of agriculture and service sectors for their reliance on backward and forward linkages with the manufacturing. Manufacturing produces most of the capital goods, all intermediate goods and most of the consumer goods. Manufacturing sector is the most vibrant force of development, and as Weiss (1988)¹ reported, manufacturing "retains the characteristics of an engine of growth-rapid productivity growth, dynamic increasing returns to scale, rapid technological change, and various dynamic externalities".

The case for development of manufacturing as a key feature of development strategy of Bangladesh to accelerate growth and reduce poverty has got established firmly immediately after country's liberation in the very First Five Year Planⁱⁱ. This was consistent with the need of the country at that time for its dynamic development and in line with the stand of economists like Prebisch (1950 and 1984)ⁱⁱⁱ and Singer (1950) who were the pioneers^{iv} for manufacturing development to deal with the problems of backward nations in income generation and employment creation. For a country like Bangladesh from its very inception, the question has been thus not whether but how to develop manufacturing in order to satisfy basic needs of vast population in food and non-food goods, make savings for increased investment, earn foreign exchange and create employment of growing labour force not absorbed in agriculture or in service sector.

As evidence shows, manufacturing growth in Bangladesh was very slow to compensate for the decline of the share of agriculture to increase GDP of the country, which ranks low among the comparable nations in terms of contribution of manufacturing to GDP and its growth. The Perspective Plan of Bangladesh 2010-2021^V has emphasized the need for gearing industrialization to achieve the 8% growth target by 2015 and 10% growth by 2021. The overarching goal for the country's industrialization, as the document of Perspective plan notes, is to enhance the industrial contribution to GDP to 40% over the next decade, with a share of 30% for the manufacturing sector. Bangladesh Industrial policy of 2010^{Vi}

has recognized the importance of manufacturing for economy-wide productivity enhancement and diversification of economic base of the country. Likewise, manufacturing sector received serious attention under the sixth five year plan and the perspective plan in consonance with Vision 2021 for country's future development and achievement of high growth rate.

Main concern here is that Bangladesh manufacturing is narrowly concentrated in low technology based sub-sectors, and has to face challenges in the way of diversification and productivity enhancement. Sixth Five year plan has recognized the importance of manufacturing as a vehicle for accelerating growth of the economy. It is projected that during the period of Sixth Five Year Plan, the manufacturing sector will have to outface both the agricultural and service sectors and follow a smooth upward trajectory. The manufacturing sector is planned to follow an upward trend from annual growth of 6.5% in FY 2010 to 11.7% in FY 2015 with average annual growth of 10% during the plan period. This five year development plan will upgrade the industrial employment to 25 per cent of the population from the current 17 per cent by June 2015, its final implementation time.

2.2 Strategic Structural Transformation and role of Manufacturing

2.2.1 Past experiences of Transformation of Bangladesh Economy

In strategic transformation of Bangladesh economy, past experiences of Bangladesh indicate that while the share of agriculture was on a sharp decline from 44% in 1972-80 to 20% in 2006-10, the share of manufacturing to GDP increased from 10% in 70s to only 17% in 2006-10 (Figure-1).

Transforming Bangladesh's agrarian economy into a modern manufacturing and organized service based economy is needed to enhance productivity and faster growth. The focus on manufacturing is based on two important points. Firstly, expansion of agriculture is limited by fixity of land and secondly, the increase in labour productivity will require switch over from low productive agriculture to high productive industry and modern service sector.

Following the slow growth of manufacturing in the 70s and 80s, which was below the average economic growth, the manufacturing sector growth performance improved during the 1990s. The faster pace of expansion of manufacturing relative to total GDP since FY91 caused its share to increase gradually, rising from its low level 12 percent in FY91 to 17.2 percent in FY10 (Fig.1). In the 1970s and 1980s, manufacturing sector performance was constrained by the dominance of poor performing nationalized enterprises and inadequate private investment and reckless divesture of public enterprises leading to their virtual closure and severe sickness in many cases. In Bangladesh, the pace of industrialization has been gradual and slow, and over the years there has been a moderate structural shift from a predominantly agrarian economy to a more organized manufacturing sector. Though share of manufacturing increased, it was lower than all East and South East Asian Countries (Table-2.1). Compared to Bangladesh's share of manufacturing, Vietnam increased its share of manufacturing from 12.3% in 1990 to 21% in 2008 and Malaysia from 24% to 28% over the same period. On the other hand, China's share of manufacturing has been steady at 32-33% over that period. Even Thailand's manufacturing grew so rapidly since 1990 that its share rose from 27% to 35 percent.

Table 2.1: Comparison of Bangladesh with countries in Asia during1980-2010 in respect of % manufacturing to GDP

Countries	1980	1990	2000	2008	
Malayasia	21.5	24.2	30.9	28.0	
Thailand	21	27	34	35.0	
Vietnam	10.5	12.3	18.6	21.1	
S. Korea	25	27	28	28.0	
China	30.2	32.7	32.1	32.9	
Bangladesh	10.8	12.7	14.7	17.2	

Source: World Development Indicators, 2011, World Bank

The common thread in the policies of those economies is claimed to be emphasis on private sector driven growth and trade openness. Since 1990, Bangladesh has also changed economic policy stance in these general directions though in a more

Fig.1: Structural Change of Bangladesh Economy



gradual way. Progress is most advanced in regards to emphasizing the role of the private sector, but attracting direct foreign private investment is less advanced. One notable development in the economy is the predominance of manufacturing goods in exports (90-95%) as the latter progressively becomes the driver of high growth.

2.2.2 Strategic Goal of Structural Transformation

Promotion of structural transformation in the economy has been cited as one of the important strategic goals of Perspective Plan of Bangladesh 2010-21. In the structural transformation process, within the time of Perspective plan-2011-21, agriculture's share will decline from 22% in 2009 to 16% at the end of Sixth Five Year Plan and 15% by the end of Seventh Five Year Plan and share of industry will increase from 29% to 35% by the end of Sixth FY Plan and 40% by the end of Seventh Five Year Plan. Share of manufacturing will grow from 17% in 2010 to 26% in 2015 and 30% in 2021^{Vii} (Table-2.1). Taking past experiences into consideration, achieving 26% share of manufacturing by 2015 and 30% by 2021 as projected by perspective plan seems to have been highly challenging task. Hence, Sixth Five Year Plan has revised share of manufacturing downward to 22% by 2015. However, For Bangladesh to reach middle income threshold by 2021, manufacturing expansion is obligated to accompany hand-in-hand with highly productive farm and non-farm agriculture.

As a strategic option, Sixth Five Year Plan explicitly has chosen the path of boosting manufacturing for creating productive high income jobs and development. It is found that decline in share of agriculture is projected to be compensated by increased share of industry and manufacturing while share of services remains steady (Table-2.2). The Plan tried to make a balance, thereby creating more employment opportunities in the manufacturing and allowing a shifting of large number of workers engaged in low productive employment in agriculture and informal services to these higher productivity sectors of the economy. In the future transformation of Bangladesh from low productive to high productivity level, manufacturing has to assume a crucial role to play. Accordingly, manufacturing is projected to constitute 21.1% by 2015 increased from 18% in 2010, and its dynamic growth contribution is projected to be around 30% increased from 18.5% in 2010 i.e. by 11% (Table-2.2).

2.3. Manufacturing Growth Performance of Bangladesh in Different economic Phases

Bangladesh witnessed decades of slow economic growth until 1990. Growth rate started to rise since early 1990s and during the first decade of the 21st century, the

Sectors	Average (FY04- FY09)	Target FY 2015 as per Perspective Plan	Target FY 2015 as per SFYP	Target FYFY2021
Agriculture	21.70	16.0	15.5	15.0
Industry	29.00	35.0	32.0	40.0
Manufacturing	17.10	26.0	21.1	30.0
Service	49.30	49.0	52.5	45.0

Table 2.2: Strategic Goal of Structural Change (Sectoral Share of GDP, per cent)

Source: Perspective Plan of Bangladesh 2010-2021 and Sixth Five Year Plan of Bangladesh 2011-15

Table 2.2: Planned Projection of role of Manufacturing in theTransformation of future Bangladesh

	2010	2011	2012	2013	2014	2015
Share as % of GDP						
Agriculture	18.6	18.4	17.7	16.9	16.2	15.5
Industry of which	28.5	28.7	28.9	30.4	31.3	32
Manufacturing	17.9	18.2	18.7	19.6	20.4	21.1
Services % Contribution to GDP Growth	52.9	52.9	52.9	52.7	52.5	52.5
Agriculture	15.38	13.05	11.11	9.92	8.91	7.90
Industry	29.92	37.44	38.70	40.16	42.05	43.59

Source: Adapted from Data of SFYP, 2011.

average economic growth rate approached 6 percent per annum (Table-2.3). Even though the Bangladesh growth path is rising, the average growth rate for Bangladesh during the 2000s was much lower than that of the rates in China, India and Vietnam^{Viii}. Manufacturing growth during the seventies lagged behind economic growth. In the later period since eighties, manufacturing growth outstripped GDP growth (Table-2.3). Double digit growth in manufacturing is a long cherished goal for the country though it did not yet reach the goal (Fig.2). Though manufacturing has small share of GDP, its growth over the years has been steady (7% a.m. in the last 10 years). Double digit growth is though challenging is not unachievable if power and infrastructure problems are resolved and political stability is maintained. Growth of manufacturing has expectedly exceeded GDP growth though not by high margin (Fig.3). Elasticity results show that for 8% GDP growth, manufacturing growth need to be around 11.0-12.0% p.a which will not be unreachable, though a bit difficult given its past growth experiences and prevailing problems of infrastructure and political instability.

Plan period	Annual average growth (%)					
	Target	Actual GDP Growth	Mfg Growth			
First five year plan (FY73-FY78)	5.5	4	2.5			
Two year plan (FY78-FY80)	5.6	3.5	6.3			
Second five year plan (FY80-FY85)	5.4	3.8	4.7			
Third five year plan (FY85-FY90)	5.4	3.8	5.1			
Fourth five year plan (FY90-FY95)	5	4.2	6.9			
Fifth five year plan (FY97-FY02)	7	5.1	5.78			
FY02-FY06		5.5	8.95			
FY06-FY10		6.3	7.48			
Weighted Average		4.53	5.81			

Table 2.3: Growth performance of the economy and Manufacturing inDifferent Plan Periods 1973-2010

Source: Adapted and calculated from the data of Bangladesh Bureau of Statistics





2.4 Dynamics of Sources of Economic Growth and role of Manufacturing

Drivers of structural change of economic growth are the industry and service sectors in all the plan phases of Bangladesh economy. After drastic reduction of its contribution to growth of the economy during 1980-95, agriculture revived its contribution during Fifth Five Year Plan period. Again, it fell during 2002-2010. In the First Five Year Plan Period, contribution of service sector to economic growth was only 29%. In this period, contribution of industrial and manufacturing sector was spectacularly high (46% and 26%, respectively) which was not repeated in the subsequent period. This might be associated with reckless divesture of public sector manufacturing plants to the hands of inexperienced investors and rental interests. During 2006-10, contribution of manufacturing to economic growth was



Fig.3: Relation between GDP Growth and Manufacturing Growth in different planned phases

only 21.6% which is much lower than that of First Five Year Plan Period (Fig.4). Though the share of contribution of agriculture to economic growth has declined sharply, manufacturing sector could not fill up the vacuum and consequently service sector of low value added activities came to absorb labour unleashed from agriculture to increase income of the population. With declined share of low productive agriculture to economic growth, it was expected that the share of high productive manufacturing could have developed creating a dynamic path of development of a backward economy. The contribution of service sector to economic growth during 2006-10 increased to 54% which is the highest after 1990. This might be due to anomalies during Caretaker Government, food and energy crisis, global financial crisis and environmental hazards making great havoc on the economy.

Fig.4. Contribution of Manufacturing along with other sectors to GDP Growth



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2.5. Growth Projections of Manufacturing under Sixth Five Year Plan

Manufacturing growth has been planned to increase from 6.5% in 2010 to 11.7% in 2015 (Table-2.5). This growth is necessary to sustain the growth momentum of the economy. Thus double digit growth in manufacturing and industrial sector is important for realization of the target goal of economic growth envisaged in the plan. In the eventual development, share of manufacturing has been planned to increase from 17.8% in 2010 to 21% by 2015, which is not very high.

3. Sources of Manufacturing Growth

We shall analyse here sources of manufacturing growth by scale of operation, market orientation and subsectoral performance.

Table 2.5: Growth projections and Projections of share of the sectors and ofManufacturing and their Contribution to GDP Growth

	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015
Growth Rate (%)						
Agriculture	5.2	5	4.5	4.4	4.3	4.3
Industry	6.6	9.2	9.6	9.9	10.5	11.5
of which						
Manufacturing	6.5	9.5	9.8	10.1	10.7	11.7
Services	6.5	6.6	6.8	7.1	7.3	7.8
GDP	6.1	6.7	7	7.2	7.6	8
Share as % of GDP						
Agriculture	18.6	18.4	17.7	16.9	16.2	15.5
Industry	28.5	28.7	28.9	30.4	31.3	32
of which						
Manufacturing	17.9	18.2	18.7	19.6	20.4	21.1
Services	52.9	52.9	52.9	52.7	52.5	52.5

Source: Calculated from BBS and SFYP Projections

3.1. Dynamics of Sources of Manufacturing Growth by scale of manufacturing

3.1.1. Static Analysis of Level of Scale of Operation

Regarding scale of manufacturing operation, as per Economic Census (2002), around 93.3% of manufacturing enterprises belong to small and micro manufacturing enterprises (1-9 persons) and provide 47% of manufacturing employment, and the large manufacturing enterprises (10 & above as per definition of Economic Census) constitute 6.7% and provide 53% of manufacturing employment^{iX}. Both micro and small enterprises (1-49 as per CMI definition) constitute 98.7% of total manufacturing enterprises. Large and

medium enterprises constitute 1.3% of total manufacturing enterprises. Second important observation is that share of manufacturing in non-farm establishment and employment increases with the size of enterprise from 12.6% and 26.4% respectively in micro and small enterprise to 32.7% and 52.4% respectively in large size manufacturing. From this, it is evident that Bangladesh manufacturing is characterized by dualistic pattern implying need for dualistic approach in making decisions for financing, technology choice and for technology upgradation as well as marketing the products.

3.1.2 Dynamics of Share of manufacturing to GDP by Sizes

Results of data analysis suggest that though in the seventies, the proportion of both large and small sizes of manufacturing industry was near to each other, divergence grew in course of time to such an extent that now only 30% of manufacturing is from small sized manufacturing (Fig.5). Though the share of large scale manufacturing has grown from 5.55% to 12.3% GDP, the share of small manufacturing to GDP has remained at 5% in 2006-10 as was in the seventies.

3.1.3 Manufacturing Growth by size and Contribution by Each Size.

Growth remains steady at around 8% in both sizes after the 90s and contribution of large and small size to growth of manufacturing remains at 70% and 30% respectively (Fig.7). Again, labour productivity, capital productivity and



Fig.5: Share of Large and Small Scale Manufacturing to GDP

profitability are higher in small and medium enterprises. Thus both size categories deserve attention for accelerating manufacturing growth in the economy. Small manufacturing units need special attention because of more flexibility and labour absorptive capacity.



Fig.6: Growth of Overall Manufacturing and Large and Small Scale Manufacturing

Growth of manufacturing was as high as 26% in 1970s because of high growth in large and medium enterprises. During 1981-1990, manufacturing growth did not increase more than 5%. During 1990-95, there was steady manufacturing growth of 8% per annum. Again, it slowed down in 1996-2000.During 2001-2010,

Fig.7: Share of Contribution to GDP Growth of Different Sizes of Manufacturing



manufacturing growth was on average 7.8% per annum (Fig.6). Under the Sixth Five year Plan, this growth figure of manufacturing needs to be increased to around 10% p.a. on average to attain average economic growth of 7.3% p.a.

Manufacturing growth during the period of SFYP is expected to come from small, medium and large sizes. The role of small enterprises is particularly important to provide the employment base. The promotion of small enterprises in rural areas needs to be a major strategic element for creating higher income and employment in the rural economy, which is critical for sustained poverty reduction.

3.2. Sources of Manufacturing Growth by Market Orientation: Export Expansion, Import Substitution and Domestic Demand Expansion

Historically there has been strategic shift from import substitution to export orientation strategy for manufacturing development in Bangladesh. The dynamism in manufacturing sector is thought to benefit from greater outward orientation. Bangladesh has witnessed this benefit from the highly positive experience of the ready-made garments (RMG) sector. Following experiences from Korea, China, India, Thailand and Vietnam, Bangladesh has started strengthening the role of exports in manufacturing development.

In the seventies as estimated by the author following Chenery's methodology of decomposition of sources of growth^X, export orientation strategy could contribute only 15% manufacturing growth. In the early eighties its contribution rose to 24%. During the period 1986-2000, export expansion as source of manufacturing growth contributed more than fifty percent. After 2001, its share of contribution again declined from 69% in 1996-00 to 34% in 2001-05 and 45% in 2006-2010.Import substitution and domestic demand expansion together as sources of growth worked well upto 1985. But import substitution independently did not work well even in the seventies. Thus except in the two periods-period of early 1980s and early 2000s, import substitution could not show positive contribution to manufacturing growth. This is a reflection of weak base of manufacturing and import dependence for manufactured consumption and for long term industrial development of the economy. Domestic demand expansion was found to have a crucial role in the growth of manufacturing in all the periods. Export expansion steadily and increasingly contributed as well to the growth of manufacturing (Fig.8). Manufacturing sector is expected to be thrusted upon for effectively addressing not only external market but also vast domestic demand of more than 150 Million people of the country. Experiences of East Asia suggest that strengthening domestic production base for addressing domestic consumers and competing imports is the precedence for gaining

export competitiveness. Import substitution efforts are in the long run preparations for strengthening edge for export competitiveness. Thus export expansion and import substitution are not exclusive for industrial development of Bangladesh. Medium and long term plans are needed to look into using its abundant labour resources through constant development of their skill and education under a long term manpower planning. Industry should have been planned for economy-wide productivity enhancement and for strengthening competitiveness and sustained import substitution and export orientation.

3.3. Subsectoral Sources of Manufacturing Growth and Identification of Potential products for future growth

We have identified 30 products having high growth potentials for manufacturing development of Bangladesh. Three products like garments, pharmaceuticals and



Fig.8: Sources of Manufacturing Growth by Market Orientation

textiles constitute 65% of manufacturing growth (Table-3.1) Other important contributors to manufacturing growth are cement, food products, books and periodicals, re-rolling steel mills, leather footwear, perfumes and cosmetics, paints and varnishes, batteries, ceramics, glass products, wires and cables, wooden furniture, motor cycle and plumbing equipment. The important products with low positive contribution are machinery equipment, machinery parts and electrical appliances. The potential products with negative contribution to growth are jute textiles, tanning and finishing leather, fertilizer, rubber footwear and

shipbuilding. Negative growth contribution of 17% of two big sectors - jute textiles and fertilizers carrying 25% weight has much affected the growth of manufacturing in the economy (Table-3.2). Negative growth of sugar and paper (5% Weight) is also another headache for the manufacturing development of the country. Out of top ten products, around 95% of growth of value added belongs to five products-ready made garments, pharmaceuticals, food products, cotton textiles and non-metallic mineral products. Around 23 products constituting 45% product categories at 4 digit level showed positively high growth potentials (Table-3.3). Important high growth products are garments, pharmaceuticals, and ceramic. Cement, electric machinery, plumbing equipment, wooden furniture, leather footwear, paints and varnishes, soaps & detergents, bricks & tiles, batteries, particle board, silk and synthetic textiles, motor cycles and printing. Another 7 Products constituting 14% of product categories experienced shift to positive growth from negative growth .Here important products are re-rolling steel, Textile Machinery, Spirit & Alcohols, vegetable oil and soft drinks. Though we can pick up products with high positive contribution to manufacturing growth, there are potential products having lower and even negative contribution in the past as evidenced in the Tabular data. Thus not only past performance but also future prospects need to be reckoned with for assessing potential products.

In the growth projections of subsectors, textiles, leather products, fertilizer and machinery sectors have been given topmost importance. Textiles and clothing have the capability to increase its share with higher growth because of growth of knitted and woven garments. Among other manufacturing, jute textiles tend to rebound to respond to demand for environment friendly products. Food processing also has high prospect for growth in the plan period. As the tabular analysis (Table-3.4) shows, four products have more than 80% share of manufacturing growth during sixth five year plan period and there is no much breakthrough for diversification of manufacturing growth base of the country. It is important to note that four important sectors of the economy jute textiles, fertilizer, paper and sugar having weight of 31% contributed negatively during the 1988-2010 affecting the manufacturing growth on a sound footing.

3.4 Manufactured Exports to accelerate manufacturing growth

For acceleration of manufacturing and economic growth, it is deemed necessary to ensure buoyant growth in export earnings and imports of capital goods and raw materials. Manufacture astoundingly constitutes 95% of Bangladesh exports. Plan

Table 3.1: Subsectoral (4-digit) Sources of manufacturinggrowth during 1988-2010

	Compound Growth Rate						
-	Weight	1988/89- 2000/01	1988/9- 94/5	1994/5- 2000/01	1999/00- 2009/10	1988/9- 2009/10	Sources of Growth 1988-2010 in %
General mfg	100	7.13	8.52	5.75	7.51	7.33	100
Readymade							
Garments	9.13	19.06	23.51	14.77	7.93	14.26	33.15
Pharmaceuticals	7.01	10.74	16.82	4.98	12.97	11.98	21.39
Cotton Textiles	7.83	-0.11	-2.77	2.63	12.14	5.51	10.98
Bidies Manufacturing	3.85	12.52	19.35	6.08	8.61	11.04	10.82
Books & Periodicals Silk & Synthetic	1.88	16.38	27.99	5.83	7.02	12.38	5.93
Textiles Black Tea and	1.59	11.80	4.26	19.89	19.88	13.91	5.63
Blending Tea Mfg of Cement	7.87	2.08	2.05	2.11	1.63	1.71	3.43
products	1.17	11.74	-1.38	26.61	7.67	10.64	3.17
Leather Footwear Process of Fish &	1.6	5.39	8.35	2.51	9.78	7.70	3.14
Sea Food Dveing, Bleaching &	1.81	5.57	9.36	1.90	6.58	6.15	2.84
Finishing Iron & Steel Re-	1.19	5.64	6.86	4.44	9.98	6.89	2.09
rolling Mills Mfg of Bakery	1.91	6.12	11.85	0.70	1.96	3.91	1.90
Products Flour Milling (Grain Milling exc. Rice	0.96	7.49	7.63	7.36	7.36	7.09	1.73
Mill)	1.18	3.23	4.81	1.69	7.91	5.37	1.61
Total of 14 Products Other 26 Low Positive Contributor	49						107.81
Products Other 13 Negative	14.55						13.39
Contributor Products	36.45						-21.2
Total 52 Products	100						100

Source: Calculated from the data of BBS of Several Years

Weight	Annual Compound Growth Rate						
	10% &Above	5 to below 10%	2% to Below5%	0 to below 2%	Negative		
5+	Garments Pharmaceuticals Cotton Textiles			Tea	Jute Textiles Fertilizer		
2 to below 5	Bidies Mfg		Cigarettes		Leather Tanning Sugar Paper		
1 to below 2	Cement Books & Periodicals Silk and Synthetics textiles	Fish and Sea Food Dyeing & Bleaching (Printing) Leather Footwear Flour Milling	Re-Rolling Steel Soap & Detergents	Liquified Gas	·		
0.5 to below 1		Bakery Products	Bricks & Tiles Electric Lamps Batteries Ceramic Products News Paper	Sprits and Alcohols Petroleum Products	Ship Building Rubber Footwear Motor Vehicles		
0.25 to below 0.5	Edible Salt	Perfumes and Cosmetics Cable Wires Particle Board	Television Utensils Electrical Appliances	Vegetables and Soya oil	Insecticides Matches Carpets and Rugs		
Below 0.25	Paints and Varnishes Glass Products	Motor Cycles Plumbing Equipment Soft Drinks Wooden Furniture Electrical Machinery			Fabricated Metal Products Engines and Turbines		

Table 3.2: Distribution of Four Digit Industries by Weight and Growth Rate(1988/9-2009/10) contributing to overall Mfg growth

Source: Estimated from the Data of BBS

Weight, 1988/9	High Growth All the time (5 % &	Low to Higher Growth	High growth to Lower Growth	Negative to Positive	Positive to Negative Growth	Always Negative
	Above)	Diamagna		D	E and it is an	T. ()
5+	s	icals		Re- Rolling Steel	Cotton Textiles	Textiles
2 to below 5		Bidies Making Tea	Fish & Sea Food		Sugar	Paper
1 to below 2	Flour Milling	Cement Books & Periodicals Silk and Synthetics textiles Dyeing & Bleaching (Printing) Leather Footwear	News Paper	Cigarette s	Leather Tanning Liquified Gas	
0.5 to below 1	Ceramic	Soaps & Detergents Bricks & Tiles	Cable Wire Electric Lamp		Rubber Footwear Motor Vehicles	Insecticide Petroleum Products
0.25 to below 0.5		Edible Salt Batteries Particle Board Television	Utensils	Textile Machine ry Spirit & Alcohols Vegetabl e Oil	Matches	Shipbuildin g Carpets & Rugs
Below 0.25	Electrica l Machine ry Plumbin g Equipme nt Wooden Furniture	Motor Cycles Paints and Varnishes Glass Products		Soft Drink	Fabricated Metal Products Engines and Turbines	
Total=51	6	17	5	7	10	6
%Lotal	11.76	44.44	9.80	13/3	1961	11.76

Table 3.3: Distribution of Four Digit Industries by Weight and Annual CompoundGrowth Rate (1981/2-1988/9 and 1988/9-2009/10-comparison)

Source: Estimated from the Data of BBS

	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015
Annual growth rates %						
Manufacturing	6.5	9.5	9.8	10.1	10.7	11.7
Food Processing	6.1	7.2	8.4	8.7	10.5	12.5
Leather Products	7.7	8.5	9.4	10.5	11.2	12.2
Textile & Clothing	7.6	14.4	13.5	13.8	14.2	15.1
Chemical Fertilizer	5.3	6.1	6.7	6.8	7	7.4
Machinery	5.9	6.2	6.6	6.7	7.2	7.9
Petroleum Products	4.3	4.7	5.5	5.6	5.9	6.1
Other manufacturing	8.2	8.4	8.9	9.1	9.2	9.3
Share as % of Total GDP						
Manufacturing	17.9	18.4	19	19.7	20.5	21
Food Processing	2.5	2.5	2.6	2.7	2.8	2.9
Leather Products	0.8	0.8	0.8	0.9	0.9	0.9
Textile & Clothing	7.1	7.2	7.5	8	8.4	8.7
Chemical Fertilizer	1.9	1.8	1.9	1.9	1.9	1.9
Machinery	4.8	5.2	5.4	5.3	5.5	5.5
Petroleum products	0.8	0.8	0.8	0.9	0.9	0.9
Other Manufacturing	0.8	0.9	0.8	0.9	1.0	1.1
Sources of Growth in						
%Manufacturing	100.00	100.00	100.00	100.00	100.00	100.0
Food Manufacturing	13.15	10.3	11.73	11.9	13.42	14.7
Leather Products	5.29	3.89	4.04	4.75	4.60	4.47
Textile & Clothing	46.38	59.31	54.38	55.49	54.38	53.47
Chemical Fertilizer	8.65	6.28	6.84	6.49	6.06	5.72
Machinery	24.34	18.44	19.14	17.85	18.05	17.68
Total of 5 Products	97.82	98.2	96.12	96.48	96.51	96.03
Other Manufacturing	2.18	1.8	3.88	3.52	3.49	3.97

 Table 3.4: Manufacturing Growth Projection for SFYP by subsectors of manufacturing

Source: Adapted and Calculated from the data of BBS and SFYP Projections

document emphasized that main driver of manufacturing growth will be the export markets, although growing domestic demand from higher income generation will also provide impetus to it. Import substitution also needs serious attention in view of uncertainty of global market and scope of savings of foreign exchange for the goods which are possible to produce inside the country rather than to import. High manufacturing growth during the plan will hinge upon continuation and improvement on the superb export performance of the past two decades. The key is to produce competitive products in which Bangladesh has comparative advantage and formulate strategies to expand export markets. Export sector is planned to grow by 16% over the plan period which is the same rate as it was in the pre-global crisis period and is projected to grow to the level of 22% of GDP at the end of the period (Table-3.5).
Data show that value of exports has been growing at the rate of 14% over the last five years. Much of the export growth was driven by the knitwear and woven garments sectors, which gained further momentum in the post MFA era. Exports from Bangladesh suffered during the global economic crisis although Bangladesh fared better than many global competitors. Exports have strongly rebounded in

Components:	FY10	FY11	FY12	FY13	FY14	FY15	Average
Exports in Billion Dollars	16.2	22.4	25.7	29.4	33.8	38.8	30
(annual Percent Change)	4.2	38	14.5	14.5	14.5	15	19.4
Export as %GDP	16.2	20.3	21.2	22.1	23	23.9	22.1
Import in Billion Dollars	21.4	31	35.4	40.3	46.1	52.8	41.1
(annual Percent Change)	5.4	45	14	14	14.5	14.5	20.4
Import as % GDP	21.3	28.2	29.2	30.3	31.4	32.5	30.3
Current Account Balance in Billion							
Dollars	3.7	-0.3	-0.2	-0.2	-0.5	-0.7	-0.4
(percent of GDP	3.7	-0.3	-0.2	-0.2	-0.3	-0.4	-0.3

Table 3.5: Export, Import and Balance of Payment Projections in theSixth Five Year Plan Period

Source: BBS, Bangladesh Bank, Ministry of Finance and SFYP

2011 due to stronger demand from both traditional markets (EU and USA) and non-traditional market for Bangladesh textile products. There has been surge in demand for jute and jute goods following years of steep decline. Manufactured exports growth has significantly positive impact on overall manufacturing growth, elasticity of manufacturing growth being 0.55 with respect to exports.

Based on the recent performance, export sector under the Plan is projected to grow by 19.4%

Per annum in US dollar terms, which is higher than usual because of the sharp increase in exports recorded in FY11 and need for acceleration of manufacturing growth induced by exports. The projection entails an increase in the share of exports in relation to GDP to rise by 7.7 percentage points to 23.9% of GDP by the end of the SFYP reflecting a leading role that export sector is envisaged to play in increasing domestic activity (Table-3.5). While clothing exports would continue to dominate the export outlook, some important non-traditional exports like footwear, other leather products and light engineering products (bicycle and electronic products), pharmaceuticals, and ship building are likely to grow at a much faster rate. Import payments are also likely to grow at a buoyant pace of 20.4% on average during the Plan period on account of an unusually strong growth in the first year of the Plan. The projected high import growth will address

critical capacity constraints in the power and other infrastructure sectors along with capital machineries and raw materials for the industrial sector expansion. It is notable that exports growth should not be allowed to remain below imports growth for a long time to avoid balance of payment constrains to equilibrium growth.

High proportion of manufactured exports to total exports to the extent of around 95%^{X1} implies the increased quality of exports (Fig.9). In absolute terms, both manufactured exports and imports were found to increase with resultant impact on manufactured trade balance to increase because of increased outstripping of exports by imports (Fig.10). Quality of total trade is on increase as evidenced by increased and high proportion of manufactured trade to total trade (fig.11). Again, proportion of manufactured exports to manufactured imports has been increasingly high over the years. As a result, proportion of manufactured trade balance to total trade has been on decline. Though proportion of primary products decreased during 2005-10, proportion of intermediate products or capital equipment or high tech products did not increase. Share of high tech products and capital equipment are stagnated at 0.2% and 0.3% respectively while share of intermediate products along with primary products has fallen considerably (Table-3.6). The result is that around 88% of export is composed of consumer goods in 2009 increased from 78% just five years back. This may not be inconsistent with the technological background of the entrepreneurs and structure of the economy biased against technology oriented production. But the positive aspect of structure of exports of Bangladesh is that the share of manufacture is 95% of total exports. and this has been steadily increasing.

One important structural change in manufacturing exports that has happened in Bangladesh is the emergence of a dynamic export-oriented readymade garments (RMG) sector (Table-3.7). The emergence and expansion of the RMG sector is the direct outcome of the global Multifibre Arrangement (MFA) regime, as well as conducive policies undertaken by the government to ensure global competitiveness of the industry. It was extremely good policy foresight that allowed the RMG industry not to be subjected to high tariffs, in terms of intermediate inputs and raw materials that have to be imported on upfront payment of duties. The RMG sector operates within a "free trade" enclave in that all imported inputs come in under a bonded system duty free. Had this not been the case, RMG exports would not have reached the heights they have reached, given the economy's import regime which is riddled with complex tariffs and other import restrictions. For the rest of exports and potential exports, getting world-priced imported inputs is a challenge. As a consequence, export Narayan Chandra Nath : Manufacturing Sector of Bangladesh-Growth, Structure

Indicators	2005	2006	2007	2008	2009
Exports in value in 000					
Dollars	9331406	11696539	13142843	16773287	17074095
A. Share of					
Manufacture in %	92.5	92.7	90.6	94.9	95.2
Share of consumer					
goods (%)	78.1	75.3	75.8	86.4	88.8
Share of intermediates					
(%)	13.4	17.1	13	7.8	5.9
Share of capital					
(equipment) (%)	0.7	0.6	1.7	0.5	0.3
Share of high-tech					
products (%)	0.3	0.2	0.1	0.2	0.2
B. Share of Primary					
Goods	7.5	7.3	9.4	5.1	4.8
Total	100	100	100	100	100

Table 3.6: Structure of Exports by Stages of Processing

Source: Adapted and Calculated from the Data of UNCTAD

diversification has not made much headway. It is notable that only five products including woven and knit garments constitute 87% of the total exports (Table-3.8). Manufacturing industries such as jute goods, leather and frozen foods, engineering products and pharmaceuticals have strong export potentials for driving the industry towards higher growth. But, unlike RMG, these industries are yet to become major contributors to the economy as can be seen from their export performance (Table 3.8). Thus export concentration in a single product group – RMG infuses an element of vulnerability to our export performance.

For many decades prior to the emergence of RMG exports, jute and jute goods dominated the Export sector making upto 70 percent of exports until 1981. By 1990, however, RMG exports had overtaken Bangladesh's traditional exports and, by the close of the 1990s, *export concentration* emerged afresh, with RMG exports reaching a share of 77 percent. While Bangladesh's export growth for the last decade and a half could be characterized as robust, a sudden decline in demand for Bangladeshi garments would send shock waves throughout the economy. Such a prospect can be avoided through the creation of a diversified export basket. To promote export diversification, the Plan document mentioned that Government's export policy has adopted a strategy of giving the highest priority to several emerging exports that demonstrate high potential (as follows).

- 1) Agro-products and agro-processing products;
- 2) Light engineering products (including auto-parts and bicycles);
- 3) Footwear and leather products;
- 4) Pharmaceutical products;
- 5) Software and ICT products;
- 6) Home textile;
- 7) Ocean-going Ship Building Industries; and
- 8) Toiletry Products.

In order to increase the export potential as well as to diversify the export base, the Sixth Five Year Plan is set to seek further reduction of trade barriers within the context of the World Trade Organization (WTO) framework as well as seek more active cooperation with neighbours. Bangladesh will actively participate in concerned international and regional/sub-regional forums aimed at increasing Bangladesh's access to international export markets, easing and eventually eliminating any non-trade barriers to Bangladeshi exports, encourage investments, increase trade in services including energy, promote regional connectivity, and establish best possible economic relations with all strategic countries.

4. Manufacturing Employment as New conduit of Job creation and rebalancing of employment

With labour force growing by 3.2% per year and the very high level of underemployment (around 24%) in the farm and informal services sectors, creation of new jobs in the productive formal sectors of the economy, particularly

	FY1981	FY1991	FY2001	FY2010
Exports as % GDP	4.1	6.8	10.6	17.2
Manufacturing share of Total	65.5	78.9	92.1	90.9
Exports in %				
Manufactured Exports as % of	2.69	5.36	9.76	15.63
GDP				
RMG (% of Total Exports)	0.1	38.9	56.1	77.1
RMG as % to Manufactured	0.07	30.7	51.67	70.1
exports				
Non-RMG as %Manufactured	99.93	69.3	48.33	29.9
Exports				

 Table 3.7: Dynamics of the Structure of Bangladesh Exports and structure of

 Manufactured exports, FY1981-FY2010

Source: Adapted from Bangladesh Bureau of Statistics (BBS) and BPC,

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Fig. 9: Change of Manufacturing Share of Exports during 1981-2010

Fig.10: Trend of Manufactured Exports, Imports and Trade balance



Fig.11: % Mfg trade to total trade, % mfg exports to mfg imports and mfg trade balance to Total Trade



% mfg trade to Total Trade, %Mfg exports to Mfg Imports and %mfg trade balance to total trade

manufacturing will be a major challenge for Bangladesh. Historically, over the period 1974-2010, there has been structural shift of employment from agriculture to service activities with industry slowly treading to absorb some surplus labour force. Bangladesh Bureau of Statistics (BBS) survey of farm and nonfarm employment shows that in the four year period through 2010, the share of the agricultural sector in the labor force dropped by 4.6 percentage points during the 4-year period to 43.7% by 2010. There has been reduction of employment share of agriculture by 4.6%, employment in services increased by 3% and the rest 1.6% increased in industry: manufacturing employment by 0.7% and construction by 0.9% during 2006-10 (Table 4.1). Major absorbers of manufacturing employment are textile, garments. agro-processing, food and beverage and light engineering. These five products constitute 97.3% of total manufacturing employment in Bangladesh (Table-4.2).

Accelerated growth in manufacturing, construction and services sectors projected under the Plan should help the creation of 10.4 million new jobs in these sectors of the economy, which should be sufficient to absorb all new entrants in the job market (about 9.2 million) and also enable a sizable numbers of workers to find jobs away from the agriculture sector (about 1.2 million). The changing pattern of projected employment is shown in Table 4.3. Manufacturing employment growth rate has been projected at 9.73% on average which is near to reality (Table-4.3).

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		-			-	
Categories	FY06	FY07	FY08	FY09	FY10	Average of 2006-10
As% of Total						
Woven Garments	38.8	38.2	36.6	38.1	37	37.77
Knit Wear	36.3	37.4	39.2	41.4	40	38.86
Raw Jute	1.4	1.2	1.2	0.8	1.2	1.16
Jute Goods	3.4	2.6	2.3	1.7	3.3	2.66
Leather	2.4	2.2	2	1.1	1.4	1.82
Frozen Food	4.4	4.2	3.8	2.9	2.7	3.6
Others	13.3	14.2	14.9	14	14.4	14.16
Total Exports	100	100	100	100	100	100
Annual Growth						
Woven Garments	13.3	14.1	10.9	14.5	1.6	10.88
Knitwear	35.3	19.3	21.5	16.2	0.8	18.62
Raw Jute	54.2	-0.7	12.3	-21.9	52.3	19.24
Jute Goods	17.6	-11	-0.8	-15.3	100	18.10
Leather	16.3	3.5	6.9	-37.8	27.8	3.34
Frozen	9	12.2	3.7	-15	-2	1.58
Total	21.6	15.7	15.8	10.1	4.2	13.48

Table 3.8: Recent Export Performance During 2006-10

Source: Calculated from the Data of EPB

Manufacturing elasticity of employment is around 0.32 which need to be increased considerably with increased employment intensive and higher productive manufacturing in the country. It is understandable that investment and capacity utilization of manufacturing sector need to be geared upwards to maintain the manufacturing employment growth target under the plan.

Employment expansion is going to be a major challenge, but with the accelerated growth in the nonfarm sectors projected under the Plan, the economy should be able to create the targeted level of new jobs in the nonfarm sector. With the continued migration of labor force away from the agriculture sector and into more productive sectors of the economy, the problem of underemployment will diminish significantly. The recent migration of workers from the agriculture sector has already started to push up agricultural wages leading to higher income levels for the rural workers. If the Plan succeeds in its employment strategy and achievement of the projections as envisaged, there will be a visible reduction in the level of underemployment and a steady increase in real wages of the workers,

which are essential for successful poverty reduction strategy in the country. Productivity enhancement, employment expansion and raising real wages are the three intertwined critical elements of employment strategy that will act simultaneously for addressing the growth acceleration and poverty reduction.

The employment challenge in Bangladesh is not just to create any job but to create high income jobs in the formal sectors. At present, as the plan document recognized, some 78 percent of the labor force is engaged in low-income, low productivity jobs in the informal sectors. The employment target for the Sixth Plan is to create adequate number of high productivity, high income jobs not only for new entrants but also to allow a substantial transfer of labor from the informal sector to the formal sector of manufacturing and services.

Much of the high productivity, high income jobs will need to come from a labour intensive manufacturing sector based on domestic and export markets and from organized services. Both large and small enterprises need to contribute to this growth.

5. Factor Intensities, Scale of Operation and Productivities in Manufacturing

5.1 Factor Intensities and Productivities in organized manufacturing

As observed from historical data of Bangladesh economy, capital intensiveness has increased considerably from 0.012 to 0.273 Million constant Taka during

FY06	FY10	
Sectors (In Millions) Agriculture	22.9	22.3
Manufacturing	5.3	6.0
Construction Service Total	1.5 17.8 47.4	2.0 19.7 51.0
Employment by Sector (In Percen	t)	
Agriculture	48.3	43.7
Manufacturing	11.2	11.9
Construction	3.0	3.9
Services	37.5	40.5

Table 4.1: Shift in the Structure of Employment, 2005/6-10

Source: Adapted and Calculated from the data of Bangladesh Bureau of Statistics, Labor Force Surveys

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	Manufacturing Employment in 2010	
Industries	(Thousand)	% Employment
Leather Footwear Industry	16.6	0.13
Food and Beverage	1340.1	10.27
Light Engineering	718.4	5.51
Pharmaceuticals	69	0.53
RMG	3100	23.76
Jute Textiles	18.2	0.14
Shipbuilding	250	1.92
Textile Industry	6007.7	46.04
Agro-processing	1529.1	11.72
Total Nine Products	13049.1	100.00

 Table 4.2: Employment Status of major nine Manufacturing

 Sectors (95% of Total Mfg Value Added)

Source: Adapted from BBS and BPC

1972-2005. Size of capital and value added per enterprise also increased by nearly 10 times from 1970s to 2000s. Similarly, labour productivity has also increased manifold. Capital productivity has not increased, rather decreased. Interestingly, value added to output ratio remained steady at near about 25% with slight increase in 2006-10 (Table-5.1). Manufacturing sector of Bangladesh experienced increased capital labour ratio, increased scale of operation in terms of capital, value added and gross output per enterprise, increased factor productivities (labour productivity and Capital Productivity) and value added output ratio. There has been increased profitability from 36.3% to 45.6% during 1998-2006 (Table-5.2). Productivity with respect to wage level was 338.5% in 2006, increased from 239.7% in 1998. Output capital ratio was 2.07 in 2006 which declined from 2.62 in 2000.Growth of fixed assets and value added was spectacularly high of 175% and 202% in 2006 as compared to 14% and 17% respectively in 2000. Growth of total productivity was 2.39% in 2006 increased from 1.73 % in 2000. Thus growth of factors-capital and labour and value added and positive total productivity growth and stable profitability have contributed to manufacturing growth of manufacturing in Bangladesh.

5.2 State of subsectoral factor intensities and Productivities and their Link in manufacturing

One of the critical observations on link between capital intensiveness and labour productivity is that (as revealed from the data analysis of SMEF Survey of Six Sectors) ^{XII}, different sectors show different pattern of capital intensiveness and labour

							Average	
Sector	FY10	FY11	FY12	FY 13	FY14	FY15	SFYP	
Agriculture	23.2	23	22.8	22.6	22.3	22	22.54	
Manufacturing	6.1	6.7	7.4	8	8.7	9.7	8.1	
Construction	1.9	2.1	2.3	2.5	2.7	2.9	2.5	
Services	21.2	22.3	23.2	24.6	25.8	27	24.58	
Total Employment % Agricultural	52.4	54.1	55.8	57.7	59.5	61.6	57.74	
Employment % Manufacturing	44.27	42.51	40.86	39.17	37.48	35.71	39.04 15.46	
Employment to total Employment % Construction	11.64	12.79	14.12	15.27	16.6	18.51		
Employment	3.63	4.01	4.39	4.77	5.15	5.53	4.77	
% Service	40.46	42.56	44.27	46.95	49.24	51.53	46.91	
Employment Growth	4	3.2	3.1	3.3	3.2	3.2	3.2	
Agri employment		0.86	0.87	0.88	1 2 2	1 25	1.06	
Mfg employment		-0.80	-0.87	-0.00	-1.55	-1.55	-1.00	
Growth		9.84	10.45	8.11	8.75	11.49	9.73	
Construction Employment Growth Service Employment		10.53	9.52	8.70	8.00	7.41	8.83	
Growth		5.19	4.04	6.03	4.88	4.65	4.96	
% Agri Contribution		-	-	-8.29	-13.20	-	-10.67	
% Mfg Contribution		35.73	44.38	29.89	38.54	47.76	39.26	
% Construction		11.98	12.57	10.01	10.94	9.21	10.94	
% Service Contribution		62.70	53.74	68.39	63.72	53.82	60.47	
% Total Growth		100.0	100.0	100.00	100.00	100.0	100.00	
Additional								
Million			1.7	1.7	1.8	1.9	1.78	
Unemployment Rate	4	4.1	4	4	4	3.7	3.96	
Labor Force	54.5	56.2	58	59.9	61.8	63.7	59.92	
Growth of Labour		3.12	3.2	3.28	3.17	3.07	3.17	

Table 4.3: Projected Pattern of Employment in the SFYP (Millions)

Source: Adapted and calculated from the data of SFYP Projections, BPC, GOB

productivity by size of manufacturing (Table-5.2). Highest capital labour ratio belongs to small enterprise followed by large enterprise. Lowest capital labour ratio is in micro enterprise followed by medium enterprise. In general, relatively more labour intensive subsectors are agro-processing, light engineering and electrical & electronics. Capital labour ratio is the lowest in electrical and electronics sub-sector followed by light

			-				
		Average value				Output in	
		added	Capital			Constant	Labour
	Percent of Value	constant	labour ratio	Capital	Average	Million Taka per	Productivit
Economi	of value	taka par	Taka par	Droducti	Assats por	antorpriso	y in Minion Taka par
ECOHOIIII	added to	taka per	така рег	Producti	Assets per	enterprise	raka per
c Phases	output	enterprise	person	vity	enterprise	1996	Person
1972-80	25.349	1.696	0.012	0.824	1.879	6.145	0.012
1981-85	25.360	3.033	0.035	0.741	4.185	11.953	0.025
1986-90	25.289	2.463	0.064	0.590	4.058	9.522	0.037
1991-95	25.417	2.734	0.089	0.618	4.405	10.703	0.056
1996-00	23.780	5.916	0.114	0.631	9.353	24.762	0.072
2001-05	26.680	16.173	0.273	0.619	25.592	57.247	0.172

Table 5.1: Capital Labour Ratio and Productivities

Source: Estimated from the data of BBS

Table 5.2: Longitudinal Status of Indicators of Profitability and Total Productivity
growth of Organised Mfg sector of Bangladesh during 1998-2006

Indicators of Performance	1997-98	1999-2000	2001-2002	2005-06
Profitability in %	36.28	39.83	35.85	45.63
Productivity wage ratio in %	239.63	265.42	254.18	338.53
Output capital Ratio		2.62	2.68	2.07
Growth of Fixed Assets	2 (0	13.55	37.87	175.24
Growth of Labour		7.39	9.12	35.26
Growth of Value Added		16.56	27.49	201.58
Growth of Total Productivity		1.73	1.43	2.39

Source: Calculated from the data of CMI Statistics of several years.

engineering and agro-processing. Highest capital labour ratio is found in plastics followed by designer goods and leather and footwear. In light engineering, lowest capital labour ratio is in medium size followed by micro enterprise. In electrical and electronics, lowest capital labour ratio is in large enterprise followed by small enterprise. In agro-processing, lowest capital labour ratio is in micro enterprise followed by small enterprise. In plastics, lowest capital labour ratio is in micro enterprise followed by medium enterprise. In leather and footwear, smallest capital labour ratio is in large enterprise followed by small enterprise.

5.3 Status of Nine Major Manufacturing Subsectors

As visible from the data analysis, only nine products constitute 95% of Gross Value Added. Among them, four products- textile, RMG, food processing and agro processing absorb 91% of employment and constitute 92% Gross value added and 94% exports (Table-5.4). All these belong to low technology products. Thus manufacturing sector is narrowly concentrated in low technology based products. Jute textiles, garments, light engineering, leather and footwear and food and beverage have relatively higher export intensiveness. Emerging export industries are pharmaceuticals and textiles. Among the labour intensive industries, light engineering, textiles, food and beverage stand prominent. Labour

Firm Sizes	Agro & Food Processing	Leather & Footwear	Designer Goods	Electrical & Electronics	Plastics	Light Enginee ring	All
Capital labour							
Ratio							
Micro	53.5	283.5	63.5	38.58	229	69.97	123.0
Small	80.12	248.8	93.7	27.99	2543	75.99	511.6
Medium	160.5	289.1	284.6	30.37	458	63.12	214.3
Large	217.3	52.7	988.5	22.31	542	77.36	316.7
All	127.8	218.53	357.58	29.81	943.00	71.61	291.4
Labour							
Productivity							
Micro	830	3081.89	78.6	1635	6812	2000	2406.3
Small	967.6	3543.86	138	1076	7853	4110	2948.1
Medium	396	6045.96	164.8	457	10636	2490	3364.9
Large	784.7	3502.24	57.6	587	8501	2350	2630.4
All	744.6	4043.49	109.75	938.75	8450.50	2737.50	2837.4
Value Added to							
Output in %							
Micro	40.4	47.3	74.1	38.8	32	58.4	48.5
Small	44.3	22.6	59.4	36.8	32.4	34.8	38.4
Medium	52.2	45.3	46.8	29.6	30.4	36.7	40.2
Large	51	57	60	34.6	35	31	44.8
All	46.98	43.05	60.08	34.95	32.45	40.23	43.0

 Table 5.3: Capital Labour Ratio and Labour Productivity in Different sizes of

 Selected Manufacturing enterprises (000 Taka)

Source: Adapted and calculated from the SMEF Survey of Six Sectors, 2006.07

Note: Micro, small, medium and large enterprises are those employing 1-9, 10-49 workers, 50-99 workers and 100 and more workers respectively as per BBS Definition.

productivity is relatively higher in leather and footwear, pharmaceuticals, jute textiles, RMG and agro-processing.

5.4. Regression Results regarding link between factor intensities and productivities

We have made two types regression exercises; one for time series and another for cross sectional relations taking 225 samples. Time series regression exercise shows significant positive impact of capital labour ratio and capital productivity on labour productivity which is consistent with theoretical expectation (Table-5.3). Second exercise with cross sectional data shows that while capital productivity has significant positive impact, capital labour ratio has insignificant positive impact on labour productivity (Table-5.4). Similarly, regression of profitability using cross sectional data (Table-5.5) shows that while size and capital productivity have significant positive impact on profitability, capital intensiveness in terms of capital labour ratio showed insignificant impact implying that more capital intensive firms are not necessarily more profitable ones. This means that capital intensive technology may not increase productivity always in all sectors. Thus appropriate technology choice of the sectors depending upon its characteristics would become major strategic concern for the enterprises.

6. Status of Competitive Industrial Performance of Bangladesh

6.1 Longitudinal Status of Indicators of Industrial Performance of Bangladesh (at Country Level)

Industrial capacity and manufactured export capacity (as shown in fig.12) have increased tremendously (19.3 times and 29.9 times respectively in 2006-10 as compared to 1973-78). Astoundingly, export quality in terms of percentage of manufacture as % exports has increased considerably (from 61% in 1973-78 to 95% in 2006-10). However, industrialization intensity in Bangladesh remains at a low level (18%) and has increased at a very snail pace ((1.6 times in 2006-10 as compared to 1973-78).

Dynamics of Industrial Performance of Bangladesh during 1974-2010

6.2 Status of Country's Competitive Industrial Performance by its components with respect to global level

Though over the years, industrial capacity and export capacity have increased, both the indicators remained at a very low level of 6.12% and 4.53%, respectively, as compared to global standard. The share of manufactured value added to GDP of Bangladesh remains at 88% of global level(Table-6.1). It does show that

	Employm		Gross	Exports in				Relative	
	ent in		Value	Million	%	Labour	Relative	Export	Export
	2010	%	Added in	Dollars in	Exports t	intensive	Productivity	intensiven	per
ndustries	(000)	Employment	% total	2010	total	ness	level	ess	Labour
eather and Footwear	16.6	0.13	0.8	204.1	1.3	0.16	6.15	1.63	12295.
³ ood and Beverage	1340.1	10.27	4.1	687.5	4.38	2.50	0.40	1.07	513.0
Jight Engineering	718.4	5.51	0.5	190	1.21	11.02	0.09	2.42	264.5
harmaceuticals	69	0.53	1	40.97	0.26	0.53	1.89	0.26	593.8
SMG	3100	23.76	36.7	12497	79.65	0.65	1.54	2.17	4031.3
ute Textiles	18.2	0.14	0.8	540	3.44	0.18	5.71	4.30	29670.
Shipbuilding	250	1.92		9.34	0.06				37.4
Textile Industry	6007.7	46.04	13.1	598.1	3.81	3.51	0.28	0.29	9.66
Agro-processing	1529.1	11.72	38.2	921.9	5.88	0.31	3.26	0.15	602.9
Total Nine Products	13049.1	100	95.2	15688.9	100	1.05	0.95	1.05	1202.3

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Table 5.5: Regression of First Difference of Labour Productivity in Manufacturing sector of Bangladesh

		Unstand Coeff	dardized icients	Standardized Coefficients		
Mc	del	В	Std. Error	Beta	Т	Sig.
1	(Constant)	-279.560	1403.862		199	.845
	DIFF(capital productivity)	47441.997	8199.397	.649	5.786	.000
	DIFF(Capital labour ratio)	.875	.152	.647	5.766	.000

Adjusted R Squared=0.774, F=31.4, DW=2.16

Table 5.6: Regression of First Difference of Capital Productivity

	Unstandardized Coefficients		Standardized Coefficients				
Model		В	Std. Error	Beta	Т	Sig.	_
1	(Constant)	-0.030	0.030		997	.333	3
	Difference of Lab Productivity,1	0.0000085	0.000	0.618	3.242	0.005	

Adjusted R Squared=0.35,F=10.5,DW=2.9.

Table 5.7: Regression of Profitability on Size of enterprises, Capital Labour Ratio and Capital Productivity: Subsectoral

		Co	efficients ^a					
		Unstandardized Coefficients		Standardized Coefficients				
Model		В	Std. Error	Beta	Т			
1.000000	(Constant) Enterprise Size in Output Capital Labour Ratio Capital Productivity in %	-97.429217 0.000124 0.006646 0.961327	24.284918 0.000044 0.012733 0.011373	0.032580 0.00425{ 0.970256	-4.011923 2.836473 0.521967 84.525686			
Adjusted F	Adjusted R Squared=0.987, F=5005 (0)							

volumes of both GDP and MVA are at low level as compared to the size of population. The share of Bangladesh manufacturing to World GDP increased to 0.16 in 2005 from 0.12 in 2000. The growth of manufacturing was 7.6% p.a. over the period of 2000-05, as compared to global growth of manufacturing at 2.5% p.a. Major portion of manufacturing sector belongs to low technology products

Fig.12: Dynamics of Industrial Performance of Bangladesh during 1974-2010



(79%). The level of high and medium technology manufacturing is at the level of 28.5% as compared to global level. Share of manufactured export to exports in Bangladesh should have reflected quality of exports. But Bangladesh manufactured exports are composed of low value additive and products of low technology. Share of high/medium technology exports constitutes only 3.4% of its exports and at 5.45% of global level. This may be the byproduct of low level technology- based manufacturing in the country. Bangladesh is one of the poorest performers among the countries in respect of components of competitive industrial performance index like manufacturing to GDP and share of high/medium technology products in manufacturing and exports reflecting the narrow base of manufacturing sector and manufactured exports of the country^{XIII}

7. The Constraints and Challenges of Industrialisation

The basic challenge of industrialization in Bangladesh as remarked in the Perspective Plan document comes from narrowly-based industrial sector with locational concentration and low technological level. Constraints to development of manufacturing industries are usually related to structural and policy induced barriers^{xv}. The important structural constraints emanate from the small size and poor growth of the domestic economy, declining world demand, credit constraints, low entrepreneurial base, poor infrastructural facilities, low level of

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 Table 6.1: Global Level Components of Competitive Industrial

 Performance Index^{xiv} and Status of Bangladesh

World Level Indicators of Performance	2000	2001	2002	2003	2004	2005	Bangla desh in 2005	Level of Bangladesh to global in %
MVA per Capita (\$)	967.5	939	943	966	1005	1031	63.1	6.12
Manufactured Exports Per Capita (\$)	824	784	818	935	1120	1235	56	4.53
Share of MVA in GDP in %	18.2	17.7	17.6	17.	18	18	16	88.89
% Mfg Exports to Total	82.2	82.4	83	82	82.3	81	94	116.05
Share of Medium/high Technology MVA(%)	54.8	53.3	55.4	61. 4	70.4	75	21.3	28.48
Share of Medium/high technology Mfg in Export(%)	64.3	64	64	63. 4	63.2	62	3.4	5.45

Source: Adapted and calculated from UNIDO Data Base, 2009

technology and low productivity and poor quality of labour. Among the policyinduced constraints, regulatory barriers stand prominent. We have investigated the main reasons of the failure of privatized units^{XV1}. The enterprises identified the main factor of failure as technological problem and problem of not having access to necessary bank credit Thus here technological problem and fund problem are intertwined. Independent of technological problem, fund problem has been the second most import cause of enterprise failure. Capital is the main strength to move. The enterprises can't do BMRE, nor they can set up new machinery or replace scrapped machinery without capital. They require working capital for stocking raw materials for smooth running of the enterprise throughout the year. In the competitive market, they have to make credit sale, keep inventory for good price in future. All these could be done if they could manage good amount of capital. Lack of capital in many cases throws the enterprise into critical crisis including its failure. Next serious reason of enterprise failure is the problem of electricity supply. Because of frequent power failure, the capacity remains heavily underutilized and the production becomes unpredictable frustrating both the workers and the entrepreneur. Next important cause of failure is related to marketing problem which arises because of high cost of production not commensurate with sale price, tough competition from imports and domestic manufacturers, high cost of raw materials and mismatch between increased cost of imported raw materials and government determined price of the product. All these contribute to lowering profit margin and eventually failure of the enterprise. Negative trade unionism has been a reason for failure not only of public enterprises but also private enterprises. Another important reason for failure is

long term closure of factory affecting the productive capacity of the machines and raising the cost of BMRE and maintenance cost .Among the other reasons, looting and extortion by miscreants, high interest on loan, natural disaster, high cost of transport, low level of management, lack of policy support from the government stood prominent causing failure of the privatized units. Mozammel Hug (1996)^{XVII} in a survey on Leather manufacturing has identified several constraints. In his study, all the respondents complained about adverse effects of load shedding on cost of production. They talked of other poor infrastructural facilities including shortages of gas supplies, badly maintained and congested roads, and the poor communication systems. Of the various non-physical infrastructural facilities,, absence of adequate and properly trained technical personnel was found to have affected the development of manufacturing activities. Along with infrastructural bottlenecks and poor governance he has mentioned about the market failure and government failure for technology capacity building involving technology learning through human capital development and R&D. Besides, there is a weakness in making investment so as to maximize linkage effects. Bhattacharya(1996)^{XVIII} in his study found that in 48.5% cases, unsatisfactory shipment facilities acted as major constraint for development of export oriented apparel sector. Sixth Five Year Plan document pinpointed such constraints as weak investment climate, power shortages, antiexport bias of the trade regime, difficulty having access to suitable land for manufacturing, inadequate credit access, low labour productivity and low level of technology, gender bias against the female workers, weak research and development. Among the constraint of government regulations and enforcements, problems of complex taxation rules, red tape, delay in getting verdict of the court are considered important. The Plan document also pinpoints the problem of slow privatization process due to incomplete and complicated procedures^{X1X}. In the SMEF survey of six sectors, 2006/07, some general constraints and sector specific constraints were revealed. The major general constraints are related to inability to market products, inability to maintain product quality, poor fixed and working capital, lack of skilled technicians and workers, poor management skill of entrepreneurs, lack of information, non-tariff barriers in world trade, poor enabling environment, insufficient infrastructure support, widespread tariff anomalies, low level of technology, low productivity, lack of Research and Development and low level of education of entrepreneurs.

We have identified similar problems of manufacturing and consider the emerging challenges of the sector as follows:

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- i. Problem of protecting domestic industries from import pressure;
- ii. Facing tougher competition in the global market amidst more protected trade regimes and greater stimulus package in the buying countries and competing exporting countries;
- iii. Coping with the crisis in power and energy sectors
- iv. Coping with hazards of climate change
- v. Strengthening competitiveness by increasing productivity and reducing cost of production including trade transaction costs and reducing time of delivery and and increasing quality of the products
- vi. Ensuring easier market access in buying countries;
- vii. Increasing quality of public spending and implementation of Annual
- viii. Liquidity problem in money market and capital market;
- ix. Productive use of remittance money to translate them into productive investment;
- x. Diversification of markets and products for exports; and
- xi. Compliance with WTO rules .

In addition. the SFYP document identified many constraints faced by ten selected medium and large industries (RMG, non-RMG textiles, Jute industry, footwear and leather, light engineering, agro-processing, ship building, pharmaceuticals, steel and engineering, electronics and chemical industries), which are considered of great importance for the economy in terms of their contribution to industrial value added, export promotion, creation of employment and growth of national income.

The challenges faced by RMG, as Plan document pointed out, are related to linkage industries expansion for speedy supply, ensuring social compliance and bettering working conditions, shift to quality improvement and product upgradation and product and market diversification and improvement of infrastructure and logistic support services and development of skilled manpower. Besides, improving labour management relation arising out of low wages of the workers, political instability, unreliability of energy supply and low unit export price for the products amidst increased cost of production are important challenges.

Challenges faced by jute industry are related to :inadequate quality seeds and rotting facilities, high cost of production due to excess labour in public enterprises, power shortage, lack of aggressive marketing drive for entering into overseas market and lack of legal compulsion to use jute in the domestic economy.

The key challenge faced by footwear industry is lack of comprehensive policy. Problems that beset the industry include: shortage of adequately trained and skilled human resources, lack of training institute and inadequate facilities for skill development, absence of supportive linkage industries, low awareness of international buyers about the capability to produce quality shoes in this country, inadequate facilities for design and product development, low awareness of international quality standards such as eco-labeling and packaging, inadequate working capital finance, lack of access to local market making the enterprises vulnerable to the perils of stock lot or order cancellations and political instability.

The challenges faced by light engineering are among others, occasional price hike of raw-materials, high duties on quality raw-materials needed for specialized products, lack of education and training of the entrepreneurs for high quality products, low level R&D works, inadequate access to working capital, limited financial support for technological upgradation, lack of metal and heat testing facility, lack of skilled manpower for quality products, power cuts, poor marketing techniques and poor designing ability.

The key challenges of pharmaceutical industry are related to poor image of the country affecting the image of enterprises, lack of promotion capacity of Bangladesh Missions abroad, negligence of new drug policy to deal with export of medicine, poor quality of government documents. limit of samples for sending to the imports, lack of local testing facilities, cumbersome documentation procedure for certain export destinations, limitation in foreign currency transactions to maintain marketing offices abroad.

The key challenges of agro-processing industry are related to improving the quality of inputs, products, technology, business services and environment, increasing production efficiency and product quality to better meet consumer and export demands, limited number of products, lack of information about compliance requirements for export items at various destinations, lack of adequate information on food safety and agricultural food standards, weak supply chains and lack of information about Bangladeshi agro-processing produce in countries where Bangladesh is not currently exporting to.

The ship building industry is reported to face challenges of import dependence of almost all raw materials, ranging from engines to steel, electronics, furnishings, cabling and piping, low standard of local component and service suppliers and low volume of local produce of components (10%), facing higher interest and service charges from local banks, poor quality public utilities, problem of red tape, especially in exporting and importing, shortage of qualified mid

management professionals and skilled workers and high cost of doing business. Main factors to act as barriers to ship building industry are related to nonavailability of large tracts of land adjacent to deep water, lack of significant funding, lack of skilled manpower and requirement of certification of meeting international standard.

8. Strategic Options for Manufacturing Development of Bangladesh

8.1 Review of Broad Strategies and key areas of intervention needed for development of Manufacturing sector

On strategic front of manufacturing development, our views may be expressed as follows.

i. Strategy on Market Orientation

In the context of uncertainty, instability and complexity of global market and in the situation of large emerging domestic market, strategy of import substitution and addressing domestic market need more attention. Such approach is important also for domestic capability building as a precedence for effective global integration and export expansion. One can't ignore the fact that one dollar saved is one dollar earned. There is a need for emphasis on complementarity and balance between export expansion, domestic demand expansion and import substitution for broad based and sustainable development of manufacturing. The country need to revisit strategies to pursue parallel growth mechanism of giving due weights to both import substitution and domestic demand expansion along with export expansion for accelerating growth of manufacturing in the framework of a broad based industrial development as done by East Asia in their earlier stage of development.

ii. Strategy on Size of Manufacturing

There is a concern regarding which size need to be emphasized for development of manufacturing. Since there is a huge number of micro and small enterprises and large number of people engaged there in, the country can not by pass the problems of micro and small enterprises for their productivity enhancement oriented to poverty alleviation at least in the short and medium term. In the efforts making, micro, small, medium and large enterprises need to be well demarcated for separate treatment to each considering their individual characteristics and problems across the sectors . There has been concern for choice between large and small size of enterprising for investment strategy by the government. Results of data analysis suggest that though in the seventies, proportion of both sizes was near to each other, divergence grew in course of time to such an extent that now only thirty percent of manufacturing is from small sized manufacturing. Contribution of large and small size to growth of manufacturing remains 70% and 30% respectively. Both large and small size categories deserve attention for accelerating manufacturing growth in the economy. Small manufacturing units need special attention because of more flexibility and labour absorptive capacity. Initiatives will be needed to strengthen small and medium scale enterprises as well as to identify large scale manufacturing industries that can compete in global market and compete with imports in the domestic market.

iii. Strategy on Factor Intensity for Manufacturing Development

There is a need to work out appropriate factor intensities and technology for each individual sector to strengthen its competitiveness and to duly participate in the value chain of international production networks. Though labour intensiveness as a strategy need to be emphasized in Bangladesh because of abundance of cheap labour in the economy, capital and skill intensiveness may be needed in specific sectors to improve competitiveness in the global market. Appropriateness of factor intensity depends upon the characteristics of individual sector and demand of the competitive market at a given market situation and in consideration of perspectives of development, particularly of manufacturing. Manufacturing sector in Bangladesh need to pursue dynamic shift of path from lower technology to higher technology level in raising productivity and competitive edge of the sector and its enterprises. Simultaneously, an appropriate mix of labour intensive and capital intensive technology need to be worked out in consonance with quality requirements of demand of different markets-domestic and exports.

iv. Price and Non-Price Competitiveness with gradual shift to the latter

While price competitiveness was the main focus of Bangladesh over the years, time has come to emphasise non-price competitiveness along with price competitiveness to consolidate the global market and to increase credibility of the country for quality supply at a relatively lower price. Lowering price is possible through lowering cost of production by means of enhancement of productivity. Besides, reduction of trade transaction cost and cost of doing business help in strengthening price competitiveness.

Non-price competitiveness requires improved quality and design of products and ensuring timely delivery, required volume and quality of the delivery and ensuring safety and health. The problem of competitiveness arises from two related weaknesses specific to Bangladesh, first is the lack of a competitive supply capability of the country in industrial goods traded and the second is related to the serious technological and quality problems faced in having access to international markets. Products have to comply with a mix of technical standards and health, safety and environmental requirements set by importing countries. Bangladesh as exporting country need to comply with the requirements of the technical barriers to trade (TBT) and sanitary and phyto-sanitary measures (SPS) agreements under WTO, and must have the ability both to produce according to the standards and technical regulations set by the client countries, and prove conformity. Standards and conformity procedures often effectively restrict market entry, even in the absence of tariffs and quota restrictions.

Here the country need to make three broad categories of interventions: (i) capacity building in the area of standards, metrology, testing and accreditation to overcome TBT/SPS constraints, (ii) developing measures for enhancing the competitiveness of the enterprises through quality and productivity improvements, and (iii) development of supportive mechanisms to assist the enterprises in accessing global subcontracting and supply chains and networks in appropriate product categories.

v. Shift from Low Wage to Productivity Enhancement

There is a crucial need for shift from low wage strategy to productivity enhancement and higher value additive strategy for long term approach in increasing global competitiveness of manufacturing and for industrial development of Bangladesh.

vi. Shift from low technology to higher technology level and thrust on R&D efforts

There is a need to shift from low technology and low value added product to higher technology and higher value added product; technology for industrial development need to be a core component of strategy of industrial development. Strategies for sub-sectoral development are yet to be streamlined and to be linked with technology upgradation. Human resource development, and there is a crying need for greater investment on Research and Development to use opportunities of globalization.

vii. Diversification of industrial Structure by Products and Locations

Trajectory of diversification of industrial structure for long term growth to achieve the visionary goal of perspective plan and Industrial Policy 2010 need to be translated into detailed action plan and realized with proactive government support and intervention. There should be parallel encouragement of diversification among existing product categories and exploring and developing new products and markets with emphasis on aggressive marketing and branding. Product development and diversification initiatives should be continuous process with appropriate policies, institutional arrangement and development of skilled manpower.

viii. Accessing Global Trade Opportunities

There are enough opportunities for using the country's surplus to increase its competitiveness in the global trade. Strong efforts will be needed to find out areas where Bangladesh has relative competitive advantage and can make a successful entry into the global market. This will call for trade policy reforms to reduce the bias against exports by lowering trade protection arising from quantitative restrictions, tariff rates and supplementary duties and streamlining legal and regulatory framework and simplification of procedures and laws.

ix. Addressing the Problems of Sick and Privatized units

There should be more proactive measures to deal with the problems of privatized units and sick units which require to be addressed case by case to salvage huge productive resources through proactive government intervention.

x. Facilitating role of government and Public-Private Partnership

Government should duly play its facilitating role in making enabling environment for increased private investment in areas of dynamic comparative advantage. Stronger positive Government action is necessary for facilitating private investment and streamlining public private partnership. There should be clear cut modus operandi for strengthening private-public partnership in the development of manufacturing in the country.

xi. Thrust Sectors

Number of thrust sectors need to be smaller and more focused. There is a need for putting in place policy support and promotional initiatives to realize emerging opportunities in new sectors identified as thrust and potential sectors.

xii. FDI related Strategy

FDI need to be encouraged to have access to technology, global capital and frontier know how and to have access to global market opportunities.

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xiii. Industrial Finance

There is a need for revisiting long term industrial finance through DFIs or commercial banks and deepening the capital market for raising equity for industrial development.

8.2. Key areas of Desirable Intervention

Key areas of desirable interventions relate to

- i. Access to reliable power and energy supply,
- ii. Raising technology level and Productivity and Product Development through increased Investment and efforts in Research and Development
- iii. Assistance in aggressive marketing in the global arena;
- iv. Improved Infrastructural facilities and Appropriate Institutional Development;
- v. Cluster development and economic zoning and at the same time initiatives for geographical diversification of manufacturing;
- vi. Appropriate package of fiscal and monetary incentives for manufacturing sector development;
- viii. Skill Development training facilities;
- ix. Healthy Labour Management Relations;
- x. Trade Facilitation Measures and reduction of trade transaction costs;
- xi. Diversification of industrial structure for domestic and for export markets;
- xii. Exploring market potentials in different;
- xiii. Economic Cooperation with regional powers and multinationals for domestic manufacturing capacity building; and
- xiv. Trade related diagnostic study and formulation of Policy matrix and its effective execution for manufacturing development at subsectoral level.

IX. Conclusion

Manufacturing sector has a critical role in the economic transformation of Bangladesh for making break-through into backwardness of the economy by enhancing economy wide productivity and diversifying the economic activities and increasing scale economies. The share of manufacturing in the growth process has increased from 15% in the early eighties to 22.5% in 2006-10. Achieving the macroeconomic performance target of 8% growth target by 2015 and 10% growth by 2021 for achievement of Vision 2021 requires enhancement of contribution of manufacturing to GDP to 30% over the next decade.

In course of strategic structural transformation in the economy, share of manufacturing is projected to grow from 18.5% in 2010 to 22% in 2015 and 30% in 2021 as against the past experiences of manufacturing share from 10% in 70s to 17% 2006-10. Thus five year plan target of manufacturing share of 21% is though challenging, not unachievable. In order to achieve the planned target, the manufacturing sector needs to be set to perform consistently and follow an upward trend from annual growth of 6.5% in FY 2010 to 11.5% in FY 2015 with average annual growth of 10% during the plan period. Calculation shows that elasticity of manufacturing to GDP growth is around 0.78 which means that 10% manufacturing growth is a must for achieving economic growth of 7.5% p.a. during the period of Sixth Five Year Plan. Projected manufacturing employment to 25 per cent of the population by 2015 from the current 17 per cent, is a bit challenging. Export elasticity of manufacturing is around 0.55 implying that for achieving targeted average manufacturing growth of 10.0 % export must grow by 18.0% p.a. on average during 2011-15, which is also challenging though not unachievable.

Size wise, share of large scale manufacturing is 12.3% and while share of small ones is only 5% of GDP. Manufacturing growth has been 7.8% p.a. during 2001-2010. Growth remains steady at nearly 8% in both the sizes. However, contribution of large size is around 70% though 93.3% manufacturing enterprises belong to micro and small enterprises providing 47% manufacturing employment. Thus size wise, Bangladesh manufacturing is characterized by dualistic pattern though concentration of fixed assets remains in the large size enterprises.

From the point of view of market orientation, main contributory factors are export expansion and domestic demand expansion with increasing contribution of the former with increased trade liberalization. Import substitution has remained negative in all the economic phases. Import substitution needs to be addressed adequately in situations of uncertainty and instability of global market. At subsectoral level, garments, pharmaceuticals, textiles, cement, food products, leather footwear, wooden furniture, re-rolling steel, wooden furniture and ceramics have high growth potentials contributing significantly to manufacturing growth. Double digit growth in manufacturing is a long cherished goal for the country but it has not yet reached the goal and the dynamic role of manufacturing is yet to be seen in the growth process. The basic problem of manufacturing is related to narrow product base, whereby only five products, namely garments and textiles, fish and sea food, leather, cement and pharmaceuticals account for over 80% manufacturing growth. Other major problems are related to. locational concentration and low level of technology. These three factors should be addressed seriously.

Accelerated growth of manufacturing will be necessary in the coming years to absorb the incremental labour force, strengthen backward and forward linkages with agriculture and services sectors, cater to the growing domestic demand for industrial goods, and take advantage of emerging opportunities in the global market. Rationalisation and restructuring of SOEs may need to be continued and privatized units require to be monitored prudently and necessary support be given to the privatized units for effective use of their resources.

Emphasis need to be given on technological sophistication and quality improvement across the subsectors of manufacturing. The Government must create enabling environment and facilitate private investment. There is a need for investment on research to explore and use opportunities of globalisation. Import substitution and domestic market orientation need to be more seriously addressed, and the export orientation strategy as a prime mover of industrial development need to be cautiously reformulated. Subsectoral strategies need to be clearer cut in consonance with the problems they face and the potentials they possess, and with care to more potential subsectors. There should be massive drive for solving the power problem for encouraging investment in the manufacturing sector. Clear cut modus operandi is yet to be developed for private-public partnership in manufacturing. There is a felt need for more investment in research and development, infrastructure, technological capacity building, trade related diagnostic study, detailed policy matrix for industrial development and appropriate institutional development for implementing policies and strategies.

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Energy Shocks and the Real Business Cycle Model in Bangladesh

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Abstract Energy shocks are often identified as a source of macroeconomic fluctuations since it affects economic growth as well as business cycle. This paper presents a Real Business Cycle (RBC) model with energy for Bangladesh economy in the spirit of Dynamic Stochastic General Equilibrium (DSGE) analysis. Calibrating and estimating the RBC model, this paper examines how the fluctuations of key economic variables such as investment, consumption and output are explained by two policy shocks namely: technology and energy price shocks. The model's ability to describe the dynamic structure of the Bangladesh economy is analysed by means of Impulse Response Functions (IRFs). The results reveal that the exogenous shock's impacts on endogenous variables are in the right direction. The main finding of this paper is that energy price shocks are not a major factor for business cycle fluctuation in Bangladesh economy which seems to be driven mainly by the productivity shock.

1. Introduction

Energy is a vital instrument for economy as it is used in some form almost in every activity. Consequently, analyzing interactions of the energy sector and the overall economy has been the subject of much interest among the researchers. The conventional wisdom is that even though energy does not make up a significant fraction of GDP, it plays a crucial role in economy since without energy nothing would be produced. The role of energy is important too on the consumer's side since many types of household products, especially durables are completely

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energy dependent (Tan, 2012). Bangladesh also considers energy as a prerequisite for her technological, societal and economic growth. In fact, given the pace of economic development in many countries and the increasing world population, the concern about energy keeps growing.

Economic theory has long struggled in attempting to explain the energymacroeconomic relationship. Researchers investigated the theoretical relationship between the use of energy and economic growth through different possible channels. In the neoclassical growth models, energy is simply considered as an intermediate input of production (Tsani, 2010). Proponents of this view focus on the possibility of technological change and substitution of other physical inputs for energy to use existing energy resources efficiently, and to generate renewable energy resources that are not subject to binding supply constraints (Solow, 1974, 1997; Stiglitz, 1974). The advocates of this theory support the 'neutrality hypotheses'. These hypotheses imply that energy would not have any negative effect on economic growth. Thus, the government can simultaneously adopt the energy conservation and economic growth policies (Bartleet and Gounder, 2010).

In contrast, the ecological economic theory states that energy consumption is a limiting factor to economic growth (Stern, 2000, 2004, 2011). They consider energy as the prime source of value because other factors of production such as labor and capital cannot perform without energy (Belloumi, 2009). The advocates of this theory highlights the so-called 'growth hypothesis'. They advise that any shock to energy supply will ultimately have an inverse effect on economic growth. Consequently, they stand against the energy conservation policies.

Apart from the extensive empirical literature examining energy-economic activity, there is another kind of literature, which has analysed the energy shocks on economic variables using Real Business Cycle (RBC) models. The case for incorporating energy shocks into the RBC models has been made credibly by McCallum (1989). The RBC theory assumes that exogenous technological shocks identified through Solow residual, are the main source of aggregate fluctuations in the economy which has often been criticized (de Miguel et al, 2003). However, one of the identifiable sources of shocks that have claimed the attention of many economists is energy price shocks which, according to some researchers, is equivalent to adverse technology shocks and thus, induce significant contractions in economic activity. In fact, using US data (1953-1984), Hall (1988, 1990) finds that a standard measure of technology, the Solow residual, systematically tends to fall whenever energy price increases.

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The common features in all of the models in the existing literature are that energy prices are taken as exogenous stochastic process and energy is considered in the production function. However, the importance of energy in the household's utility function remains unattended. As far as we have been concerned, no researcher has calibrated a RBC model with energy for Bangladesh economy to investigate the interactions between energy and overall economy.

In light of these limitations, this paper presents a standard RBC model with energy in the spirit of DSGE model for the Bangladesh economy which has become a standard tool in quantitative economics. The basic building blocks of the model are standard in the literature The main goals of this paper is about the investigation and validation of the basic RBC model with regard to its performance in terms of the common RBC properties and to see how important technology shocks are to the basic RBC model, once the model is extended to allow for energy shocks. In other words, we would like to explore to what extent movements in energy prices can help to explain business cycle fluctuations in Bangladesh. We attempt to calibrate the RBC model to explain the quantitative business cycle properties of macroeconomic variables in Bangladesh economy. Then we examine how the fluctuations of key economic variables such as investment, consumption and output are explained by the exogenous shocks. The model's ability to describe the dynamic structure of the Bangladesh economy is analysed by means of Impulse Response Functions (IRFs) which yield useful qualitative and quantitative information.

The paper is organized as follows. The model is presented in section 2; calibration and estimation of the parameters are discussed in section 3. The results are analysed in the section 4 and finally, in the last section, we present the conclusions.

2. The Model

This research attempts to construct a simple DSGE model by extending Kydland and Prescott's (1982) analysis of a RBC model to understand the business cycle fluctuations in Bangladesh caused by energy shocks in addition to productivity shocks.

Energy is explicitly modeled in the household's utility function where the representative household derives utility from the consumption of energy oriented goods, non-energy oriented goods and from their leisure. Each household's endowment of time is normalized to 1 so that leisure is equal to (1-1) where 1 represents the number of working hours.

The utility function is assumed to be perfect separable among the components. The utility function is represented by the following equations:

(1) V (c_t, 1-l_t, e_t) = U (c_t) + θ (1-l_t) + Φ (e_t)¹

Utility function exhibits the commonly assumed properties like $v_c>0$, $v_{cc}<0$,

 $\lim_{c\to 0} = \infty$ and. $\lim_{c\to\infty} = 0$ That means, additional consumption and leisure increases utility but does so at a diminishing rate.

Following Kim and Loungani (1992), the production technology of firm is described by a Cobb-Douglas production function with constant returns to scale by combining energy as an additional input along with capital and labor.

F (kt, lt, gt) = AKtalt^Y gt1- α -^Y

Where α and γ is the fraction of aggregate output that goes to the capital input and labor input respectively, and $1-\alpha-\gamma$ is the fraction that goes to the energy input. That means, all the economic agents rely on energy either for household's consumption or for production of various goods. Additionally, energy price is modeled as an exogenous random process in addition to productivity shock.

The law of motion of the stochastic productivity shock A is assumed to be: $A_t = \rho A_{t-1} + u_t$; $u_t \sim (0, \mu^2)$ as like Tan (2012).

As in a neoclassical growth model, capital stock depreciates at the rate δ and households invest a fraction of income in capital stock in each period. So, capital accumulates according to law of motion:

(2) $K_{t+1} = (1 - \delta)K_t + I_t$ with $0 < \delta < 1$

The price of energy used in the economy, p, is exogenously given and follows AR (1) process:

 $P_t = \Psi P_{t-1} + v_t$ where v_t is i.i.d with standard deviation π and zero mean. As energy is consumed both by the consumers and the producers in this model, the economy's resource constraint for period t is given by:

(3) $Y_t = C_t + I_t + P_t(e_t + g_t)$

The objective of the social planner is to maximize the utility of the representative households subject to feasibility, i.e.

Max V
$$\sum_{i=0}^{\infty} \beta^{i} [U(\mathbf{c}) + \theta(1-1) + \phi(\mathbf{e})]$$
s.t.

¹ We use the functional form assumptions that U (c_t)=lnC_t, $\theta(1-l_t) = \varpi \ln(1-l_t)$ and ω (c_t)= $\zeta \ln c_t$

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$$Y_t = C_t + I_t + P_t(e_t + g_t)$$
$$K_{t+1} = (1 - \delta)K_t + I_t$$
$$Y_t = AK_t^{\alpha}I_t^{\Box} g_t^{1-\alpha^{-\Box}}$$

 $A_t = \rho A_{t\text{-}1} + u_t \text{ and } P_t = \Psi P_{t\text{-}1} + v_t$

The Lagrangian constrained for the household can be defined as follows:

 $L = \sum_{i=0}^{\infty} \beta^{i} [U(c) + \theta(1-1) + \phi(c)] + \lambda t [AKt\alpha lt\gamma gt1 - \alpha - \gamma + (1-\delta)Kt - Ct - Pt(et + gt)]$

Where λt is the Lagrange multiplier and the function is maximized with respect to ct, kt+1,et, lt, gt and λt .

The subsequent Euler equations are as follows: β (Ct/Ct+1) [A α Kt+1 α -1lt+1 γ gt+11- α - γ + (1- δ)] =1

 ω Ct/1-lt=AKta γ lt^{γ} gt1- α ^{- γ}

The Euler equation interprets that the marginal disutility of reducing consumption in current period should be equal to the discounted utility from future consumption. The Euler equation in relation to leisure interprets that the disutility from additional working hour should be compensated by an increase in utility due to producing extra output.

Additionally, after eliminating the Lagrange multiplier the equilibrium condition is described by the following system of difference equations that fully characterizes the cyclical properties of the model economies.

(4)
$$\omega C_t / e_t = P_t$$

AKtalt $\gamma(1-\alpha-\gamma)$ gt- $(\alpha+\gamma) = Pt$

Ct +Kt+1 + Pt(et+gt) = $(1-\delta)$ Kt + AKtalta^Y gt1- α -^Y

 $Yt = AKtalt^{Y} gt1 - \alpha - Y$

 $At = \rho At - 1 + ut$

 $P_t = \Psi P_{t-1} + v_t$

3. Calibration

In this section, we discuss the calibration of different parameters of the model. There are 10 parameters in total with 6 structural and 4 shock related parameters in our model. Structural parameters can be categorized into utility and production

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function related parameters. It is important to have a good understanding of rationale behind picking different parameter values in order to properly evaluate the fit of the model. Let us briefly describe our procedure for selecting parameter values listed in table 1:

Table 1: Parameters of the Economy					
â, discount factor	0.88				
á, capital share of output in the production function	0.31				
ã, labor share of output in the production function	0.65				
ä, depreciation rate	0.025				
ñ, persistence coefficient of productivity shock	0.95				
ø, persistence coefficient of energy shock	0.95				
ó, standard error of productivity shock	0.01				
ô, standard error of productivity shock	0.01				
ù, Household's preference on leisure	2.01				
æ Household's pr eference on energy consumption	0.33				

We have generally adopted three approaches in terms of calibrating parameters for our RBC model. Some of the parameters, for which estimation remained an issue due to lack of reliable and detailed data, are picked from existing RBC/DSGE literature for developing and developed countries (Choudhary and Pasha, 2013). Due to data constraints, all parameters in our model are calibrated for annual frequency. Some of the parameter values are chosen by using steady state conditions of the model. Rest of the parameter values are directly considered from Bangladesh Bureau of Statistics (BBS).

First of all, we discuss parameters related to production. Following Rahman and Yusuf (2010), we set alpha equals to 0.31 which implies capital's share of national income in Bangladesh is slightly less than a third. According to Bangladesh Household Income and Expenditure Survey (2010), the labor share of output in Bangladesh varies from 0.65 to 0.70. We decided to use a value of 0.65 to make it consistent with the Cobb-Douglas production function used in our model.

Depreciation rate is usually very low in the developing countries. So, depreciation rate delta has been set at 0.025 implying that the overall depreciation rate in Bangladesh is 2.5 percent annually. This value is fairly realistic form the perspective of the developing countries. The capital output ratio in Bangladesh is borrowed from Rahman and Rahman (2002) who estimated that the trends in capital output ration in Bangladesh over the period of 1980/81 to 2000/01 is equal to 2.

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Now, we discuss parameters related to household utility. Given, alpha, delta and capital-output ratio, the values of discount factor beta is obtained from equations 6 and 11 calculated in steady state

$$\beta = 1/\alpha(y/k) + 1 - \delta$$

Our estimated value 0.88 is compatible with the other existing literature considered the value of discount factor, beta for annual frequency for developing countries. Due to unavailability of the data of working hours, we set l=0.33 with an assumption that people work about one-third of their time endowment which is widely accepted value for RBC/DSGE analysis.

Omega reflects household's preference for leisure and its value is chosen from equations 7 and 8 once again calculated in the steady state which yields b=2.01. The value of 2.01 falls within the range as estimated in other existing literature reported by DiCecio and Nelson (2007).

$$\omega = \gamma (1-1) y/c.1$$

Similarly, the household's preference for energy consumption, Zeta, is also calculated from equation 8 which yields a value 0.33.

 $\zeta = p.e/c$

Finally, following King, Plosser and Rebelo (1988), we set the persistence of our two exogenous shocks equals to 0.95 and standard deviation of the shocks equals to 0.01.

4. Results

After calibration, to evaluate the performance of the model, we will compare steady state ratios from the models with their empirical counterpart. Furthermore, second order moments (such as standard deviation, contemporaneous correlation with output etc.) obtained from simulations will also be evaluated from our models and their fit with the actual data.

The model shows that the relevant capital output ratio is equal to 1.92 which is fairly close to the actual data of 2 as explained in the previous section. Another important ratio of our model is the consumption-output ratio. The model does a good job at matching the model generated ratio of 0.68 to the actual consumption output ratio of 0.65-0.70 as showed in data. However, our model undershoots the value of investment output ratio (in percentage form) by a large extent. The model generated result 4.8 percent is far away from the average long run investment output ratio of 20 percent.

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We would also like to verify the ability of the model to reproduce other empirical regularities of the Bangladesh business cycle. In order to do so, we proceed to the stochastic simulation of the model with the parameters obtained in the calibration section, where the source of fluctuations comes from the technology shock and energy price shock. The following table reports a selection of second moment properties for the HP filtered series corresponding to the Bangladesh data and the simulated economy respectively. In other words, we would like to evaluate our model's performance by comparing the results with data. For this purpose, the following table reports some selected historical moments from data and their counterparts predicted by our models.

	Data ¹	RBC Model				
Statistics	Estimate	Model 1 Productivity and Energy Shocks	Model 2 Productivity Shocks	Model 3 Energy Shocks		
Standard	Deviation	netrol (group 'ro) bandit	Ang a biodeatori	Onooks		
у	0.005488	0.004570	0.004584	0.000181		
i	0.003155	0.002239	0.002244	0.000087		
с	0.007593	0.001737	0.001744	0.000070		
e	0.002546	0.000929	0.000575	0.000729		
Standard I	Deviation Rel	lative to Output				
i	0.57	0.49	0.49	0.48		
c	1.38	0.38	0.38	0.38		
e	0.46	0.20	0.12	4.02		
Correlation	n with Outpu	ıt(Y)				
i	0.9965	0.9631	0.9631	0.9634		
c	0.9938	0.9654	0.9655	0.9688		
e	0 9967	0 5547	0.0655	0.0007		

Our model performs well to capture the actual volatility of output and investment when we consider both the productivity and energy shocks together and just the productivity shocks. However, considering only energy shocks we observe a very gloomy picture. Energy price shocks can account for only 3.29 percent of output volatility whereas productivity shocks can account for almost 83 .52 percent of output volatility in our model. Investment also follows more or less the same pattern like output. However, the model does a poor job in replicating the

variation of consumption of energy and non-energy goods. The situation is more

actual growth rates.
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severe in the consumption of non-energy goods when we just consider energy shocks. So, energy price shock is a less important source of aggregate fluctuations in Bangladesh economy.

Additionally, our RBC model shows that the series are not strongly persistent and robust in the sense of having a large first order autocorrelation coefficient and matching the historical data. The highest persistent series is capital which is 0.74 whereas the autocorrelation of the remaining series are typically in the neighborhood of 0.45 compared to their empirical counterpart of a range around 0.82. The policy and transition function reveals that the exogenous shock's impacts on endogenous variables are in the right direction. Lastly, the model captures the fact that most of the series are quite pro-cyclical with output.

After considering the steady state ratios and second order moments for our model with their empirical counterparts, finally we take a brief look at the impulse response functions generated in response to the productivity and energy price shocks.

Transmission Mechanisms of Energy Price Shocks:

In this section, we describe the dynamic mechanism in which energy price shock is propagated. The shock is equal in size to the standard deviation of the normalized price. Figure 2 shows the response of the different endogenous variables of the model in presence of such shock.

When there is an increase in relative energy price, both the amount of energy consumption and the amount of energy used in the production decreases by 8 percent and 1.5 percent respectively. Because of the complementarity effects, the reduction in the use of energy in production decreases the amount of capital by one percent and the amount of labor by 0.4 percent approximately. The decrease in the productive inputs is translated into an output decrease of 2 percent which would imply a negative correlation between output and energy prices. Finally, consumption exhibits a similar response to the output.

Transmission Mechanisms of Productivity Shocks:

An increase in technology makes capital more productive in the future, since future technology is expected to be higher (as rho is close to 1), the social planner responds optimally by immediately building up the capital stock by 40 percent. As a result of a positive technology shock, investment rises the most (60 percent) followed by output (50 percent). Investment reverts back to original pre-shock

levels just after a few periods compared to other endogenous variables. The behavior of impulse response functions for the endogenous variables are very similar to their response to an exogenous technology and energy shock. The only difference is their magnitude of effect and the technology shocks have more strong impact on the variables than the energy shocks.

Figure 1: Relative Impulse Responses to a productivity shocks

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5. Conclusions

In the introduction to this paper we referred to McCallum's suggestion that RBC theory should explicitly model exogenous energy price changes. We made an attempt to implement this suggestion in the simplest possible way where energy is included both in the utility and production function. Energy price shock is explicitly introduced in our model in addition to the productivity shocks. The model used in this paper is based on the standard Dynamic Stochastic General Equilibrium (DSGE) analysis which is a small first step in modelling energy price shocks in a RBC framework for Bangladesh economy. The main conclusion from our paper is that energy price shocks are not a major factor form business cycle fluctuation in Bangladesh economy. In fact, our results do some support to the views of macroeconomists who downplay the impact of energy shocks on the economy. Overall, the RBC model developed in this paper does a reasonable job in order to capture the direction of the variables which occur when faced the exogenous shocks. But, the model fails to replicate the exact strength of the movements in aggregate fluctuations in Bangladesh.

However, the model is still rather stylized. It abstracts from many of the channels through which energy prices may affect the macro economy. Firstly, many of the studies that derive strong impacts of energy on real variables do so by assuming some rigidity in the response of wages and (non-energy) prices to the energy price. Secondly, it abstracts from the presence of fiscal and monetary authorities as well as market incompetitiveness.

For further research, it would be interesting to include pollution on our baseline model to do some comparative static to evaluate the dynamic effects of specific emission policy choices. We would also like to consider externality where it is assumed to enter household utility additively separable and furthermore assess the overall welfare effect of a reform. Finally, we would also intend to extend the model by explicitly modelling the energy market so that energy policy reforms and their impact on the overall economy can be accurately analysed.

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Causation Among Exports, Imports and Economic Growth in South Asian Countries: A Vector Error-correction Modeling Approach

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Abstract This research attempts to examine the causal relationships among exports, imports and economic growth for the seven economies of South Asia, namely Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka using annual time series data from 1972 to 2010. We apply multivariate time series econometric tools to investigate the relationship. For checking nonstationarity for all the variables we have used techniques of Augmented Dickey-Fuller and Phillips-Perron tests. We implement the technique of Johansen's cointegration estimation procedure using a vector autoregressive (VAR) model to examine the causal relationships among the variables. In order to show the direction of the short-run and long-run causal relationships among exports, imports and economic growth, we apply the method of Granger causality based on vector error correction model (VECM). While controlling for imports the results of these methods indicate bidirectional causality between exports and output growth in Bhutan, India, Maldives and Nepal in the short-run. There is also a short-run unidirectional causality from exports to economic growth in Pakistan and Sri Lanka, from economic growth to exports in Bangladesh. This study finds long-run equilibrium relationships among exports, imports and economic growth for Bangladesh, Bhutan, India, Maldives, Nepal and Pakistan. Results, therefore, reveal the export-led growth hypothesis to be a long-run phenomenon for all countries in the region.

Keywords: Augmented Dickey Fuller test, Phillips-Perron test, Johansen Cointegra- tion Approach, Granger Causality

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1. Introduction

The relationship between exports and economic growth has been explored in the literature. A growing body of trade and development literature has emphasized exports as a vehicle to accelerate GDP growth or economic growth. It is widely common postulate that export expansion is one of the main determinants of economic growth. It is argued that exports can help the process of economic growth through a variety of channels including, for example, efficient allocation of resources, economies of scale, comparative advantage, enhanced capacity utilization, improved productivity, and diffusion of technological knowledge and innovation, exchange of new ideas and production process. On the other hand, exports can be affected by output (Kaldor, 1967, Lancaster, 1980, and Krugman, 1984). Many growth related literatures argue that output growth has a positive impact on productivity growth and improved productivity or reduced unit cost is expected to facilitate exports. It could be interesting, from a policy making point of view, to study the causal nexus of exports and output in South Asian Countries.

However, imports and economic growth are closely related in many countries, as many developing countries are bound to import some commodities from industrially developed countries. Imports may have either positive or negative impact on economic growth depending upon the types of imports. If the import bundles consist of necessary food items, luxurious commodities and other unproductive ones, it may negatively affect economic growth because of pressures created on balance of payments. But if import bundles consist of industrial machinery, low cost production process, latest production system, new technology etc., it will positively affect economic growth in the long-run, although it may slower economic growth in the short-run. Imports can also help to get comparative advantage and specialization. If there is a difference between internal relative process on autarky and those that can be obtained internationally, then a country can improve its well-being by specializing in and producing the relatively less expensive domestic goods and importing goods that are relatively more expensive.

The nexus between exports and economic growth is analyzed by Rahmaddi and Ichihashi (2011) in Indonesia during the period 1771 to 2008. This paper shows that exports and economic growth exhibit bidirectional causal relationship (Taban and Aktar, 2007; Shirazi and Manap, 2005; Ismail and Harjito, 2003; Lee and Huang, 2002). Safdari et al. (2011) analyze the causal relationship between exports and economic growth for a panel of thirteen Asian developing countries over the period 1988 to 2008. Empirical analyses presented a unidirectional causality from economic growth to export (Srivastava and Kapoor, 2007).

Al-Mamun and Nath (2007) examine the link between exports and economic growth in Bangladesh using quarterly data for a period from 1976 to 2003. They find that there is a long-run unidirectional causality from exports to growth in Bangladesh.

Shirazi and Manap (2004) reinvestigate export-led growth hypothesis for Pakistan. The empirical results strongly support a long-run relationship among imports, exports and output growth. The paper finds feedback effect between import and output growth, and unidirectional causality from export to output growth. Nevertheless, this paper does not find any significant causality between import and export growth. Asafu-Adjaye and Chakraborty (1999) also find that the causality runs indirectly from exports to imports and then real output.

Awokuse (2008) found evidence supporting the import-led growth effect in some South American countries. Similar findings are to be found in Thangavelu and Rajaguru (2004) for India, Indonesia, Malaysia, Philippines, Singapore and Taiwan and in Awokuse (2007) for Poland. On the other hand, in Awokuse (2007) the causality is found to run in the opposite direction for the Czech Republic. Finally, and to the best of our knowledge, there is apparently no empirical evidence on the role played by imports on economic growth in China.

Humpage (2000) studies whether imports hinder or help economic growth in U.S.A. The results show that imports do not reduce or slow economic growth. By fostering specialization and the transfer of technology, they lead directly to faster economic growth and improved standards of living. Unfortunately, the benefits of specialization and technological progress do not accrue equally to everyone, and may worsen the economic lot of some people. No one, however, seriously scorns economic advancements (Li, et al. 2003; Kotan and Sayg?l?, 1999).

2. An Overview of Exports, Imports and Real GDP in South Asian Countries

Exports and imports are major components of international trade. An overview of exports, imports and GDP is discussed in this section for South Asian countries and these are depicted in Figure 1-7. Foreign trade is of vital importance to the economic growth of Bangladesh. The country's import needs are large and in order to finance those imports, the government, since liberation, has been trying to enhance foreign exchange earnings through planned and increased exports. At present, Bangladesh's major export items are ready-made garments, raw jute, jute goods, tea, leather and frozen fish. The main import items of Bangladesh are machinery and transport equipment, petroleum and petroleum products, textile yarns fabrics and made up articles and related products, chemicals, iron and steel, and fertilizer.



Figure 1: Trend of Exports, Imports and Real GDP in Bangladesh (million US\$)

Bhutan's economy is based on agriculture, forestry, tourism and the sale of hydroelectric power to India. The nation's biggest partners are India and Bangladesh, and to an extent, Italy. Export commodities of Bhutan are electricity (to India), ferrosilicon, cement, calcium carbide, copper wire, manganese, vegetable oil. After 2000, Bhutan's total volume and value of import increased somewhat faster than in the previous decades.

Figure 2: Trend of Exports, Imports and Real GDP in Bhutan (million US\$)



India is one of the growing economies of the world. India is now aggressively pushing for a more liberal global trade regime, especially in services. Some of India's main export items are computer software, car, cotton, textiles, jute goods, tea, coffee, cocoa products, rice, wheat, pickles, mango pulp, juices, jams, preserved vegetables and RMGs. Import items of India include crude oil, precious stones, machinery, fertilizer, iron and steel, and chemicals. Although India has

steadily opened up its economy, its tariffs continue to be high when compared with other countries and its investment norms are still restrictive. This leads us to see India as a "rapid globalizer" while at the same time as a "highly protectionist" economy.



Figure 3: Trend of Exports, Imports and Real GDP in India (million US\$)

In recent times, Maldives has experienced economic fluctuations. For Maldives' trade, tourism is the primary industry, accounting for close to 30% of the country's GDP. After tourism, fish is still an important industry for Maldives. After fishing, agriculture and manufacturing industries play a very important role in the economy of Maldives. The share of industry in Maldives is some 18% of the GDP. The main export bundle of Maldives includes agricultural food and beverage, arts, crafts and gifts, building and electrical, business products, business services, chemicals and plastics, clothing and fashion, health and beauty, home products, industrial products, metals and minerals, electronics, sports, toys and games, and transportation. Imports involve a variety of commodities such as ships, foods, petroleum products, clothing, textiles, capital goods, and intermediate goods.

Nepal is one of the world's poorest countries. Agriculture remains a major source of livelihood, and tourism is also important. The growing divergence between export and import caused trade deficit to increase. In 2005, the trade deficit was US\$ 1211 million and in 2009 it increased to US \$2720 million; in 2010 the trade deficit was around US \$3000 million. Nepal's main export bundle includes carpets, clothing, leather goods, jute goods, grain, herbs and tea.

Foreign trade is important to the economy of Pakistan because of the country's need to import a variety of products. In the early 1980s, incentives were provided to industrialists to increase manufactured exports. The major export items of



Figure 4: Exports, Imports and Real GDP in Maldives (million US\$)

Figure 5: Exports, Imports and Real GDP in Nepal (million US\$)



Pakistan are textile goods (garments, bed linen, cotton cloths, and yarn), rice, leather goods, sports goods, chemicals, manufactures, carpets and rugs. Import items of Pakistan include petroleum, petroleum products, machinery, plastics, transportation equipment, edible oils, paper and paperboard, iron and steel and tea.

Sri Lanka is a lower-middle income developing nation. The main economic sectors of Sri Lanka are tourism, tea export, apparel, textile, rice production and other agricultural products. In addition to these economic sectors, overseas employment contributes highly in foreign exchange. The major export items of Sri Lanka are textiles and apparel, tea and spices, diamonds, emeralds, rubies, coconut products, rubber manufactures and fish. The main import items of Sri Lanka are textile, fabrics, mineral products, foodstuffs, machinery and



Figure 6: Exports, Imports and Real GDP in Pakistan (million US\$)

transportation equipment, petroleum products, motor vehicles, synthetic yarn, fabrics, wheat, fertilizer, chemicals, and building materials.





From the trend of exports and imports one understand the nature of the change in the foreign trade for the seven economies of South Asia. The export earnings of Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, Sri Lanka were, respectively, US\$ 356.84, US\$ 13.32, US\$2,899.02, US\$ 35.21, US\$ 57.97, US\$ 1096.08, US\$ 570.18 million in 1972. In 1980 the export earnings increased to US\$ 995.27, US\$ 18.51, US\$ 11415.8, US\$ 65.20, US\$ 224.58, US\$ 2958.19, US\$ 1296.67 million, respectively. In 2000 the export earnings of these countries were US\$ 6588.07, US\$ 130.47, US\$ 60879.8, US\$ 558.12, US\$ 1279.28, US\$ 9940.17, US\$ 6371.58 million, respectively. The total export earnings of these

countries in 2010 stood at US\$ 18546.46, US\$ 810.63, US\$ 319288.2, US\$ 948.50, US\$ 2021.32, US\$ 22552.97 and US\$ 9370.01 million, respectively.

The total import payments of Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka were US\$ 863.53, US\$ 369.02, US\$ 2669.7, US\$ 41.01, US\$ 81.08, US\$ 1580.91, US\$ 610.38 million, respectively, in 1972. In 1980 import payments stood at US\$ 3239.43, US\$ 51.14, US\$ 17190.10, US\$ 87.10, US\$ 364.50, US\$ 5709.19, US\$ 2205.44 million, respectively. In 2000 these amounted to US\$ 9060.86, US\$ 219.59, US\$ 65125.73, US\$ 447.13, US\$ 1781.59, US\$ 10862.33, US\$ 8103.47 million, respectively. The import payments of these countries were US\$ 24944.61, US\$ 653.53, US\$ 429748.9, US\$ 1284.31, US\$ 4997.23, US\$ 33171.28, US\$ 13129.1 million, respectively, in 2010.

In 1972, the GDPs of Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka were US\$ 23788.67, US\$ 66.32, US\$ 118449.32, US\$ 114.63, US\$ 1763.70, US\$ 17510.44, US\$ 4272.87 million, respectively. In 2000, the GDPs of the above countries were US\$ 91988.98, US\$ 427.81, US\$ 460182.03, US\$ 624.34, US\$ 5494.25, US\$ 73952.37, US\$ 16330.81 million, respectively. In 2010, the GDPs of Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka stood at US\$ 161619.75, US\$ 961.37, US\$ 971486.07, US\$ 1072.37, US\$ 8036.78, US\$ 116334.73, US\$ 27029.19 million, respectively.

3. Methodology

The empirical methodology of this paper consists of three steps, checking the time series properties of the variables, that is, testing for a unit root, testing for the long-run cointegration relationship among the variables and estimating Granger causality based on vector error-correction model (VECM) in a multivariate framework. These steps are briefly explained below.

3.1 Unit Root Test

Checking of stationarity properties of the variables is the first step of the methodology. If the variables are nonstationary, stationarity can be achieved by differencing them. The number of differencing required to make the variables stationary is called order of integration. We use the Augmented Dickey Fuller (ADF) and Phillips-Perron test to examine whether the variables are stationary or not. The ADF test is estimated by the following regression:

$$\Delta Y_t = \beta_l + \beta_{2t} + \delta Y_{t-l} + \Sigma \alpha_t \Delta Y_{t-l} + u_t \tag{1}$$

where $\Delta \mathbf{Y}$ is the first difference of Y series, β_I is a constant term, t is a trend variable, m is the number of lags which are included to allow for serial correlation in the residuals and u_t is the residual term. A test for nonstationarity of the series, Y_t , amounts to a t-test of $\delta=0$. The alternative hypothesis of stationary requires that ? be significantly negative.

If the absolute value of the computed *t*-statistics for δ exceeds the absolute critical value, then the null hypothesis, that the Y_t series is not stationary, must be rejected against its alternative hypothesis. If, on the other hand, it is less than the critical value, it is concluded that the Y_t series is nonstationary.

Phillips-Perron (1988) test (PP) is also applied to test nonstationarity. The ADF test take cares of possible serial correlation in the error terms by adding the lagged difference terms of the regressand. Phillips and Perron (PP) use nonparametric statistical methods to take care of the serial correlation in the error terms without adding lagged difference terms. The test detects the presence of a unit root in a series, say Y_t , by estimating the regression as follows:

$$\Delta Y_t = \alpha + \rho Y_{t-1} + u_t \tag{2}$$

$$\Delta Y_t = \alpha + \beta t + \rho Y_{t-1} + u_t \tag{3}$$

where the second equation includes a trend variable. The PP test is the *t* value associated with the estimated coefficient of ρ . The series is stationary if ρ is negative and significant. The test is performed for all the variables where both the original series and the differences of the series are tested for stationarity.

3.2 Johansen's multivariate Cointegration Approach

The second step is to test for long-run relationship among the variables. We apply the Johansen's multivariate cointegration procedure to assess the long-run relationship. We formulate the Vector Autoregressive (VAR) model following Johansen as follows:

$$y_t = \mu + \sum_{k=1}^p \prod_k y_{t-k} + \varepsilon_t \tag{4}$$

where y_t is an $(n \ x \ l)$ column vector of $n \ I(l)$ variables, Π_k is a coefficient matrix, μ presents a $(n \ x \ l)$ vector of constants, p denotes the lag length, and ε_t is a disturbance term independently and identically distributed with zero mean and constant variance. Equation (4) can also be expressed in first difference form as:

$$\Delta y_t = \mu + \eta y_{t-1} + \sum_{k=1}^{p-1} \Gamma_k y_{t-k} + \varepsilon_t \tag{5}$$

where Δ is the first difference operator and *I* is a n × n identity matrix, $\eta = \sum_{k=1}^{n} \Pi_k - I$

 $\Gamma_k = -\sum_{j=k+1}^{p} \Pi_j$ and The rank of matrix Π determines the number of cointegration vectors which is equal to the number of independent number of cointegrations. If the rank of Π equals r and r < n, then there exists r cointegrating relationships in the model. The number of cointegrating relations can be tested with two statistics, namely trace and maximum eigenvalue. The trace test statistic for the null hypothesis that there are at most r distinct cointegrating vectors is:

$$\lambda_{trace} = T \sum_{i=r+1}^{p} \ln(1 - \lambda_i)$$
(6)

where $\lambda_{r+1}...\lambda_p$ are *p*-*r* smallest estimated eigenvalues. The likelihood ratio test statistic for the null hypothesis of *r* cointegrating vectors against the alternative of *r*+1 cointegrating vectors is the maximum eigenvalue test and is given by:

$$\lambda_{max} = T \ln(1 - \lambda_{r+1}) \tag{7}$$

2.3 Granger Causality

The notion of cointegration provides the basis for modeling both the short-run and the long-run relationships simultaneously. If it is found that the variables are cointegrated, then according to Granger representation theorem (Engle and Granger 1987), the relationship among exports, imports, remittances and economic growth can be expressed as the vector error correction mechanism in a multivariate framework. This is given below:

$$\Delta y = \alpha_{11} + \alpha_y v_{t-i} + \sum_{i=1}^k \delta_{11,i} \Delta y_{t-i} + \sum_{i=1}^k \delta_{12,i} x_{t-i} + \sum_{i=1}^k \delta_{13,i} m_{t-i} + \varepsilon_1$$
(8)

$$\Delta x = \alpha_{21} + \alpha_x v_{t-i} + \sum_{i=1}^k \delta_{21,i} \Delta y_{t-i} + \sum_{i=i}^k \delta_{22,i} x_{t-i} + \sum_{i=1}^k \delta_{23,i} m_{t-i} + \varepsilon_2$$
(9)

$$\Delta m = \alpha_{31} + \alpha_m v_{t-i} + \sum_{i=1}^k \delta_{31,i} \Delta y_{t-i} + \sum_{i=i}^k \delta_{32,i} x_{t-i} + \sum_{i=1}^k \delta_{33,i} m_{t-i} + \varepsilon_3$$
(10)

This equation system constitutes VAR in first differences, which have included error correction terms and allows examining the short-run dynamics of the long-run relationship among the variables. The coefficient of the error correction term must be seen as correcting towards equilibrium subspace, i.e., how adjustment is taking place in the short-run to maintain stable equilibrium long-run relationship among the variables. The coefficients of the lagged values of the variables show whether the independent variables cause the corresponding dependent variable (Ramos, 2001).

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2.4. Data

This study is completely based on secondary data. Annual data on real GDP, exports and imports are used for this study. These data are collected from World Bank's website and converted into million US\$. We also consult publications like SAARC Statistical Year Book, Economic Trend, International Financial Statistics, and World Development Report.

3. Discussion of Econometric Results

3.1. Results of Unit Root

In order to investigate the stationarity properties of the variables (real GDP, exports and imports) we run the regression analysis with an intercept term with time trend for testing the presence of a unit root. Table 1 shows the results of unit root based on Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests. Results show that most of the series are nonstationary at level forms with trend, but stationary at first difference. For Bangladesh, GDP is stationary at level with trend at 1% level of significance, which is again stationary at first difference form.

For India, the export and GDP series are stationary but import series are nonstationary at level form, these reject the null hypothesis of nonstationarity at their first differences in case of ADF test. Output, on the other side, is also stationary at level form and also is stationary at first difference form in case of PP test. For Sri Lanka, all but GDP are nonstationary at their level forms and stationary at first differences in both case of ADF and PP test at 10% level of significance. Besides these variables, all the variables are nonstationary at level forms but stationary at first difference forms.

3.2 Results of Johansen Multivariate Cointegration

If time series turn out to be nonstationary in their levels, it is possible that stochastic trends are common across series leading to stationary combinations of the levels. This is known as cointegration. Johansen's multivariate cointegration procedure based on Vector Autoregression (VAR) provides maximum eigenvalue and trace statistics which indicate the cointegration status among the variables and the number of cointegration vector.

According to Table 2, both Trace and Maximum Eigenvalue test indicate the rejection of the null hypothesis that there is no cointegrating relationship at 1 percent level of significance for Bangladesh. This indicates the existence of one cointegrating relationships among the variables in the series for Bangladesh. In case of Bhutan, Nepal and Sri Lanka, both Trace and Maximum Eigenvalue test

Table 1: Results of Augmented Dickey-Fuller and Phillips-Perron Test for Unit Roots

	Variables	Augmented Dickey-Fuller		Phillips-Perron		
		Level	First Difference	Level	First Difference	
Bangladesh	Exports	2.597572	-4.297700***	2.353297	-4.388177***	
	Imports	1.467019	-4.945741***	1.417691	-4.951845***	
	GDP	3.005879	-3.838737**	6.843553***	-3.612408**	
_	Exports	-0.635766	-4.705500***	1.507172	-3.770073**	
ntar	Imports	-0.141624	-4.681240***	-0.323282	-4.678837***	
B	GDP	2.789996	-5.124672***	3.080215	-5.322788***	
	Exports	4.356569***	-4.125978**	1.795635	-4.171081***	
ndia	Imports	2.023144	-4.093323**	3.075343	-4.947042***	
IJ	GDP	6.497876***	-3.607269*	11.50398***	-3.335839*	
S	Exports	-0.624536	-3.717374**	-2.149649	-21.83577***	
ldive	Imports	1.741096	-3.536144**	-1.104810	-7.497945***	
Ma]	GDP	2.493392	-5.723223***	0.258889	-17.05983***	
	Exports	-1.324590	-6.315240***	-1.353560	-6.314111***	
epal	Imports	2.375991	-3.863295**	1.993950	-3.831065**	
Z	GDP	-0.278975	-6.352615***	0.030065	-7.564137***	
_	Exports	-0.606835	-4.700288***	-0.859152	-4.702840***	
cista	Imports	-4.304877***	-6.021180***	-1.395937	-6.037723***	
Pak	GDP	-0.496785	-3.946255**	-0.061256	-3.909090**	
ca	Exports	-2.439818	-6.418868***	-1.618349	-6.418868***	
Lank	Imports	-0.518811	-3.822445**	-1.906713	-9.255132***	
Sri	GDP	3.244631*	-4.022574**	3.382008*	-4.184752**	
Significance Levels		Critical Values	Critical Values	Critical Values	Critical values	
1 Pe	ercent	-4.219126	-4.226815	-4.219126	-4.226815	
5 Pe	ercent	-3.533083	-3.536601	-3.533083	-3.536601	
10 Percent		-3.198312	-3.200320	-3.198312	-3.200320	

Note: ***, ** and * denote rejection of null hypothesis of unit root at 1%, 5% and 10% level of significance. Here we consider the variables with a trend both in level and first difference form. A variable is said to be stationary, if the absolute value of the statistics is larger than the MacKinnon asymptotic critical values.

Countries	Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	5 Percent Critical Value	1 Percent Critical Value	Hypothesized No. of CE(s)	Max-Eigen Statistic	5 Percent Critical Value	1 Percent Critical Value
ss	None **	0.5489	39.979	29.68	35.65	None **	29.4542	20.97	25.52
glade	At most 1	0.2473	10.524	15.41	20.04	At most 1	10.5123	14.07	18.63
Ban	At most 2	0.0003	0.01212	3.76	6.65	At most 2	0.01212	3.76	6.65
_	None **	0.6827	54.1799	29.68	35.65	None **	42.4775	20.97	25.52
ntan	At most 1	0.2335	11.7024	15.41	20.04	At most 1	9.84027	14.07	18.63
Bŀ	At most 2	0.0491	1.8621	3.76	6.65	At most 2	1.8621	3.76	6.65
	None **	0.7818	90.8959	29.68	35.65	None **	56.3319	20.97	25.52
ndia	At most 1**	0.4994	34.5639	15.41	20.04	At most 1 ^{**}	25.6026	14.07	18.63
IJ	At most 2**	0.2151	8.96135	3.76	6.65	At most 2	8.96135	3.76	6.65
S	None *	0.3817	30.1083	29.68	35.65	None *	17.7884	20.97	25.52
ldive	At most 1	0.2381	12.3199	15.41	20.04	At most 1	10.0599	14.07	18.63
Ма	At most 2	0.0593	2.2600	3.76	6.65	At most 2	2.2600	3.76	6.65
	None **	0.6444	51.6329	29.68	35.65	None **	38.2589	20.97	25.52
epal	At most 1	0.2753	13.3741	15.41	20.04	At most 1	11.9160	14.07	18.63
Z	At most 2	0.0386	1.4580	3.76	6.65	At most 2	1.4580	3.76	6.65
c	None *	0.4888	31.8470	29.68	35.65	None *	24.8295	20.97	25.52
kista	At most 1	0.1119	7.0175	15.41	20.04	At most 1	4.3931	14.07	18.63
Pal	At most 2	0.0685	2.6244	3.76	6.65	At most 2	2.6244	3.76	6.65
а	None **	0.5446	38.0503	29.68	35.65	None **	29.1018	20.97	25.52
Lank	At most 1	0.1925	8.9485	15.41	20.04	At most 1	7.9109	14.07	18.63
Sri J	At most 2	0.0278	1.0376	3.76	6.65	At most 2	1.0376	3.76	6.65

Table 2: Results of Johansen's Cointegration Test

Note: * (**) denotes rejection of the hypothesis at the 5% (1%) level.

indicate one cointegrating relationship, that is, the value of both Trace and Maximum Eigenvalue test statistics cannot reject the null hypothesis of at most one cointegrating relationship. For India, the value of Trace statistic rejects all the null hypothesis of cointegrating relationships, indicating three cointegrating relationships. But Maximum Eigenvalue test statistic rejects all but at most one cointegrating relationships at 1 percent level of significance. Both statistics indicate the existence of one cointegrating relationship at 5 percent level of significance for Maldives and at 1 percent level of significance for Pakistan.

3.3 Results of Granger Causality

Granger causality is used to find the direction of causality when we have cointegrating relationship among the variables. Table 3 reports the results of Granger causality.

In Table 3, for example, the common factor 1.11062 of column 4 and row 2 presents the value of F statistic of either acceptance or rejection of the null hypothesis that export does not Granger cause GDP for Bangladesh. If this value is significant, the null hypothesis is rejected meaning that export Granger causes GDP. In case of Table 3, this value is not significant, that is, the null hypothesis cannot be rejected. Table 3 shows, for Bangladesh, that a unidirectional causality runs from GDP to exports and imports, from exports and imports. For Bhutan, there is a unidirectional causality from GDP and imports to exports, from exports to imports. In case of India, there is a unidirectional causality from exports and imports to exports.

There is a bidirectional causality between exports and economic growth and unidirectional causality from economic growth to imports for Maldives. For Nepal, there is a unidirectional causality from economic growth, imports to exports and from exports to imports. In case of Pakistan, a bidirectional causality runs between exports and economic growth, a unidirectional causality from economic growth and exports to imports. For Sri Lanka, a bidirectional causality exists between imports and economic growth, from exports to economic growth and from imports to exports.

3.4 Results of Granger Causality Based on VECM

Granger causality tests based on VECM can show both the short-run and long-run causality among the variables and results are provided in Table 4. Columns 2, 3, 4 and 5 of Table 4 report the χ^2 -statistic for the joint significance of the lagged independent variables while Column 6 provides the *t*-statistics for the error-correction terms.

The statistical significance of the χ^2 -statistic and F statistics, respectively, would indicate the presence of short-run and long-run causality.

Table 4 reports the results of Granger causality tests based on vector error correction mechanism (VECM) to represent both short-run and long-run causality among the variables. Columns 3, 4 and 5 report the χ^2 -statistic for the joint significance of the lagged independent variables while Column 6 provides the *t*-statistics for the error-correction terms. The statistical significance of the error-

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Countries	Dependent Variables	GDP	Exports	Imports
	GDP		1 11062	0 91413
	021		(0.34172)	(0.41108)
Bangladesh	Exports	4.44159*	(*******)	0.84858
Builgiudesh	1	(0.01985)		(0.43743)
	Imports	4.72067*	5.03113*	
	1	(0.01598)	(0.01259)	
	GDP	. ,	1.72410	0.71996
			(0.19449)	(0.49449)
Bhutan	Exports	4.44157*		9.24401**
		(0.01985)		(0.00068)
	Imports	2.71001	4.93712*	
		(0.08180)	(0.01353)	
	GDP		0.30379	1.28063
			(1.23691)	(0.29172)
India	Exports	19.7574**		10.7860**
		(2.6E-06)		(0.00026)
	Imports	18.0382**	0.00059	
		(5.7E-06)	(9.45643)	
	GDP		4.53246*	1.82507
			(0.01849)	(0.17759)
Maldives	Exports	5.29520*		0.24141
		(0.01031)		(0.78694)
	Imports	4.11094*	0.46468	
		(0.02576)	(0.63251)	
	GDP		0.67435	0.57679
			(0.51658)	(0.56743)
Nepal	Exports	5.31485*		7.81763**
		(0.01016)		(0.00172)
	Imports	0.84998	3.55571*	
	_	(0.43685)	(0.04032)	
	GDP		3.90496*	0.55792
			(0.03038)	(0.57786)
Pakistan	Exports	3.77858*		2.62701
		(0.03364)		(0.08783)
	Imports	33.0586**	6.55660**	
	~~~	(1.6E-08)	(0.00411)	
	GDP		4.31325*	6.42173**
	-		(0.02195)	(0.00452)
Sri Lanka	Exports	0.99907		3.47357*
	-	(0.37942)	< 10- · · · ·	(0.04313)
	Imports	10.4317**	6.19344**	
		(0.00033)	(0.00533)	

Table 3: Results of Granger Causality Test

**Note**: * (**) denotes rejection of the hypothesis at the 5% (1%) level. Causality tests are based on Granger causality. Figures in parentheses are p-values of the F-statistic for the joint significance of variables.

correction term and the  $\chi^2$ -statistic respectively would indicate the presence of long-run and short-run causality. In Table 4, X and M stands for exports and imports, respectively. For Bangladesh, the error correction term is significant for GDP and import equations, indicating a long-run causality from exports and imports to economic growth and economic growth and exports to imports. At the same time the error correction term is insignificant for export equation. There is, however, evidence of short-run unidirectional causality from economic growth to exports and imports.

For Bhutan, the error correction terms are significant for all three equations, namely, GDP, export and import equations, indicating the presence of long-run causality among them. In the short-run, however, there is evidence of bidirectional causality between exports and economic growth, while there is an evidence of unidirectional causality from imports to economic growth and exports. For India, the error correction term is insignificant for the import equation. There is also an evidence of short-run bidirectional causality between exports and imports and between imports and economic growth, while there is a unidirectional causality from imports.

In the case of Maldives, the error correction term is insignificant but the export and import equations are significant. There is also a short-run bidirectional causality between exports and economic growth, while unidirectional causal pattern from output to imports is found. For Nepal, there is an evidence of longrun causality among the variables as error correction terms of all the three equations are significant. There is also a short-run bidirectional causality between exports and economic growth and between imports and economic growth. The error correction term is significant in import equation for Pakistan. Short-run causal patterns have been identified from economic growth to imports. In case of Sri Lanka, error correction terms are significant for export and import equations. There is, however, short-run causality from economic growth to exports and imports. Strictly speaking, one may argue that there is an evidence of export-led growth in all South Asian countries.

### 4. Summary and Conclusion

This paper studies the relationships existing among exports, imports and economic growth and the potential impacts of the sixth five year plan on these relationships using annual time series data from 1972 to 2010. After checking nonstationarity of the variables, Johansen's approach of cointegration is applied to investigate the number of cointegrating relationships. Then we apply Granger causality test based on vector error correction model (VECM) to investigate the

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Countries	Variables	Lagged GDP	Lagged X	Lagged M	EC term
Bangladesh	GDP		0.949761	1.621792	-0.603403*
			(0.6220)	(0.4445)	[-2.08051]
	Х	5.445700*		1.450911	0.170765
		(0.0457)		(0.4841)	[ 0.66751]
	М	11.55701**	1.378277		1.171561*
		(0.0031)	(0.5020)		[ 2.56307]
Bhutan	GDP		12.78554**	24.65486**	-0.465000*
			(0.0017)	(0.0000)	[-6.18191]
	Х	23.76722**		7.647665*	-0.750672*
		(0.0000)		(0.0218)	[-5.91452]
	М	1.146644	0.278861		-0.530213*
		(0.5636)	(0.8699)		[-2.62287]
India	GDP		5.967100	9.142509*	-0.487650
			(0.0506)	(0.0103)	[-1.01669]
	Х	72.05732**		23.39744**	0.521441
		(0.0000)		(0.0000)	[ 1.79050]
	М	84.85437**	14.17582**		1.672485*
		(0.0000)	(0.0008)		[ 4.00168]
Maldives	GDP		11.20191**	2.259766	-0.091768
			(0.0037)	(0.3231)	[-1.01317]
	Х	8.756290*		5.439756	-0.745147*
		(0.0125)		(0.0659)	[-2.85721]
	М	62.71286**	2.870314		-1.527966*
		(0.0000)	(0.2381)		[-6.94630]
Nepal	GDP		32.08813**	37.77856**	-0.483095*
			(0.0000)	(0.0000)	[-8.01747]
	Х	12.53594**		3.909847	-0.228511*
		(0.0019)		(0.1416)	[-2.35923]
	М	7.018189*	1.787860		-0.517324*
		(0.0299)	(0.4090)		[-3.52629]
Pakistan	GDP		8.721879*	0.174997	-0.608403
			(0.0128)	(0.9162)	[-1.87626]
	Х	3.551997		0.586309	-0.349155
		(0.1693)		(0.7459)	[-1.80458]
	М	32.54348**	1.702508		1.614783*
~ . ~ .	~~~~	(0.0000)	(0.4269)		[ 3.83552]
Srı Lanka	GDP		3.867184	5.143207	-0.030229
		10.0/10144	(0.1446)	(0.0764)	[-0.40238]
	Х	10.86431**		0.038073	0.301150*
		(0.0044)		(0.9811)	[ 2.81238]
	М	22.08958**	0.075200		0.931952*
		(0.0000)	(0.9631)		[ 4.54605]

Table 4: Results of Granger Causality Based on Vector Error Correction Model

**Note**: * (**) denotes rejection of the hypothesis at the 5% (1%) level. Causality tests are based on Granger causality. Figures in parentheses are p-values of the F-statistic for the joint significance of variables.

direction of short-run and long-run causality among the variables.

Our findings suggest that exports, imports and GDP are cointegrated for the countries concerned, implying a long-run relationship amongst all these variables. However, the direction of short-run and long-run causality is not unidirectional. To summarize, however, the study confirms that export growth has been instrumental in accelerating economic growth in all the South Asian economies. The evidence of both short-run and long-run causality between export growth and economic growth and between import and economic growth points out that there are several ways in which exports can have a positive effect on economic growth. For example, exports can boost output growth in the short-run by allowing the utilization of excess capacity in cases where domestic demand is less than full capacity production. Imports may also have a long-run positive effect on economic growth, while the imports of industrial machinery, technology, and the latest method of production can contribute to economic growth in the longer time perspective.

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# Millennium Development Goals and Structural Stability of Child Mortality in Bangladesh

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Abstract The paper examines the stability of under-five child mortality hypothesis for Bangladesh over the period 1981 to 2013. Growth of female literacy rate and per capita gross national income has helped reduce child mortality in Bangladesh, and shows a stable relationship between them can change over time. The Millennium Development Goals target reduction of under-5 child mortality by two-thirds in Bangladesh. Using time-series data, 1981-2013 period, and applying unit root test and Chow test. Using the Chow test, the paper finds that the child mortality function does not maintain stability between pre and post-MDG period. This finding has strong implication in appropriate policy responses that need to recognize that a given level of growth is consistent with different rates of child mortality reduction to achieve basic demographic goals in Bangladesh.

*Keywords:* Child Mortality, Millennium development goal, Structural Stability

JEL Classifications: J11, 118, C62

# 1. Introduction

Bangladesh is one of the signatories among 189 countries in the Declaration of the Millennium Development Goals (MDG) by United Nations (UN). The UN General Assembly in 2000 declared the eight development goals which are

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recognized as MDG. Bangladesh is committed to achieve the goals by 2015 and is working accordingly United Nations (2000). Some of the highest under-five mortality rates in Asia and the Pacific are in the South and South-West Asian subregions. Bangladesh, Bhutan, India, Nepal and Pakistan account for 37 per cent of the entire population of Asia and the Pacific. They have an average under-five mortality rate of between 76 and 103 deaths per 1,000 live births. Nevertheless, Bangladesh, Bhutan and Nepal have made important progress in the last decade towards achieving Goal 4. They have achieved levels which are half of their 1990 baseline benchmarks for under-five mortality.

One of the eight targets is to reduce under-5 mortality by two-thirds by the year 2015, relative to its level in 1990. This requires an annual rate of decline of about 4.3 per cent per annum. Near five million children across the Asia-Pacific region still dies every year before reaching the age of five. This represents half of all under-five global deaths by ESCAP, UNDP and ADB, 2005; UNICEF 2005(a). However, achievement of Goal 4 remains elusive for many countries in the region. There are wide variations in status and progress with regard to Goal 4 across the Asia-Pacific region. The pace of child mortality reduction in East Asia and the Pacific is slowing (World Bank, 2006b).

Tandon (2005) found most of the Asian developing member countries not 'on track' to achieve the required 4.3 percent reduction per year. Based on an estimated income elasticity of 0.7 for child mortality from cross-country data, he concluded that per capita income growth of 6% would be needed to achieve 'on track' 4.3% reduction in child mortality. For 'off-track' countries, the required growth rate would be higher than 6% per capita. Simulations based on the multivariate model suggest that the under-five mortality in Bangladesh could decline substantially – by more than 50% – over the period through 2015 (World Bank, 2005).

Kapoor (2009) found that the increase in female literacy and labor force participation considerably reduces child mortality at the district level. Mustafa and Odimegwu (2008) have found that social and economic empowerment of women should be encouraged to achieve the MDG on child mortality. Caldwell et al. (2000), Debpuur et al. (2005), Mondal et al. (2009), Hosseinpoor et al. (2005), Madise and Diamond (1995) have found a significant relationship between various socioeconomic factors, demographic factors and infant-child mortality by analyzing various countries' survey and census data. They found that gross domestic product, female education, and other factors explained practically all variations in child mortality across countries.

A recent study conducted by Kundu et al. (2013) found a single cointegrating equation showing a long-run stable relationship between child mortality and the explanatory variables in the model. They also found that the achieved MDGs have a significant impact on the reduced under-five child mortality in Bangladesh, and convergence of the short-run dynamics towards the long-run equilibrium, but sustainable level of child mortality is expected to be an important prerequisite for future generations of Bangladesh.

Given these stylized facts and despite the limitations in our analysis, it is important to determine the exogenous effect of socio-economic and demographic policies on under-five child mortality in Bangladesh. Therefore, empirically, it is interesting to examine whether there is any structural change in the child mortality function between the pre-MDG and the post-MDG period. This is important for prediction and econometric inference in formulating demographic policy. Testing for parameter stability of the child mortality function is only a few of the newly developed econometric techniques.

Regressing child mortality, however, on female literacy and gross national income involving time series data, may not establish a stable relationship implying that the values of the parameters of the model do not remain the same through the entire time period. This instability i.e., structural instability may result from external forces, structural shocks, seasonality, stochastic parameter variation or due to the internal policy changes by the domestic government by Rios and Carvalho (1997). Bangladesh has undergone an economic reform process over the last decades. MDG is one of the major agenda in this reform process, which led to a diverse socio-economic and demographic pattern. The test finds that there is a structural break in the considered time series data on child mortality, female literacy and per capita gross national income in the year 2000. Therefore the data have been divided into two sub sample periods from 1981-2000 and 2001-2013.

The specific objective of this paper is to estimate and test the stability of underfive child mortality function using the Chow Test (1960) approach. The remainder of this paper is organized as follows. Section II discusses the impact of economic growth on child mortality in Bangladesh. Section III describes the econometric methodology used for the present study as well as the data. Section IV outlines the analytical framework. Section V examines and discusses the analysis of results to the time series properties of the variables. Finally, summary and conclusions are presented in Section VI.

# 2. The Impact of Economic Growth on Child Mortality in Bangladesh

Bangladesh has achieved remarkable progress in reducing under-five mortality rate in the last decade. The under five mortality decreased significantly from 133 to 94 per 1000 live births between 1989 and 1999. The reduction in under-five mortality rate from 2000 to 2003, compared to the earlier period, was not satisfactory. During 2003-2006 the under-five mortality rate came down from 88 to 65 at a momentous rate of 4.3 percent per year. Given this situation, the under-five mortality rate will have to be reduced at the rate of only 2.6 percent per year to attain the MDG target level, which is 50 per 1000 live births, in 2015. Therefore, Bangladesh is on track towards meeting the under-five mortality MDG target (BDHS, 2007).

Among these goals, Goal: 4 "Reduce Child Mortality" that comprises the following indicators to be achieved by the stipulated timeframe of UN Declaration, in case of reducing child mortality the statistical base year would be 1990 and the respective countries have to achieve the target of reducing by two-third by 2015. This is also shown in *Table-1*: which summarizes the MDG target and indicators, benchmark and the latest information on the achievement of health related MDGs in Bangladesh.

Global Goal, Target and Indicator			Bangladesh Target, Benchmark and Current Situation		
Goal	Target	Indicator	Target (Year)	Bench- mark (Year)	Achievement (Reference)
Goal 4: Reduce	Target 5: Reduce by	<5 year mortality rate/ 1,000 live	48.0	144.0	67.00 (MICS 2009)
child mortality	two thirds the mortality rate	births Infant mortality rate/ 1,000 live	(2015)	(1990)	53.84 (SVRS 2008)
			31.3	94.0	45.00 (MICS 2009)
	among children	birth	(2015)	(1990)	41.26 (SVRS 2008)
	under-five	1 year old children immunized against		52.0	82.8 (BECES 2009)
		measles (%)		(1991)	83.1 (BDHS

Table 1 : The MDG Targets and Indicators

*Source:* Authors' compilation, based on BDHS 2007 (Bangladesh Demographic and Health Survey 2007) by Bangladesh Bureau of Statistics.

The share of female literacy rate as total literacy rate has dramatically increased from 17% in 1981 to 64% in 2013 (BBS, 2013). Like many developing countries Bangladesh achieved her target of MDGs, showing how in a growing economy increased female literacy and gross national income affect child mortality under the changing economic policy regimes. Using data from Bangladesh Health and Demographic Survey (BDHS, 2000), it can by proved that urban-rural residence, education of father and mother, preceding birth interval, family size, toilet facility, delivery place and antenatal care are the major determinants of child mortality in Bangladesh.

The empirical results suggest that factors explaining the under-five mortality in Bangladesh have been a very successful family planning program even in the absence of strong economic growth and improving socioeconomic conditions (UNDP, 2005). In that case, Bangladesh has to achieve a target of minimum of 4% of MDG per year. Real annual GDP per capita growth of 4% (or annual growth of household consumption expenditure per capita of 2.7%) would be associated with a reduction in under-five mortality of 8 deaths per 1,000 live births. Together, the four interventions are associated with a reduction of 52 deaths per 1,000 live births in the under-five mortality rate – bringing that rate below the MDG level (46 deaths per 1,000 live births).

# 3. Econometric Model and Data

# 3.1 Empirical Methodology

We have used child mortality model specified by *Chandan Mukherjee et al.* (1998) to estimate the under-five child mortality function for Bangladesh.

In general, the empirical estimation of under-five child mortality model is for the *long-run*:

$$CM_t = \alpha_0 FLR_t^{\beta_1} PGNI_t^{\beta_2} e^{\mu_t}$$
(1)

To test empirically, ordinary least square (OLS) regression is applied to log-linear form for estimation in the following way:

$$\ln CM_t = \alpha_0 + \beta_1 \ln FLR_t + \beta_2 \ln PGNI_t + \mu_t$$
(2)

Where, *CM* denotes the under-five child mortality, *FLR* is the female literacy rate, *PGNI* is the per capita gross national income, base year 2000 U.S. \$ per annum, of Bangladeshi residents respectively. Besides,  $\mu_t$  is time period and is the stochastic disturbance term, which is surrogate or proxy for all omitted variables that may affect the child mortality function. It also shows the intrinsic randomness of demographic behavior.

In this model is the autonomous child mortality death (positive child mortality at zero female literacy rate and per capita income for survival), which is expected to be positive,  $\beta_1$  and  $\beta_2$  are, respectively, the marginal propensity to female literacy rate and per capita income.

The behavioral assumptions require that  $\alpha_0 > 0$ ,  $\beta_1$  and  $\beta_2 < 0$ , respectively, and that the  $\mu_t$  sequence is stationary, so that any deviations from long-run child mortality equilibrium are temporary in nature.

 $\mu_{t} = \ln CM - \alpha_{0} - \beta_{1} \ln FLR_{t} - \beta_{2} \ln PGNI_{t}$ (3)

that is stationary.

We have argued that  $CM_p$  FLR_t & PGNI are most likely integrated of order one, so that their changes are stationary. If these variables are each I (1), then it is typically true that the error  $\mu_t$  will also be I(1). However, stationarity in  $\mu_t$  would establish (3) as a plausible long-run relationship, with the short-run dynamics incorporated in  $\mu_t$ , usually referred to as the *equilibrium error*.

## 3.2 Data

The paper used the data of the three indicators, under-five Child Mortality (CM), Female Literacy Rate (FLR), and per capita Gross National Income (PGNI), per annual 2000 U.S. \$, of Bangladesh for the past three decades starting from year 1981 to 2013. The paper is based on the annual data collected from the Interagency Group for Child Mortality Estimation (UN IGME), which updates its child mortality estimates annually after reviewing newly available data and assessing data quality. This report contains the latest UN IGME estimates of child mortality at the country, regional and global levels. Country-specific estimates and the data used to derive them are available at http://www.childmortality.org.

The paper used rest of the data, Female Literacy Rate (FLR) and per capita Gross National Income (PGNI). Bangladesh collected from the Bangladesh Bureau of Statistics (BBS) and World Bank Development Indicator (WDI). In addition, the simulations undertaken in this report are based on empirical analysis of secondary data, which typically relies on many assumptions about data quality and measurement, inferences of causality between variables, and potential biases of statistical and econometric estimates.

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# 4. Analytical Framework

## 4.1 Unit Root Test: Augmented Dickey-Fuller (ADF) Test

The Augmented Dickey-Fuller (ADF) Test (Dickey and Fuller 1981) can also be generalized to allow for higher-order autoregressive dynamics, in case an AR(1) process is inadequate to render white noise. The ADF test for a unit autoregressive root tests the null hypothesis  $H_0$ :  $\delta = _0$ , against the alternative  $H_1$ :  $\delta < 0$  in the following regression:

$$\Delta Y_t = \alpha_0 + \delta Y_{t-1} + \theta_t \sum_{i=1}^m \Delta Y_{t-1} + \varepsilon_t$$
(4)

Where  $\Delta Y_t = Y_t - Y_{t-1}$  is the first difference operator, and Y is the variable under consideration, is chosen by Schwarz criterion and  $\varepsilon_t$  is a white noise error term, m is the number of lags in the dependent variable. The optimal lag length, *m*, can be chosen using data dependent methods that have desirable statistical properties when applied to unit root tests.

If  $Y_t$  is stationary around a deterministic linear time trend, then the trend't' i.e., the number of observation must be added as an explanatory variable. Alternatively (4) can be written as

$$\Delta Y_t = \alpha_0 + \beta_0 t + \delta Y_{t-1} + \theta_i \sum_{i=1}^m \Delta Y_{t-1} + \varepsilon_t$$
(5)

In the equation (5)  $Y_t$  is a random walk with drift around a stochastic trend. Here is an unknown coefficient and the ADF statistic is the OLS t-statistic testing  $\beta_0 = 0$  in (5).

# 4.2 Structural Stability Test: The Chow Test

The Chow (1960) test to examine the structural stability of a regression model and sometime the structural change may be due to internal or external forces or policy changes.

Since we have data, we can obtain an OLS regression of under-five child mortality (CM) on female literacy rate (FLR) and per capita gross national income (PGNI) in Bangladesh over the period 1981-2013. We divided the sample period 1981-2000 and 2001-2013, and showed on the basis of the chow test that there was a difference in the regression of child mortality on female literacy rate and per capita gross national income between the two time periods: 1981-2000, Pre–MDG period and 2001-2013, the Post–MDG period. Now we have three possible regressions:

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Time period 1981-2000:  $CM_t = \psi_1 + \psi_2 FLR_t + \psi_3 GNI_t + \mu_{1t}$ ;  $n_1 = 20$  (6)

Time period 2001-2013: 
$$CM_t = \gamma_1 + \gamma_2 FLR_t + \gamma_3 GNI_t + \mu_{2t}$$
;  $n_2 = 13$  (7)

Time period 1981-2013:  $CM_t = \varphi_1 + \varphi_2 FLR_t + \varphi_3 GNI_t + \mu_t$ ; n=n₁₊n₂=33 (8)

Regressions (6) and (7) assume that the regressions in the two time periods are different; that is, the intercept and the slope coefficients are different.

Regression (8) assumes that the intercept as well as the slope coefficient remains the same over the entire period; that is, there is no structural change, then  $\Psi_1 = \gamma_1$  $= \varphi_1$  and.  $\Psi_2 = \gamma_2 = \varphi_2$ 

The chow test assumes that,  $\mu_{1t} N(0, \alpha^2)$  and,  $\mu_{2t} N(0, \alpha^2)$  that is, the error terms in the sub period regressions are normally distributed with the same variance  $\alpha^2$  (homoscedastic). And two error terms,  $\mu_{1t}$  and  $\mu_{2t}$ , are independently distributed.

Under the assumption that the error terms in the sub sample period regressions are normally distributed with homoscedastic variance, we compare the unrestricted and restricted least-squares regression by F test. The chow test is based on the *F*-*test* as follows:

$$F = \frac{(RSSS_R - RSS_{UR})/k}{(RSS_{UR})/(n_1 + n_2 - 2k)} \approx F_{[k,(n_1 + n_2 - 2k)]}$$

Where, k is the number of estimated parameters, RSS is residual sum of squares and n represents the number of observations.

### 5. Empirical Results²

## 5.1 Unit Root Test

We begin the empirical analysis by examining the time-series properties of the data. It starts with the test of stationarity of variables of the model (2), using unit root test procedures. The standard ADF (Augmented Dickey-Fuller) test has been used to perform the unit root test to the *lnCM*, *lnFLR and lnPGNI* series separately of the model and examine their *order of integration*.

² After operating analysis in software *E-Views 5.1* version, we got the result significant and observing the obtained result we can illustrate that the macroeconomic variables in Bangladesh.

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Variables	Levels, I(0)		First Differences, I(1)	
	t-ADF	<b>P-Value</b>	t-ADF	<b>P-Value</b>
Intercept				
lnCM	-0.257	0.91	-4.579	0.00
lnFLR	-3.154	0.03	-3.767	0.01
lnPGNI	9.868	0.94	-5.262	0.04
Intercept and Tr	end			
lnCM	-3.676	0.05	-4.429	0.01
lnFLR	-2.874	0.18	-3.837	0.03
lnPGNI	2.083	0.45	-5.250	0.00

Table 2 : ADF Statistics for Testing for Unit Roots for Period 1981 to 2013

Notes: Author's calculation. (i) ADF statistics at I(0) indicates acceptation, I(1) indicates rejection of the unit root hypothesis at the 1%, 5% and 10%, respectively, level of significance. (ii) *p-value* sign indicates lag length chosen by Schwarz Information Criteria (SIC), but MAXLAG =8.

The ADF test used includes a constant and constant with a linear trend in the test regression since it has more general specification. The test has employed automatic lag length selection using a Schwarz Information Criterion (SIC) and a maximum lag length of 8. SIC is considered to be more appropriate because of small numbers of observations in the study (33 observations). *Table-2* reports the test statistics for the model without and with a time trend and intercept in level and in first differences, respectively.

The estimated statistic for all the variables *at level* does not exceed ADF test statistics. It shows that the null hypothesis of unit root cannot be rejected at 5 per cent level of significance for all variables at level. The results show that the unit root hypothesis is rejected at the first differences for all variables. This result from unit root tests provides strong evidence of non-stationarity *at levels* and stationarity *at first difference* for all variables. The residuals are also found stationary using a Schwarz Information Criterion (SIC) and a maximum lag length of 8 and 33 observations. The result provides the basis for the test of long-run relationship among all variables, which is *p-values* statistically highly significant at 1%, 5% and 10% level, are stationary.

# 5.2 The Chow Test

# 5.2.1 Estimation of the Regression Model

The first regression model covers the data for the Pre-MDG period of 1981-2000. The regression result is as follows:

Variable	Coefficient	Std. Error	t-Statistic
LNFLR	-0.564	0.049	-11.344
LNPGNI	-0.427	0.026	-16.235
С	12.408	0.097	127.917
R-squared	0.917	Mean depende	nt var
Adjusted R-squared	0.903	S.D. dependent var	
S.E. of regression	0.011	Akaike info criterion	
Sum squared resid	0.002	Schwarz criterion	
Log likelihood	61.821	F-statistic	
Durbin-Watson stat	1.585	Prob(F-statistic	2)

Table 3 : Regression Results for Pre-MDG Period: 1981-2000Dependent Variable: LNCM

The regression results for dependent variable of lnCM shown in Table-3 found a negative significant relationship between lnFLR and lnCM growth, implying that the estimated coefficient -0.564 implies that lnFLR - lnCM ratio by one percentage increase lnFLR leads to lnCM reduction by 0.564 percent per annum, and similarly one percentage increase of lnGNI reduces lnCM by 0.427 percent per annum.

The model, therefore, is statistically significant at any level, as reflected in the higher within- $R^2$  and adjusted- $R^2$  statistic of 0.917 and 0.903. From the Durbin Watson (D-W) tables, we found that for the number of observations is 19 and the number of explanatory variables is 2, lower bound  $d_L = 1.074$  and upper bound  $d_U$ 

	Dependent	anable: LINCIN	1	
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNFLR	-0.791	0.143	-5.531	0.00
LNPGNI	-0.565	0.169	-3.340	0.00
С	10.690	1.011	10.567	0.00
R-squared	0.946	Mean depende	ent var	4.054
Adjusted R-squared	0.934	S.D. dependen	it var	0.275
S.E. of regression	0.034	Akaike info criterion		-3.700
Sum squared resid	0.011	Schwarz criterion		-3.569
Log likelihood	27.050	F-statistic		377.618
Durbin-Watson stat	1.712	Prob(F-statisti	c)	0.00

 Table 4 : Regression Results for Post-MDG Period: 2001-2013

 Dependent Variable: LNCM

= 1.536 at 5% level of significance. Since the computed *d* is 1.585, it falls in the *no autocorrelation region, positive or negative*, because it lies between lower and upper limit, .

The second regression model covers the data for the Post-MDG period of 2001-2013. The regression result is as follows:

Similarly, we found a negative significant relationship between the model, because F and p-values for the relationships, lnFLR and lnGNI with lnCM, are statistically significant and include a better fit of the model, shown in Table-4, as reflected in the higher within-R² and adjusted-R² statistic and the estimated explanatory variable shows statistically significant results indicating 0.946 and 0.934. And we found that for the number of observations is 12 and the number of explanatory variables are 2, lower bound  $d_L = 0.812$  and upper bound  $d_U = 1.579$  at 5% level of significance, from the Durbin Watson (D-W) tables. The computed *d* of 1.712 falls in the *no autocorrelation range, positive or negative*, because it lies between lower and upper limit,.

The regression model presented Table-5 covers the data for the full sample period of 1981-2013:

Dependent Variable. ENCM						
Variable	Coefficient	Std. Error	t-Statistic	Prob.		
LNFLR	-0.750	0.025	-29.704	0.00		
LNPGNI	-0.531	0.021	-25.114	0.00		
С	10.626	0.069	153.471	0.00		
R-squared	0.954	Mean depend	ent var	4.577		
Adjusted R-squared	0.939	S.D. dependent var		0.499		
S.E. of regression	0.039	Akaike info criterion		-4.581		
Sum squared resid	0.025	Schwarz criterion		-4.445		
Log likelihood	78.591	F-statistic		7251.84		
Durbin-Watson stat	1.383	Prob(F-statistic)		0.00		

Table 5 : Regression Results for Full Period: 1981-2013Dependent Variable: LNCM

The regression results for dependent variable of lnCM shown in Table-5 show a negative significant relationship between lnFLR and lnCM growth, implying that the estimated coefficient -0.750 implies that a one percentage increase lnFLR leads to 0.750% reduction in lnCM per annum, and similarly a one percentage increase of lnGNI leads to lnCM reduced by 0.531 percent per annum.

The model is significant at any level, because *p-value* of F-statistic for the relationships, lnFLR and lnGNI with lnCM, are statistically significant and better fit of the model, as reflected in the higher within-R² and adjusted-R² statistic estimated show a at 0.954 and 0.939, and they are statistically significant at the usual levels of confidence.
From the Durbin Watson (D-W) tables, we found that for the number of observations (n-1) at 32 and the number of explanatory variables at 2, the lower bound  $d_L = 1.309$  and upper bound  $d_U = 1.574$  at 5% level of significance. Since the computed *d* of 1.383 falls in the *indecisive zone*, there is inconclusive evidence regarding the presence or absence of positive first order serial correlation. It lies between lower and upper limit, one cannot conclude that first order serial correlation does or does not exist.

### 5.2.2 Mechanics of the Chow Test

Under the assumption the chow test is based on the *F*-test as follows:

The computed value of the F-statistic is 8.33, which is significant at 5% level with 3 and 27 degrees of freedom. From the *F-table*, we find that at 1% critical value is 4.64 and at 5% critical value is 2.98. Therefore, since the computed F-value is greater than the critical value, we reject the hypothesis of parameter stability and conclude that the regressions (6) and (7) are different, in which case the pooled regressions (8) are of dubious value.

Therefore, we can reject the null hypothesis that the parameters of the function for both the regimes are stable, i.e., structural change. Thus we can conclude on the basis of the Chow test that the child mortality function parameters are not stable over the entire sample period. That is, structural changes have taken place on the model parameters from pre-MDG to post-MDG period. It has also found that the change has taken place both in the intercept and slope of the model.

### 6. Summary and Conclusion

Growth of female literacy rate and per capita gross national income helps reduce child mortality. The effect on reduced child mortality in Bangladesh is fairly large and robust. Yet growth alone will not deliver mortality reduction at the rate necessary to reach the MDG target. In Bangladesh, the decline in infant mortality forms a major challenge in attaining the MDG on child survival (i.e. under-five child mortality). Six countries including Bangladesh received the UN MDG award in New York's Astoria hotel for their remarkable achievements in attaining the Millennium Development Goals particularly in reducing child mortality (September 19, 2010, New York).

Using time-series data for 1981-2013 period, and applying unit root test and Chow test, the paper finds that the child mortality function does not maintain stability during the full sample period. That is, structural changes have taken place on the model parameters from pre-MDG to post-MDG period. It has also found that the change has taken place both in the intercept and slope of the model. However, due to policy changes, such stable relationship can change over time. The finding of the study has strong implication for public policy. Government needs to recognize that a given level of growth is consistent with different rates of child mortality reduction to achieve basic demographic goals in Bangladesh. Children are considered as the future of a nation. So, the health of a nation depends on the health of its children (Sen, 1998). According to Bhalotra (2007), appropriate policy responses need to recognize that a given level of growth is consistent with different rates of mortality reduction, indicating the importance of other factors such as time-varying unobservable ones that most likely reflect improvements in public health and significantly contribute to mortality decline in Bangladesh.

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## Forest-Based Adaptation to Climate Change: Moving Forward with Multiactor Governance and Legal Pluralism¹

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Abstract Forests for adaptation' requires judicious use of forest services and improved access for local communities. Forest ecosystems provide services that reduce the vulnerability of communities and broader society to climate change. According to a recent estimate, total forest land in Bangladesh is about 2.5 million hectares or 17% of the land surface of the country. The history of forestry in Bangladesh is one of continuous depletion of forest resources both in terms of area and quality. Since the early 1980s, forestry in Bangladesh has witnessed a rapid succession of social forestry programmes in an attempt to redress public alienation and to allow for wider participation of local people in forest use and management. Establishment of large scale plantation in the degraded forestland and in marginal land may be seen not only as rehabilitation programme for degraded forestland but also promotion of ecosystem based adaptation in the country. About 4.65 million hectares of such land has been identified for future rehabilitation and restoration purposes through social forestry programme. But allocation for Annual Development Programme (ADP) of the forestry sector is far less than planned target of the Forestry Sector Master Plan. Therefore, the inquiry is two pronged: first, to assess whether and to what extent Bangladesh's existing legal authorities can be used to support the development of a formal, "scaled-up"

¹ Views expressed in this paper are those of authors and in no way should be implicated to their employers

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forest-based adaptation strategy and second, to identify gaps and recommend future changes or additions to strengthen the legal framework in support of an ecosystem based approach. A framework for facilitating forest-based adaptation is discussed and a review of adaptive actions presented in this paper.

**Keywords**: forest-based adaptation, ecosystem based adaptation, community forest management (CFM), Forest Governance, legal framework, reducing emission from deforestation and forest degradation (REDD+)

### 1. Introduction and Background

Bangladesh is situated in north eastern part of South Asia between 20° 34' and 26° 38' north latitude and between 88° 01' and 92° 41' east longitude. It lies in the active delta of three major rivers viz Padma, Meghna and Jamuna and their numerous tributaries. The country covers an area of 1,47,570 sq.km and bounded by India from the west, north and most of east. Myanmar lies on the southeastern edge and Bay of Bengal on the south. The southwestern region consists of a large number of dead and cut-off rivers. The coastal part of Bangladesh includes the famous Sundarbans Mangrove Forest. Forest, and the goods and services they provide, are essential for human well-being. Together with existing socioeconomic processes (e.g. deforestation, forest fragmentation, other forms of habitat loss and population growth), however, climate change could lead to significant changes in the delivery of such services.

According to a recent estimate, total forest land in Bangladesh is about 2.5 million hectares or 17% of the land surface of the country (Bangladesh Economic Review, 2002). The forest land of Bangladesh is broadly categorized as state forest land (2.2 million hectares) and private forest land (0.4 million hectares). Of the state forest land 1.3 million hectares of natural forests and plantations are under the jurisdiction of the Forest Department (FD) in the Ministry of Forest and Environment (MOFE).

The history of forestry in Bangladesh is one of continuous depletion of forest resources both in terms of area and quality (FMP 1994). Most deforestation in government forests has occurred due to the inadequacy of the bureaucratic custodian approach to forest management (Khan 2001). Since the early 1980s, forestry in Bangladesh has witnessed a rapid succession of social forestry programmes in an attempt to redress public alienation and to allow for wider participation of local people in forest use and management (Mustafa, 2002). Establishment of large scale plantation in the degraded forestland and in marginal land may be seen not only as rehabilitation programme for degraded forestland but also promotion of planted forests in the country. Degraded forestland and

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No.	Available Land	Area in Million
		Hectare
А	Degraded & denuded land of Un-classed State	1.00
	Forest Land	
В	Khas lands	0.56
С	Degraded government forest land	0.27
D	Marginal strip land	0.08
Е	Homestead marginal land	0.27
F	Degraded tea garden land	0.06
G	Degraded private forest land	0.05
Н	Cropland Agroforestry on private agricultural	2.36
	lands	
Total Available Land for Social Forestry		4.65

Table 1: Available land for social forestry programme in Bangladesh

Source: Foest Department, 2010

marginal land are the target areas for social forestry programme in Bangladesh. About 4.65 million hectares of such land has been identified as shown in Table 1 for future rehabilitation and restoration purposes through social forestry programme.

### 2. Forestry Sector Financing

Allocation in the Annual Development Programme (ADP) for the forestry sector is far less than the planned target of the Forestry Sector Master Plan (1995-2015).

Year	ADP Allocation (in lakh Tk.)	Expenditure (in lakh Tk.)
2000-2001	11913.49	10453.217
2001-2002	10491.00	9016.871
2002-2003	9687.00	7140.464
2003-2004	11260.00	9924.914
2004-2005	9885.00	2120.861
2005-2006	11771.00	11173.401
2006-2007	5609.00	5351.86
2007-2008	5898.00	5336.26
2008-2009	3667.00	3606.57
2009-2010	3323.00	3346.938

Table 2 : ADP allocation in the forestry sector of Bangladesh

Source: Forest Department 2010

According to the Master Plan, annual allocation requirement is Tk.80000.0 lakh. But average ADP allocation has been only Tk.20000.0 lakh since 1995 and in recent years this figure has been reduced to just Tk.10000.0 lakh due to the absence of donor financing. As such, inadequate financing is considered as the main challenges for successful implementation of Master Plan in Bangladesh. Last 10 years' ADP allocation in this sector is given in Table 2. Development partners like Asian Development Bank and World Bank may come forward to finance development projects to achieve the target of the Forestry Sector Master Plan (1995-2015) and thus can contribute to the implementation of the Forest Instrument of United Nations Forum on Forest (UNFF).

### 3. Forests and adaptation

The linkages between forests and adaptation are twofold (Locatelli et al. 2010). First, as climate change will affect forests, adaptation measures are needed for forests to reduce negative impacts and maintain ecosystem functions (adaptation for forests). Second, forest ecosystems contribute to adaptation by providing local ecosystem services that reduce the vulnerability of local communities and the broader society to climate change (forests for people's adaptation). Forest ecosystems contribute to adaptation by providing local ecosystem services that reduce societies' vulnerability to climate change (Vignola et al. 2009). It is increasingly being recognized that well-managed ecosystems can help societies to adapt to both current climate hazards and future climate change by providing a wide range of ecosystem services (Turner et al. 2009). For example, mangroves protect coastal areas against storms and waves, forest products provide safety nets for local communities when agricultural crops fail and hydrological services (such as base flow conservation, storm flow regulation, and erosion control) are of utmost importance for buffering the impacts of climate change on water users (CBD 2009). Ecosystem-based adaptation (EbA) is an emerging approach to adaptation that takes into account the role of ecosystem services in reducing the vulnerability of society to climate change, in a multisectoral and multilevel approach (Colls et al. 2009, Vignola et al. 2009, World Bank 2009).

In September 2010, the Adaptation Fund of the UNFCCC accepted its first two projects. One of these projects ('Addressing Climate Change Risks on Water Resources in Honduras: Increased Systemic Resilience and Reduced Vulnerability of the Urban Poor') aims to improve water management and decrease water problems for the poor in the Honduras capital region of Tegucigalpa. This project extensively considers the role of forests, including how they capture mist from the atmosphere and the negative impacts of deforestation

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in water catchment areas. The project document states that no mechanisms are currently in place to conserve the forests and the 'green belts' that provide important ecosystem services and that are threatened by deforestation and urbanisation. In addition to this emphasis on 'forests for adaptation', the project also addresses 'adaptation for forests' by aiming to increase the connectivity between protected areas around Tegucigalpa, in order to increase ecosystem resilience as climate changes. This project is a positive sign of an emerging mainstreaming of forests into adaptation policies, as well as adaptation into forest management.

### 4. Ecosystem-based Adaptation: an Emerging Concept

Ecosystem-based adaptation (EbA), an emerging concept both in science and in international discussions on climate change and biodiversity, offers opportunities for both ecosystems and ecosystem-dependent communities to overcome the challenges (IUCN, 2009). EbA is a set of adaptation policies or measures that consider the role of ecosystem services in reducing the vulnerability of society to climate change in a multi-sectoral and multi-scale approach (Vignola et al. 2009). Such policies and measures also aim at reducing the vulnerability of ecosystems and their services to different threats, including climate change and land-use change.

In order to ensure that ecosystems like forests contribute to the adaptation of broader society and to provide multiple co-benefits, EbA must reduce current threats to ecosystem services (e.g., deforestation and forest degradation) as an important first step for reducing forest ecosystem vulnerability. However, it should also aim at reducing future threats by implementing forest adaptation to climate change. In this sense, EbA is an overarching framework for forests and adaptation, in which 'adaptation for forests' is needed to ensure the role of 'forests for adaptation' (Locatelli et al., 2010).

In places where ecosystem conservation and sustainable management are already being implemented and non-climatic threats are minimized, specific adaptation measures can be incorporated into those practices. Forest adaptation measures for example can aim to buffer forests from perturbations or facilitate evolution of the ecosystem towards a new state that meets altered conditions (Guariguata et al., 2008). Buffering measures focus on preventing perturbations such as invasive species, insects and diseases. Measures that facilitate system shift or evolution do not aim at resisting or reverting changes, but rather at easing transitions and managing natural adaptation processes that would lead the ecosystem towards a socially-acceptable state. An example of a facilitating measure is the reduction of landscape fragmentation to enhance connectivity between habitats which in turn eases species migration. Another facilitating measure for forests consists of conserving a large spectrum of forest types for their value and resilience; for instance, ecosystems across environmental gradients or biodiversity hotspots.

### 5. Active Community Participation

Forest ecosystems are of great importance to millions of people whose livelihoods largely depend on them. These ecosystems have immense potential for reducing the impacts of climate change. Tropical forest fringe communities are most vulnerable to climate change variability and long-term changes. Therefore, measures introduced by governments and development stakeholders to protect, restore, and sustainably manage the forests are considered to be vital climate change management instruments. Communities around the forests are using various adaptation strategies to improve agriculture, biodiversity conservation, and water resources management in order to minimize the impacts of the climate change.

Community participatory management is the right approach for protecting and developing forest resources and mitigating climate change. Conservation and proper management of forests is not possible without an active participation by the local people. Community engagement can contribute to improving climate change policy outcomes by assisting community members to develop informed understanding of climate change trends, impacts and consequences and maximizing opportunities for citizens and communities to contribute to public debate about climate change issues and actions. To achieve these goals, the Forest Department needs to facilitate an active engagement of forest fringe communities in the protection and management of forests.

### 6. Community Forest Management

Community forest management (CFM) combines two things: type of resource (forests) and a class of owner/manager (communities) (Chhatre and Agarwal 2008). Here the term CFM used broadly to refer to many different specific forms: participatory: participatory forest management (PFM), joint forest management (JFM), forest co-management and community based forest management (CBFM). The viability of each management approach depends on the characteristics of the resource systems and their contexts, formal property rights arrangements, informal practices of use and governance, and relations of power and inequality. The power relations interplay within communities, among them and between communities and higher-level actors (Ostrom 2003).

Community forests are often contrasted with forests under open access, government ownership or ownership by private actors. But forest management in practice is complex within these broad categories, and can combine elements across them (Schlager and Ostorm 1992; Agarwal et al. 2008). For the last 10 years, the co-management approach is widely tested in Bangladesh in natural resources management especially in forestry and fisheries. Earlier studies suggested that community management would inevitably lead to degradation and a tragedy of commons. But a recent experience shows that communities can manage forests sustainably in different contexts, particularly when forest policy at the micro-level enables local governance efforts. On the other hand, government forest department often cannot manage resources sustainably and may fail to distribute forestry benefits equitably. Lax enforcement coupled with the high value of forest products and the land on which forest stands, has led to corruption in the forestry sector and losses of revenue for government and benefits for local communities.

### 7. Linking REDD+ with national adaptation strategies

The linkage between forests and adaptation are two-fold: Adaptation is needed to maintain forest functioning and forests play a role in adaptation of forestdependent communities and broader society (Locatelli, B et al., 2011). Forests are vulnerable to climate change and implementing forest adaptation measures can reduce the negative impacts (Locatelli, B et al., 2008 as quoted by Locatelli, B et al., 2011). The heavy dependence on nature for livelihoods and in key economic activities, for example rain-fed agriculture, and fuel wood energy from forests, means that adaptation of forests should be part of the strategy of maintaining key sectoral functions in the long run, and reducing emissions from deforestation and forest degradation (REDD+) could prove useful in doing this.

Second, forests play a role in adaptation of communities and broader society (forests for people's adaptation). In this regard forest ecosystems contribute to adaptation by providing local ecosystem services that reduce societies' vulnerability to climate change (Vignola, R et al, 2009 as quoted by Locatelli, B et al., 2011). It is increasingly recognized that well managed ecosystems can help societies to adapt to current climate hazards and to future climate change by providing a wide range of ecosystem services.

While private sector involvement will be key to ensure long-term sustainable financing for REDD through existing and future voluntary and compliance markets, it is currently low in the region. Some good examples of public-private partnerships for REDD do exist, but potential investors have generally tended to shy away due to uncertainties in the global climate change deal, high transaction costs, and perceived risks in forest carbon offsets, particularly in Bangladesh with a history of illegal logging and corruption. Obstacles to investment and associated risks will need to be mitigated to encourage greater private sector financing.

### 8. Legal Pluralism and Multiactor Governance in Forest Management

The government and NGO decision-makers and resource managers generally reflect support for and acceptance of the co-management approach to forests management, both as a way of meeting community subsistence needs and as a means to ensure more effective protection for climate change vulnerability. There is a widespread understanding that the models are working and that momentum for co-management is building – it is not a question of whether to scale up, but how. Of course, not everyone takes the same view of how co-management should function, and questions have been raised (among others) about such issues as the relative roles of communities and government in the co-management scheme. Nevertheless, the support of agencies and NGOs is crucial to both the continued implementation of co-management and the adoption of more fundamental legal changes to enable this approach in the long term.

**8.1 Who can manage forests better than those living within or beside them?** Many have argued that greater recognition of community rights and more power over forests for communities may help achieve forest outcomes (Arnold and Stewart 1991; Charnley and Poe 2007). With REDD+ redefining the forest management and conservation landscape, community forest management (CFM) can contribute to reduce forest emission and increased resilience of the forest dependent communities. Communities in many regions of the world have always used and managed forest near their settlements. Recognizing the potential of CFM, government and NGOs should formally support different versions of CFM.

**8.2** Although the framework environmental laws do not formally authorize co-management in forestry areas, they provide some authority for participatory resource management. Since the fundamental environmental and natural resource laws in Bangladesh (1927 Forest Act, 1950 Protection and Conservation of Fish Act, 1974 Wild Life (Preservation) (Amendment) Act, 1995 Environment Conservation Act) predate introduction of the co-management concept, there is no explicit mention of co-management in the current legal framework. However, this does not mean that Bangladesh lacks legal authority to undertake co-management projects. Some of the laws and their accompanying rules do espouse participatory concepts of resource management, and agencies are

using other legal tools at their disposal to move their co-management efforts. The 1927 Forest Act (as amended in 2000) provides some authority for participatory approaches to forest management. Section 28 of the Forest Act authorizes social forestry programs in the forests, and triggered the development of Social Forestry Rules (and a social forestry program) in 2004. Section 28 also authorizes the establishment of village forests, and rules to implement this provision are currently being written.

**8.3** Agencies are using rules, administrative orders, policies, and strategies to implement pilot co-management activities, although a more coherent strategy is needed. Since the bedrock laws do not explicitly authorize co-management of forestry areas, agencies are using rules, administrative orders, policies, strategies, and related "soft law" authorities to implement their pilot co-management activities. For example, the National Forestry Policy (1994) espouses "active participation of the people" (along with NGO involvement) in promoting afforestation efforts, including in reserve forests. The Social Forestry Rules have also been cited as possible support for a co-management approach in forest protected areas. The two-volume 1993 Forestry Master Plan also discusses participatory approaches, although this document does not appear to be currently used by the Forest Department.

The current legal framework in Bangladesh raises a host of 8.4 jurisdictional questions with respect to protected areas management. One issue involves overlapping jurisdiction between the 1927 Forest Act and other laws, which creates a risk of regulatory conflicts. For example, because protected forest areas, which fall under the authority of the 1974 Wildlife Act, are located within reserve forests, they are also subject to the Forest Act. Similarly, while the treatment of fish falls under the Protection and Conservation of Fish Act, fish caught in forested areas are considered forest produce, and also implicate the Forest Act. The draft Ecologically Critical Area Rules also introduce jurisdictional confusion, by vesting the Department of Environment with authority over land use and zoning in areas, such as forests and fish sanctuaries, that fall under the authority of the Forest and Fisheries Departments and their respective laws. A countervailing question arises as to how to promote a landscape-level approach to forest management when the resources within a single ecosystem or landscape fall under the control of different departments. Presently, the Forest Department cannot address activities, such as tea gardens, on the borders of protected areas that do not fall under its control (rather, these gardens operate on long-term leases from the Ministry of Lands).

The volatile issue of land tenure, while far too complex to address 8.5 under a co-management approach, illuminates some of the difficulties in determining how the legal system should facilitate community access, particularly for indigenous communities, to natural resources. In some cases, community resource use predates the establishment of protected areas, and tensions have arisen over the claims of communities that currently reside in protected areas. At the same time, co-management can and should address long-term use rights by local communities, including historic claims to these rights. Granting such rights, under appropriate conditions, can provide communities with incentives for sustainable, long-term resource management and strengthen both resource protection and community livelihoods. Elements of use rights that should be considered include (i) rights of exclusion; (ii) rules governing resource use; and (iii) rights of enforcement. Agencies have already begun to establish use rights through such initiatives as the draft Fish Sanctuary Law proposed by the Department of Fisheries and the Social Forestry Rules under the Forest Act.

**8.6** Another issue entails whether and how to institute a zoning system within the legal framework governing protected areas. While the laws do not formally provide for zoning, some protected areas appear to have de facto buffer zones, with income-generating activities operating around their borders. The Forest Department, in its report on Lessons Learned from Co-management under Nishorgo, has called for the delineation of buffer zones around protected forest areas for social forestry plantations, and staff members within the Department have even proposed the creation, through an administrative order, of separate buffer zones within select large-scale protected areas, such as Teknaf Game Reserve (USAID 2008). However, it may be more useful to provide legal authority to create flexible use zones that are tailored to particular areas (e.g. protected areas rather than larger landscapes), without mandating their establishment.

**8.7** Benefit sharing is a critical component of the co-management approach, and arguably constitutes the foundation upon which co-management must be structured, for co-management will not succeed without addressing the subsistence and livelihood needs of local communities living near protected areas. Examples of benefit sharing approaches include the apportioning of revenue from resource-based activities such as ecotourism and resource harvesting (fisheries leases, timber sales); the sustainable harvesting by communities of resources (such as non-timber forest products and intermediate harvest) within and adjacent to protected areas.

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### 9. Conclusion and Recommendation

About 4.65 million hectares of degraded and marginal land has been identified by the Forest Department for future rehabilitation and restoration purposes through social forestry programme. But allocation for Annual Development Programme (ADP) of the forestry sector is far less than planned target. According to the Master Plan, annual allocation requirement is Tk.80000.0 lakh. But average ADP allocation has been found only Tk.20000.0 lakh since 1995 and in recent years this figure has been reduced to Tk.10000.0 lakh only due to the absence of donor financing. In such a context, the social forestry programme may be targeted through community based approach i.e. forest department may issue lands for forest concession to the forest dependent community for a given tenure. The community with technical assistance from the department may undertake plantation, nursing and logging activities. The commercial banks may come forward to finance the community groups as part of their longer term green financing and/or refinancing schemes.

Moreover, REDD+ outcomes can be enhanced by selecting community forest management sites with user group and contextual characteristics associated with successful forest outcomes. These includes a stable technological and policy environment, low levels of intergroup conflict, and small to medium-sized, forest dependent user groups that have management experience. Greater recognition of community rights and more power over forests for communities may help achieve forest outcomes. The viability of the approach depends on the characteristics of the resource systems and their contexts, formal property rights arrangements, informal practices of use and governance, and relations of power and inequality.

Looking ahead, several priorities for near-term action emerge. The first one is to get the 2008 Amended Wildlife Preservation Act approved, although the Act could be strengthened by several additions, such as a general provision on the participatory preparation of management plans for protected areas and measures to harmonize, or at least resolve jurisdictional conflicts between the Wildlife Act, (new) Wildlife Policy, and the Forest Act. Once the Act is finalized, specific co-management rules (addressing such issues as benefit sharing with community) could be developed. A second priority is to approve the draft "Guideline for the Collection and Utilization of Revenue Earned from the Protected Areas," which would institute a much-needed revenue sharing approach. A third priority is to approve the administrative order proposed by the Forest Department to create buffer zones in protected forest areas for community use. In the medium-to-long term, revisions to the 1927 Forest Act could be used to considerably strengthen the legal framework in support of co-management.

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# Socioeconomic Disparities Affecting the Immigrant's Health in U.S.A: A Case Study of Bangladeshi Immigrants

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**Abstract** Socio economics status (SES) generally depends on three major components: Education, Income and Occupation. Lower socioeconomic status increases high risk of diseases while decreasing education, income, health status and life expectancy as well. This paper examines the factors that affect directly and indirectly immigrant's vulnerability and socioeconomic status in health. There is a positive relationship between socioeconomic status and socio economic components (SEC) as when SES increases, SEC also increases and when SES decreases, SEC also decreases. In USA overall, immigrants have lower socio economic status compared to their counterpart white American citizen. Bangladeshi immigrants have lower socio economic status than any other ethnic group. Even among the southwest countries its position is all the way at the bottom. Bangladeshi immigrants have lower income, education, health status, occupation, and housing as well as lower living standard. Reducing immigrant's socio economic disparities in health will require strong policy initiative as well as effective policy implementation. Some effective policy options, which can reduce immigrant's socio economic disparities in health in USA, are indicated in this paper.

**Keywords :** Health, Socioeconomic factor, Immigrant's health, Health care system, and Health insurance.

### Introduction

Socioeconomic status plays an important role in individual health and it has great impact on health care. It does not only affect the individual's health care, it also

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affects individual' living standard Research has demonstrated a strong relation between socioeconomic status and immigrant health disparities. The people who have higher socioeconomic status have better health care access. Higher socioeconomic status allows individuals to visit doctors outside of their insurance coverage. Lower socioeconomic status has been linked to chronic diseases such as stress, heart disease, ulcers and type2 diabetes. Socioeconomic status has also been linked with psychological behaviors. Immigrant's socioeconomic disparity issue is not only important but also it is a big concern for the country's policy makers. Therefore because of a low level of socioeconomic status and poor health the government has a lot of expenditures for the immigrants that affect the whole economy. Every year new legal and illegal immigrants are adding to the existing amount of problems and they are becoming acute. It is time to think about an immigrant's socioeconomic status, understand how closely it is related to his living standard, and try to solve this nationwide problem.

In my paper I will try to show how socioeconomic disparity affects the immigrant's health in America especially, Bangladeshi immigrant's health. I will also try to show the causes of the low socioeconomic status which are affecting immigrant's health access. I conducted a survey in a Bangladeshi community in New York and found a high correlation between socioeconomic status and health care- since 1971 when Bangladeshi people started to come to the America. After starting diversity visa program a huge number of Bangladeshi people are coming America. Under this program all ages are coming. Some of them have skills and an education while other people do not have any education and skills. Health disparities can be reduced from Bangladeshi community by addressing the main determinants of socioeconomic status. Here I have suggested some important ideas and I have established that these ideas have strong relation between socioeconomic status and health care.

### Objective

the main objective of this paper is to examine how socio economic status are affecting immigrant's health in USA, especially Bangladeshi immigrant's health and finding out why immigrants have lower socio economic status compare to their counterpart white American citizen. The final goal of this paper is to address the nature of the factors that are responsible for immigrant's lower socio economic status in health and suggest some policy options.

### Finding

In the United States about 50 million immigrants (Documented and Undocumented) are living. They are around 15 percent of total population. The immigrants are facing lot of challenges in their social life. They have less

education, income and occupational status than white U.S. born people. They have also high mortality rate and morbidity rate. The immigrants have high risk of cancer, diabetes, asthma, heart disease and stroke rate compared to white U.S. born people. Disparities exist among the immigrants too. Asian immigrants are in a better position than African American, Hispanic and Latino immigrants. Black and Latino immigrants have very low position than any other immigrants. In this paper I find socioeconomic status components have correlation to the individual health status. When individual education, income, occupation status, physical and social environment improves health status also improve and mortality rate, morbidity rate and the risk of diseases decline.

Since 1972 income inequality and wealth discrimination has been growing rapidly in the United States. These inequalities lead to socioeconomic disparities in the society which affect health status directly or indirectly. In recent years health care activities in public and private sectors have increased, but it is not sufficient to meet these needs of the rapidly growing immigrants, as recent researches seem to indicate. The past few years have witnessed an increase in the problem of racial, ethnic and socioeconomic disparities in health in the United States. Many journals, newspapers, books, publications, government and non-profit organization reports have been published that describe the socioeconomic disparities existing in the United States society. Disparities have been defined in terms of differences in health status, risk factors for disease and injury, access to health care and quality of care. Socioeconomic disparities in the United States are linked to inequality of income, wealth, education, labor- market policies and welfare benefits.

Immigrants overall have lower levels of socioeconomic achievement than natives. Immigrants have lesser education, low family income, low occupation status and home ownership status. At the same time they have high unemployment and poverty rate. Socioeconomic status is generally believed to be directly linked to mortality and morbidity. Most studies regarding socioeconomic disparities between immigrants and Native American people showed that immigrants have overall lower socioeconomic status and a lower health condition. Cousineau and Stevens describe in their paper that African American men and women have mortality rates one and a half to two times more than that of White Americans.

Over the past fifty years socioeconomic status has been affecting infant mortality rates. In 2004 infant death rate was about 8 deaths per 1000 births. In 2011 African American babies died at a rate of over 14 deaths per 1000 births which is nearly twice that of white American babies. National and state data show that Latino and African American people have higher rates of diabetes, asthma, cancer, heart disease and other chronic illnesses than White American and other native people. Many studies show that Latino's and African American's health status is worse

than even Asian immigrants. Figure 1 shows mortality rate by race. The blue line is the symbol of heart disease and red line is cancer.

Figure 1 is shows that in spite of gaining jobs, better health, education and other facilities Latinos and African Americans have higher rate of death compared to





white Americans. Now the question is why the Latinos, African Americans and other immigrants have high rates of death even after getting overall facilities? Studies show that behavioral factors such as smoking, eating fast food, lack of exercise and social, cultural and environmental factors differentially affect disease risk. There is big difference in health status between immigrants and White Americans. The large health disparities are observed between black (immigrants and by birth) and White people. There are also health disparities between immigrants (Asian, Latinos and Hispanic) and White American. A Robert Wood Johnson Foundation study shows adult Hispanic, Asian and Black Americans have higher rates of diabetes than adult White Americans and diabetes increases the risk of heart disease, stroke and premature death. Figure 2 shows health disparities between immigrants and white Americans.

**Socioeconomic disparities cause lower health status**: The most fundamental causes of health disparities are socioeconomic disparities. Generally socioeconomic status has some components which determine a community people's living standard. Traditionally socioeconomic components are education, income and occupation. These components directly or indirectly measure socioeconomic status.

Education: Among the socioeconomic status components, education is the most and basic component. Education shapes an individual's future occupational

Figure 2: African Americans, Hispanic and Asian all have higher rates of diabetes than adult whites



opportunity and it provides knowledge about health care. Individual's quality of education is considered as a key to good health status. Many studies showed clearly that in United States immigrants have lower education rate than White Americans (Rector, Robert, 2006, October 25).

Primary education and pre academic skills depend on family environments. With low literacy rate family environments affect child's academic skills negatively and with a high literacy rate family environments help to increase child's academic skills and quality. A family of low level of socioeconomic status cannot pay attention to their child's education. Most of the children from low literacy rate family dropped out without high school graduation. Education is linked with people's health status, life expectancy, premature birth, and low weight birth babies. Women with higher level of education have less risk to get premature babies compared to women with lower level of education. Education affects the individual income and income affects individual home environment. Individuals with good education have good job and it helps the people to live better environment. Due to socioeconomic disparities overall immigrants have less high school degree than White Americans.

**Income**: Though education, occupation and other socioeconomic components affect the individual health, the level of income directly affect people's health and it is the direct contributor of individual well-being. Because of high source of income an individual with minimum level of education can get better health care

access. Higher income groups of people can provide better nutrition, housing, schooling and recreation. Lower income groups of people cannot always provide these. When individuals get better health care access, their health status obviously becomes better than who is not getting these facilities. Unfortunately the immigrants have lower income levels compared to white Americans even if both groups have the same levels of education.

**Occupation:** Occupation means an individual's profession. Simply they are employed or unemployed. There is evidence that unemployment and length of unemployment affects the health status. Occupational status is linked to mortality rates. Lower status job exposes workers to both physical and psychological risk and they have higher risk of occupational injury. Lower status job individual has less control over work than grater status job people. Few factors work in the job place. Fair pay, job stability, co-worker behaviors and environments are the main factors that affect individual physical and mental health. The average employed people spend about 8-10 hours in their work place. Unemployment or a negative work environment affect people's health negatively while positive work environments promote physical health and reduce sickness. The quality of job is positively related to individual's mental health. Negative work environments increase worker mental health problems like depression, anxiety, social isolation etc. An individual who has positive work environment feels better mentally. In the United States the immigrants' overall job status is lower than White Americans' and this lower occupational status affects immigrant health status.

**How socioeconomic disparities affect immigrant's health status?** Figure 3 shows as income levels goes up, health status improves.

It shows that adults who are poor with income below the federal Poverty Level (FPL) are most likely to be poor with poor health status. Even adults with middle income group (200-299 FPL) have also lower health status than those of higher income levels. This stepwise pattern is also seen when we compare education group and non-education group and low status occupation group and high status occupation group. The evidence shows big income difference between immigrants and White Americans. Because of large income difference the immigrants have higher poverty rate than White Americans.

Due to socioeconomic disparities immigrants are considered as a vulnerable population in the United States. Vulnerable population means a group of people who have poor physical, psychological, social health outcomes and inadequate health care. The overall immigrants have lower rate of health insurance, use less health care and receive lower quality of health care than U.S. born population.



Figure 3: Income and Poverty level

Socioeconomic disparities affect individual education, and education affects individual income, occupation and health status. It means there is a negative relationship between socioeconomic disparities and education, income, occupation and health status. As socioeconomic disparities decline, individual health status improves.

**Immigrants are vulnerable in USA**: In USA rapidly growing immigrants are the big concern for the country's policy makers. There are approximately 40.4 million immigrants which is 13% of the country's total population, in 2011. This huge number of immigrants is facing lots of socioeconomic problem. Among these immigrants the unauthorized ones are more vulnerable. Educational standards, occupation types and the level of income directly and indirectly affect immigrant's health care access. Most of the immigrants are involved in in-service jobs and live under poverty because they don't have school and college degree while almost all US born people are doing better jobs after their graduation. Immigrant status makes the immigrants more vulnerable. Undocumented immigrants are not eligible to get health insurance and get an official job.

**Immigrants have Lower Health Care access:** In America health insurance policy, procedures are complicated and health insurance coverage cost is high, which leads to almost 25 million immigrants being uninsured. In the USA the high cost of health care and getting insurance coverage are two big long term challenges for all Americans. This problem is more acute for the immigrants who have poor socioeconomic status and live under poverty level. Due to the lack of

	Uninsured	Employer- sponsored insurance	Medicaid/SCHIP	Nongroup& other private	Medicare & other public	Total			
ALL INCOMES									
US-born citizens	13.3%	59.1%	13.0%	5.5%	9.1%	100.0%			
Naturalized citizens	17.2%	54.9%	10.3%	5.4%	12.2%	100.0%			
Noncitizen immigrants	44.1%	36.5%	12.6%	4.0%	2.9%	100.0%			
LOW-INCOME (below 200 percent of poverty line)									
US-born citizens	22.6%	24.9%	32.5%	6.4%	13.5%	100.0%			
Naturalized citizens	26.2%	26.4%	23.2%	5.6%	18.7%	100.0%			
Noncitizen immigrants	56.1%	18.1%	19.3%	3.6%	2.9%	100.0%			

Table 1: shows health insurance status of citizens and non-citizens

Source: Author's analyses of March 2005 Current Population Survey

insurance, immigrants are facing serious barriers to get medical care. Statistics shows in many cases a single visit to the doctors or hospital can drive uninsured immigrants into debt and financial insolvency. According to US census data the immigrants are more than three times uninsured (44 percent) as native-born citizen (3 percent) and among the naturalized citizens 17 percent people are uninsured.

The reason for the big insurance gap between immigrants and US citizens are the access to private and public health insurance.

Access to Private Health Insurance: Employers provided health insurance for most Americans but not for all immigrants and illegal people. Analyses show that job-based health insurance is offered about 87 percent for White Americans citizens and only 50 percent insurance is offered for Asian, African, and Latino immigrants. Among these immigrants, African-Americans have lowest offering rate. Immigrants are offered lower rate health insurance because of their jobs conditions. They usually work in agriculture, construction, food processing, restaurant and other services jobs. Often those kinds of job don't offer health insurance. Even in the same company while US citizens are offered health insurance, the immigrants are not considered for the insurance.

Access to Public Health Insurance: For the low income people in the United States, Medicaid is the mainstay of health insurance coverage, but unfortunately

all immigrants are not eligible to get Medicaid opportunity. In 1996 the USA passed a Welfare Reform law which prohibited most lawful permanent residents to receive federal Medicaid or SCHIP. Unauthorized immigrants and temporary visa holders are not eligible for Medicaid. Even elderly immigrants are often ineligible for Medicaid because they did not work in the USA for a sufficient number of years. Amongst the adult immigrant population, the insurance coverage gap between immigrant children and citizen children are widening over the past decade (Figure 4). After the 1996 immigrant prohibitions, more immigrant children became uninsured (Ku, Leighton, 2006, September).

Access to Health Care: Uninsured immigrants are often ineligible to pay for the

Figure 4: Changes in Percentage of Low-Income Children (Below 200 Percent of Poverty) Who Are Uninsured, 1995 to 2004



Sources: Author's analysis of March 1996 and 2005 Current Population Surveys

medical care they need. The immigrants are much less likely to use primary medical care, hospital services, emergency services and dental care than citizens. The lack of public health care services force some immigrants to turn to black market medical care, such as unlicensed health care provider who provides health care services and may purchase prescription drugs that have been smuggled into the United States. Some worry that the cost of medical care, especially emergency care, for immigrants is creating excessive financial burden on the nation's health care system. Dr. Sarita Mohanty conducted a study based on data from the late 1990s, and found that per capita medical expenditures for immigrants are about 55 percent lower than US born citizens (Figure 5). Expenditures for uninsured and publicly insured immigrants are also approximately half those of their US-born counterparts.



Figure 5: Average per Capita Annual Medical Expenditures, 1998

Note: Estimates are adjusted for differences in race, insurance, income, etc Sources: Mohanty, et al., 2005, based on Medical Expenditure Panel survey

### Bangladeshi immigrants

Immigration in the United States from Bangladesh grew slowly from the 1970s-1980s. During the early 1990s and the peak of 1991, the number of Bangladeshi immigrants increased and during that period the Bangladeshi population was the fastest growing immigrant among the Asian countries. Under the Diversity Visa program more than five thousand Bangladeshi immigrants are being added to total population each year. Recently the American government has closed this program for the Bangladeshi people. According to the census of 2000, in America total Bangladeshi immigrants were 28,269 and now the number is more than half a million.

The New York City Metropolitan area, including New York City, Patterson and New Jersey is home to the largest Bangladeshi community in America. Chicago, Florida, Texas and Boston City have many Bangladeshi Immigrants. But twothird Bangladeshi immigrants live in the New York City. According to the data, New York City's Bangladeshi population increased by 471 percent from 1990 to 2000

About 85 percent of Bangladeshi New Yorkers are Bangladeshi born and more than three-quarters have come during 1900 to 2000. Almost 31 percent of all Bangladeshi immigrants in New York City live under poverty and 38 percent are children, and 35 percent senior citizens are experiencing poverty- compared with 30 percent of all children and 18 percent of all senior citizens in the New York City. The Bangladeshi immigrant's average household size is 4.2 and they have very limited English proficiency compared to other immigrants (Patel, Viraj, V., Rajpathak, Swapnil&Karasz, Alison, 2012, October).

### Socioeconomic status of Bangladeshi Immigrants

Bangladeshi immigrant's income, occupation and education conditions and how these socioeconomic factors are affecting their health care system are discussed her.

**Income:** Probably Bangladeshi Immigrants have lower per-capita income among all other immigrants in America. Even among the south Asian countries Bangladeshis have lower per-capita income. The data shows that Indian immigrant's per-capita income is \$26,415, Srilankan's per-capita income is \$26,330, Pakistanis' per-capita income is \$17,685 and Bangladeshis' per-capita income is \$13,532 only.



Figure 6: Median house hold income (2010\$)

Source: American Community Survey, 2010

**Occupation:** According to the census, the most common occupations for Bangladeshi immigrants are cashiers, retail workers, taxi driver, food delivery people, floor boy and vehicle operators, all of which are classified as low-wage or working class job or odd job. Very few Bangladeshi immigrants have good job. The main reasons for low-class jobs are Poor, English language proficiency and insufficient skills based education. Most of the Bangladeshis come here without knowing English language. So when they come to America they face severe problem. Among the south Asian countries Bangladeshis have 52 percent English proficiency while Indian's have 23 percent, Srilankan's have 18 percent and Pakistanis have 32 percent only.

**Education:** Education is the main socioeconomic determinant of living standard and it is related to an individual's income and occupation. Bangladeshi immigrants have a lot of barriers to get education in America. Age and finance are their main problem. Most of the Bangladeshis have no family here. They find themselves without a financial safety net or good career opportunities. They survive by themselves. Once they involve with work, they can't go for education. A very small number of Bangladeshi immigrants can earn academic degree in America and get a good job.

Bangladeshi immigrants are facing poverty because they have a low education, a low per-capita income and lower class occupation status. A study shows that Bangladeshis are poorer than Black, White, Latino and other south Asians. The Asian American Federation found that 53.9 percent of Bangladeshis living in New York are poor and it is the highest rate among the City's eight largest Asian Immigrant groups (Figure 7). According to a statistics from 2006 to 2010 the poverty rate for Bangladeshis was nearly double than the Black, White and Hispanic in New York (Weichselbaum, 2012, May 09).



Figure 7: Poverty rates (2010, %)

Sources: American Community Survey, 2010

Poverty is both directly and indirectly related to individual's income, occupation, education and all other socioeconomic factors such as, health, house ownership and culture. Poverty is a trap and it is a cyclical system (Figure 8). Once someone gets in this cycle, there is very little chance to get out of there.



This figure shows that people are in the cycle because they have low income, low education, low level health care and overall low level socioeconomic growth.

In the U.S.A. Bangladeshi immigrants are living inside the poverty cycle. Bangladeshi immigrant's education, income, occupation, health status and home ownership are at low level. An estimate shows that almost half of Bangladeshi immigrants have poor health and about 37 percent suffer from depression.

**Reasons for Poor Health:** As discussed above, Bangladeshi immigrant's lowlevel education, income and occupation status affect their health. This paper however, finds that there are also other factors such as language, income restriction, and lack of sleep, and physical activity and weather, which are responsible as well.

Language: English language proficiency is the common problem for most immigrants in the USA. Many Bangladeshi immigrants do not go to the hospital or American or other doctors where they can get better treatment because of their language problem. They find someone who is their community doctor known as "Bangladeshi Doctor". They choose Bangladeshi doctors because here they can explain their medical problems properly. In this situation over the long period these immigrants are deprived of hospital services and other American doctor's services.

**Income Restriction:** An individual's Income restriction is the main barrier to get health benefit. The US government has set up a law that, if an individual's income is more than \$9000, he or she will not be eligible for health insurance coverage. Bangladeshi immigrants are involved with low class jobs and their average income is \$12,000 to \$15,000. In New York City an individual's minimum yearly expenditure is \$12,000. After spending this amount an individual can't get health

benefit. This author knows many Bangladeshis who are living this City for more than five years but they did not visit even for once doctors, hospitals or any health related service center.

Lack of Sleep: Sleep is an essential function that allows the human body to rejuvenate. According to the Center for Disease Control and Prevention, sleep deprivation can cause health problems like depression, heart disease and cognitive dysfunction. Since Bangladeshi immigrants have low income job, they don't get enough time to sleep. An unauthorized statistics shows that most Bangladeshi immigrants work more than 12 hours per day especially at night time. Besides this, they live in a very poor quality house, like basement and small dark room.

**Physical Activity:** A normal level of physical exertion and exercise is helpful to digestion and the movement of blood in the human body. Inadequate and improper physical exercise can result in low energy and slower blood flow. This can cause loss of appetite, obesity, shortness of breath and many other diseases. Since Bangladeshi immigrants don't get extra time for physical exercise, they suffer from various diseases in the long run.

**Weather:** In America weather is also responsible for the poor health of Bangladeshis. New Bangladeshi immigrants face completely different types of weather. Bangladeshis are used to live under not too cold and not too hot weather. But in New York the weather is very cold for them. Due to this cold weather many Bangladeshis suffer from cold during the year.

**Pathways to solve the socioeconomic disparities**: Income, education and occupation are powerful determinant of health but they don't have direct effect. They serve as proxies for other determinants. Earlier we mentioned that socioeconomic status underlies three determinants, which are responsible for about 80 percent premature mortality. Along with other determinants, behavior and lifestyle, environmental exposure and health care are also factors affecting socioeconomic disparities (Adler, and Newman, 2002, March).

**Environmental Exposure:** The people with low socioeconomic status hierarchy live and work in worse physical environment. Low socioeconomic status people have low quality of housing. They are usually located near highways, industrial areas and toxic waste sites. As a result, children and adults suffer asthma and lack of long term memory.

**Socioeconomic Status and Social Environment:** Social environment is more important than physical environment for individual health status. The socially isolated people have high mortality rate ranging from 1.9 to almost 5 times greater than those that have better social connection.

**Socioeconomic Status and Health Care:** Access to quality of health care varies by socioeconomic status. An individual who has lack of health insurance receives less health care than who has health insurance.

**Socioeconomic Status and Behavior/lifestyle:** Only behaviors factor account for about half of premature mortality. Low socioeconomic status people usually smoke more tobacco and drink bad quality alcohol. Such behaviors and life style affect health status.

**Policies to Solve the Socioeconomic Disparities in Health:** One way to reduce socioeconomic disparities in health is that the government should pay attention to all socioeconomic status components and pathways, which influence health status. Along with improvement of all socioeconomic components, the federal and state governments should consider the following things.

- Cost benefit analysis: Analysis in health care is the analysis of health care input's costs relative to possible outputs? This analysis is used to avoid unexpected expenditures and to get maximum outcome.
- Strong health policy analysis: Strong health policy analysis is needed to understand past policy failures and success and to make a better plan for future policy implementation.
- Improvement of private hospitals and community health centers: Many private hospitals provide treatment for limited diseases for limited people. They should open new departments and use new technology to increase their service level.
- Useful health policy reforms: In USA almost one of every six people has no health insurance. This picture is more acute for the immigrants. Undocumented immigrants have no health coverage at al. The government should adopt useful policy reform to provide health care to all.
- Effective initiative to develop English language skill: Language is one of the barriers for the immigrants to get health care properly. Most of the immigrants have problem with English language. When a patient has this problem he would like to find a doctor in his community or stopping him not to go anywhere. If the government develops more language facility center to reduce language barriers, the health care service will improve.
- Income restriction should be minimum \$25,000: According to the US law an individual with annual income of more than \$9,000 will not be eligible for health insurance. Based on the interview experience this author finds that for a single people at least \$15,000 is needed per year to live in USA. So the government should withdraw this \$9,000 income limit to be eligible for health insurance.

- Develop more physical health center: Physical exercise is very important for human body. An individual can reduce his medical cost by regular exercise. The government should develop more health centers so that the poor immigrants can get this facility.
- Decrease medicine cost: Generally medicine costs are very high in USA compared to other countries. A very few number of immigrants have the ability to purchase medicine without health insurance. The government should take policy to reduce medicine costs and to make sure that all the peoples in the country are getting their medicine.
- Decrease hospital or doctors visit cost: There are many examples in USA that only one visit to the doctor or hospital makes a poor immigrant poorer.
- Decrease medical check-up cost: According to a physician's opinion an individual should check -up his body twice a year even if he has no disease. Regular check- up gives information about human body. People with lower income level never go to hospital for regular check-up because it is always very expensive. By providing free medical check-up for the poor immigrants, the government can reduce health disparities between immigrants and white US citizens.
- Increase government intervention in pharmaceuticals market: Pharmaceuticals industry have extremely monopoly power in USA. They regulate the whole health industry. The US government has very poor regulation on them. Since they have no regulation, they increase medicine price. They even determine which medicines will be covered by health insurance and which will not. Only strong government regulation on them can control the medicine market price.

### Conclusion

The immigrants have socioeconomic disparities in United States and these disparities affect not only immigrant's health but also their life status. To reduce socioeconomic disparities and save every body's life, the government should reform health policies immediately. The US government has already taken initiative to start Affordable Care Act, which is supposed to provide more health services to the lower income people. Though many people are criticizing the bill and questioning how it will help the self-employed people and illegal immigrants who have no health coverage, but this author hopes that the health care bill will bring some sort of good things for the immigrants and will work for the poor people.

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# Empirical Evidence on the Linkages between Environmental Degradation and Poverty in Bangladesh

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Abstract Inspired by the worldwide debate on the issue of environmental degradation, an attempt is made to examine the nexus between environmental degradation and poverty among former districts of Bangladesh. Our empirical findings suggest a positive relationship between poverty and environmental degradation except Chittagong hill tracts and mangrove forest area. It was also observed that environmental degradation is sensitive to economic growth. The successful reduction of poverty in Bangladesh largely depends on both linear and non-linear relation of various climatic and non-climatic factors.

### Introduction

The relationship between poverty, environmental degradation and sustainable development is closely interlinked. It is generally conjectured that poverty is the main cause and effect of environmental degradation in most developing countries that retard them to achieve sustainable development (WCED, 1987; Dasgupta and Mäler, 1996; Sobhee, 2004). The link between poverty and environment has often been mentioned in the 'sustainable development' debate and is seldom

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systematically explored (Lele 1991). The literature that treats the link usually focuses on the 'vicious circle' between poverty and environmental degradation: the circle is Malthusian in inspiration where farmers pushed by population increase and poverty extend cropping onto fragile marginal lands and degrade them. As a result the yield is reduced and this further impoverishes farmers (Dasgupta and Maler 1994; Mink 1993). A new dimension to the link between poverty and environmental degradation was brought out in 1995 when Reardon and Vosti introduced the concept of 'investment poverty' and related the same to other measures of poverty (Reardon and Vosti 1995). The notion of poverty was examined by them in the context of categories of assets held and categories of environment change with particular focus on farm household income generation and investment strategies as determinants of the links. According to them, the strength and direction of the poverty-environment links in rural areas are to differ (even invert) depending on the composition of the assets held by the rural poor and the types of environmental problems they face. People having incomes above an established welfare poverty line still be too poor in key assets and thus overall cash and human resources to be able to make critical investments on soil conservation or follow key land use practices to maintain or enhance their natural resource base. They might thus be better off than the 'welfare poor' but still be 'investment poor'. Finally they argued that the link between poverty and environment in a given setting depend on the level, distribution and type of poverty and environmental problems. Rozelle et. al. (1997) studied the relationship among population, poverty and environmental degradation in China in 1997. They examined the impact on China's land, water, forest and pasture resources and found the government policy to be ineffective in controlling rural resource degradation primarily because of its limited resource and poorly trained personnel. According to the report of Government of China, Ministry of Agriculture, rapidly expanding township and village enterprise sector have been the major sources of water pollution in China (G.O.C 1991). Next to industrial effluents, agricultural chemical runoff and leaching are also causing serious water pollution (Mei, F 1992). Housing investment, a major user of wood products, has been rapidly growing and causing widespread deforestation (World Bank 1992). All these environmental effects on the health and livelihood of the poor are directly or indirectly being felt. Some studies reveal that due to deforestation, agricultural expansion and overgrazing of livestock, there has been widespread destruction of grasslands causing environmental problems (Lieu et al 1991). Soil erosion is also taking place due to deforestation and overgrazing. Mountainous lands, hilly regions and plateaus are most vulnerable to soil erosion. Poorly constructed irrigation system has led to salinity of land in some environments,
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either from inadequate application of water or from sub-standard drainage. Salinity of farmland has caused significant decline in farm productivity and has induced the producers to remove land from production (Huang et al 1994). The net result is the reduction in income earning capability of the farmers which thus has an indirect impact on their health and future investments in agricultural activities.

### **Overview of Environment and Poverty in Bangladesh**

Household Income Expenditure Survey (HIES) was carried out first in Bangladesh in FY1973-74. In subsequent years, a number of HIESs were undertaken; the latest one was conducted by BBS in 2005. HIESs carried out up to FY1991-92 were based on Food Energy Intake (FEI) and Direct Calorie Intake (DCI) methods in order to measure the incidence of income poverty. FEI method computes poverty lines by finding the value of per capita consumption at which a household can be expected to fulfill its calorie requirement. DCI method is used to calculate the incidence of absolute poverty where population or households fall below a threshold calorie intake (2122 kilocalories per person on a daily basis). Similarly, a person having daily calorie intake of less than 1805 kilocalories is considered to be in hard-core poverty. In Household Income Expenditure Survey (HIES) conducted in FY1995-96, the BBS for the first time adopted the Cost of Basic Needs (CBN) method for constructing poverty lines (Table 1). Similarly, in the Household Income and Expenditure Surveys (HIES) of 2000 and 2005, CBN

	Direct Calorie Intake	Food Energy Intake	Cost of Basic Needs
Indicator	Calorie intake	Expenditure (or income)	Expenditure (or income)
Threshold	2,122 kilocalories/ person day	Expenditure level at which household members are expected to reach calorie intake threshold	Expenditure level at which household members are expected to meet basic needs (food and non-food)
Measure	Head-count or other	Head-count or other	Head-count or other
Strengths and weaknesses	Indicator not representative; threshold consistent (for monitoring calorie intake)	Indicator representative; threshold not consistent (for real expenditures)	Indicator representative; threshold consistent (for real expenditures)

 Table 1: Alternative Methods for Measuring Absolute

 Income Poverty in Bangladesh

**Source:** World Bank 2002, A Source Book for Poverty Reduction Strategies (Vol. 1) cited from Bangladesh Economic Review 2008

method was used. With this method, an absolute poverty line is defined as the value of consumption needed to satisfy minimum subsistence needs (food as well as non-food consumption) (Bangladesh Economic Review 2008)

## **Trends of Poverty**

Poverty is divided into two categories, such as (1) income poverty and (2) human poverty. The report of HIES-2005 reveals that at the national level, incidence of poverty registered a declining trend in 2005 as compared to 1991-92 based on CBN method. The incidence of poverty at the national level declined from 58.8 percent in 1991-92 to 40.0 percent in 2005 based on the upper poverty line (Table 2). During this period, the compound poverty reduction rate per year is recorded at 1.8%. But the rate of reduction in urban area (yearly compound rate 2.2 percent) is faster than that in the rural area. On the other hand, during 2000 to 2005, income poverty also declined from 48.9 percent to 40.0 percent and the compound reduction rate is 3.9 percent. This time also reduction rate is faster in the urban area (yearly 4.2 percent) than that in the rural area (3.5 percent). Between 2000 and 2005, the depth (measured by poverty gap) and severity

	2005 (%)	2000 (%)	Annual Change (%) (2000-2005)	1991-92 (%)	Annual Change (%) (1991/92- 2005)		
Head Count Index							
National	40.4	48.9	-3.9	58.8	-1.8		
Urban	28.4	35.2	-4.2	44.9	-2.2		
Rural	43.8	52.3	-3.5	61.2	-1.6		
		Pove	rty Gap				
National	9.0	12.8	-6.80	17.2	-2.9		
Urban	6.5	9.1	-6.51	12.0	-2.5		
Rural	9.8	13.7	-6.48	18.1	-2.8		
Squared Poverty Gap							
National	2.9	4.6	-8.81	6.8	-3.8		
Urban	2.1	3.3	-8.64	4.4	-2.7		
Rural	3.1	4.9	-8.75	7.2	-3.8		

Table 2: Trends of Poverty based on CBN Method

Source: BBS, HIES-2005 cited from Bangladesh Economic Review 2008

(measured by squared poverty gap) of poverty declined simultaneously both in urban and rural areas. It is notable that between FY92 and FY01, reduction rate of poverty was faster in the rural area than that in the urban area (Bangladesh Economic Review, 2008).

#### The Major Environmental Problems in Bangladesh

Bangladesh suffers from a range of environmental problems, arising from drought, flood and other natural hazards because of its geographical location. Frequencies of hazards are on the increase day by day. The quality of soil has deteriorated due to needless use of agrochemicals, unplanned land use, undesirable encroachment on forest areas for agriculture and settlements and indiscriminate disposal of hazardous industrial wastes. Unplanned land use and intrusion of saline water are causing degradation of soil in the coastal area. The surface water of the country is polluted through capricious disposal of untreated industrial effluents and municipal waste water, runoff pollution from chemical fertilizers and pesticides and oil and lubes spillage in the coastal area from the operation of sea and river ports and ship wreckage. The arsenic concentration in the ground water in many areas is a major problem in Bangladesh now. The problem is acute in the Southeast, South Central (the northern part only), and Southwest regions where shallow tube wells are used for extracting groundwater from 10 m to 100 m depth. This creates problems in getting safe drinking water. Bangladesh has 57 trans-boundary rivers, of which 54 are shared with India and 3 with Myanmar. A significant quantity of water flow is withdrawn and diverted upstream by neighboring countries for irrigation and other purposes and thereby reducing normal flow of water. The Farakka Barrage on the river Ganges is a notable example. Desertification prevails in some Northwestern areas of Bangladesh due to withdrawal and diversion of upstream water in the dry season by India. Besides, the proposed inter-basin river link project of India, if implemented, the annual water flow of Bangladesh will drastically fall, which will have profound negative impact on economy, society and environment of Bangladesh.

Air pollution is one of the man-made environmental disasters that are taking place all over the world. There are two major sources of air pollution in Bangladesh, namely vehicular emissions and industrial emissions, which are mainly concentrated in the cities. There are also numerous brick-making kilns working in dry season all over Bangladesh, which is another source of air pollution. Almost all of these kilns use coal and wood as their source of energy, resulting in the emissions of sulfur-di-oxide and volatile organic compounds. An emerging issue of great concern in the cities and towns is the high concentration of lead in the air from vehicular exhausts. The depletion of biodiversity is the result of various kinds of human interventions that impinge on it through destruction and degradation of land, forest and aquatic habitats. These activities encompass the sectors of agriculture, forestry, fisheries, urbanization, industry, transport, tourism, energy, chemicals and minerals etc. In the fisheries sector, shrimp cultivation has become a major concern during the past decade. It has caused serious environmental damage that has harmed fish and other aquatic biodiversity significantly (Bangladesh Economic Review 2008).

## Methodology to calculate environmental degradation

Using the calorie intake method, we define poor whose per capita intake is below 1822 calories per day. To measure environmental degradation, we consider two factors: (i) percentage of area under forest and (ii) average annual rainfall. It is assumed that the higher the rainfall and higher the forest cover, the lower the environmental vulnerability. Data on poverty and environmental indicators for the period 1981 to 2000 are explored from different Statistical Yearbook of Bangladesh Bureau of Statistics (BBS) to construct the corresponding indices.

To make a meaningful comparison of different former districts of Bangladesh in terms of indicators of poverty, forest cover and rainfall, the following formula are used to measure the degradation index of the indicator variables:

 $\begin{array}{l} (PINDEX)ij = \{Max \ (Xij) - Xij\} / \{Max \ (Xij) - \{Min \ (Xij)\} \\ (FINDEX)ij = 1 - \{Max \ (Xij) - Xij\} / \{Max \ (Xij) - \{Min \ (Xij)\} \\ (RINDEX)ij = 1 - \{Max \ (Xij) - Xij\} / \{Max \ (Xij) - \{Min \ (Xij)\} \\ \end{array}$ 

Where, PINDEX, FINDEX and RINDEX represent poverty, forest cover and rainfall degradation indices of the i th variable and the j th district respectively. Then environmental degradation index {EINDEX=½(FINDEX+RINDEX)} is constructed by taking an arithmetic average of the individual index of forest cover and normal rainfall. Lastly an average composite index {PEINDEX=½ (PINDEX+EINDEX)} is constructed using both poverty and environment indices for the purpose of comparison across districts and over time.

We use environmental degradation and different indices which are related to poverty and environment. Degradation usually means that carrying capacity is reduced by some natural or human phenomenon. PINDEX, an index for poverty is a relative term which measures incidence of poverty among different former districts. RINDEX, FINDEX stand for rainfall index and forest cover index, respectively, which are also relative terms to measure incidence. We also include EINDEX and PEINDEX in our measurement. EINDEX stands for environmental index and PEINDEX stands for poverty and environmental index.

#### Findings

Bangladesh is one of the poorest countries in the world. Since its independence, Bangladesh is trying hard to alleviate poverty. Analysis of data on poverty in Bangladesh revealsd that on an average 36.75 per cent of people were below poverty line in 1984 (Table-3). At that time poverty was severe and people often struggled for their basic needs. Due to various policy initiatives of the Government it was reduced to 28 per cent in 1992. In that time period new window opened in Bangladesh like export promotion thus boosting industrial growth. And, in 2000 poverty rate further fell to 20 percent. During that period

Table 3: Poverty and Environmental indicators of Bangladesh

Year/Subject	1984	1986	1989	1992	1996	2000
Poor People (%)	36.75	26.86	28.36	28	25.1	20
Forest Cover (%)	14.19	14.28	12.27	12.75	14.5	16.64
Rainfall(mm)	2690.55	2627.11	2234.86	1937.27	2414.41	2478.91

Source: Calculated By Authors

Bangladesh showed nice progress in poverty alleviation. Different NGO's expanded micro credit program in rural area which helped poor people to be productive. Forest cover Data reveals that it witnessed a marginal decrease in the period from 1984 to 1992 (Table-3).

The main causes of deforestation were need of fire woods and rapid population increase. In 1983 the highest forest cover was in Khulna and the lowest cover was in Comilla. It was 1421 thousand acre in Khulna and 3 thousand acre in Comilla. And total forest cover of Bangladesh in 1983 was 5298 acres where as in 2003 it stood at 6418 thousand acres. At that period Government took several measures to increase forest cover. Especially community forestation played a vital role for forestation. For saving sea coast from cyclone Government as well as different NGOs initiated forestation programs in coastal districts. So the forest cover in coastal districts of Chittagong, Khulna, Patuakhali and Barisal increased over the period 1984 to 2000. Average annual rainfall was maximum (4241mm) in Sylhet and minimum (1752mm) in Jessore in 1981. The situation changed a little after 20 years. In 2001 the highest rainfall was in Sylhet where as minimum rainfall was

		Tabi	le 4: Indice	es of pover	rty and en	vironment	al degrada	tion		
Former District					Referenc	e Year				
			1981					2001		
	PINDEX	EINDEX	KINDEX	EINDEX	X beinde	MDEX	KHORX	KINDEX	EINDEX	X bEINDE
Bandarban	I	0.739	0.498	.619	0.809	0.99	0.56	1	0.78	0.885
Chittagong	0.414	0.373	0.337	.355	0.385	0.541	0.546	0.557	0.552	0.546
Chittagong HT	0.951	0.282	0.506	.394	0.673	1	0.388	0.625	0.507	0.753
Comilla	0.195	0	0.222	III.	0.153	0.435	0	0.246	0.123	0.279
Noakhali	0.563	0.037	0.69	.364	0.463	0.715	0.317	0.518	0.418	0.566
Sylhet	0.342	0.116	1	.558	0.45	0.55	0.138	0.897	0.518	0.534
Dhaka	0	0.04	0.168	.104	0.052	0	0.044	0.202	0.123	0.062
Faridpur	0.449		0.023	.012	0.23	0.664		0.106	0.053	0.359
Jamalpur	0.715	0.02	.095	.058	0.386	0.845	0.02	0.202	0.111	0.478
Mymensingh	0.233	0.018	0.095	.057	0.145	0.465	0.025	0.216	0.121	0.293
Tangail	0.727	0.075	.164	.12	0.423	0.846	0.085	0.216	0.151	0.498
Barisal	0.461	0.023	0.229	.126	0.294	0.663	0.256	0.202	0.229	0.446
Jessore	0.538		0	0	0.269	0.704		.268	0.134	0.419
Khulna	0.501	1	0.092	.546	0.524	0.683	1	0.173	0.587	0.635
Kushtia	0.746		0.09	.045	0.396	0.861		0.268	0.134	0.498
Patuakhali	0.799	0.028	0.501	.265	0.532	0.921	0.195	0.373	0.284	0.603
Bogra	0.693		0.002	100.	0.347	0.808	0.055	0.2	0.128	0.468
Dinajpur	0.637	0.016	0.084	.05	0.344	0.77	0.016	0.318	0.167	0.469
Pabna	0.61		0.201	.101	0.355	0.753		0	0	0.377
Rajshahi	0.388	0.002	0.154	.078	0.233	0.563	0.067	0.12	0.094	0.328
Rangpur	0.24	0.002	0.279	.141	0.190	0.458	0.004	0.434	0.219	0.339
Bangladesh	0.5334	0.1732	.7458	.4595	0.496	0.662	0.213	0.651	0.432	0.547
Source: Calculatea	By Authors									

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in Rajshahi. However, many of former districts like Chittagong, Comilla, Dhaka, Khulna, Patuakhali, Rajshahi and Faridpur experienced less rainfall year after year. Some of the Districts that experienced moderate increase in rainfall were Chittagong HT, Bogra, Dinajpur, and Rangpur. Poverty and environmental vulnerability indices are measured in 0-1 scale and presented in table 4.

Higher the values of poverty index the lower the poverty level; and also higher the values of forest cover and rainfall indices lower the forest cover and rainfall and thus higher the vulnerability of environment on account of these indicators. Analysis of these indices revealed that there was former District-wise variation of the incidence of poverty, forest area and rainfall (Table-5). These individual

INDEX	MAGNITUDE	FORMER DISTRICTS
POVERTY	LOW (PINDEX?0.7)	Bandarban, Chittagong hilltracts, Jamalpur, Tangail,
		Kushtia, Patuakhali, Bogra, Dinajpur
	MODERATE	Noaakhali, Faridpur, Rajshahi, Pabna, Barisal,
	(0.5?PINDEX<0.7)	Khulna, Sylhet
	HIGH (PINDEX<0.5)	Chittagong, Comilla, Dhaka, Mymesingh, Rangpur
FOREST	HIGH (FINDEX?O.7)	Khulna, Bandarban
COVER	MODERATE (0.5?	
	FINDEX <0.7)	
	LOW (FINDEX <0.5)	Chittagong hilltracts, Jamalpur , Tangail, Kushtia,
		Patuakhali, Bogra, Dinajpur, Chittagong, Comilla,
		Dhaka, Mymesingh, Rangpur, Noaakhali, Faridpur,
		Rajshahi, Pabna, Barisal, Sylhet
RAINFALL	HIGH (RINDEX? O.7)	Bandarban, Chittagong hilltracts, Sylhet
	MODERATE (0.5?	Chittagong, Noakhali
	RINDEX <0.7)	
	LOW (RINDEX <0.5)	Jamalpur , Tangail, Kushtia, Patuakhali, Bogra,
		Dinajpur, Comilla, Dhaka, Mymesingh, Rangpur,
		Faridpur, Rajshahi, Pabna, Barisal, Jessore, Khulna

Table 5: Index wise groupings of districts

indices also changed in magnitude over time from 1981 to 2001. Particularly, incidence of poverty index changed to a large extent in comparison to other two indices. But one of the striking features about these indices was that there was mixed findings of various indicators in different Districts. Some districts like Chittagong, Comilla, Dhaka, Mymesingh and Rangpur has high poverty indices with low forest cover and rainfall indices.

One important reason could be that we depended on cross section data from secondary sources across the former District which was not always natural

Year	PINDEX	RINDEX	FINDEX	EINDEX	PEINDEX
1981	.5334	.2542	.1197	.1869	.3602
1982	.5957	.3047	.1225	.2136	.4047
1983	.5959	.3184	.1257	.221	.4089
1984	.596	.3235	.1731	.2483	.4221
1985	.5959	.3428	.1869	.2648	.4303
1986	.5962	.3628	.1789	.2708	.4335
1987	.5957	.4242	.1622	.2932	.4445
1988	.5959	.3376	.1593	.2485	.4222
1989	.5958	.2243	.1575	.1909	.3934
1990	.5960	.3491	.1483	.2487	.4224
1991	.6498	.3666	.1443	.2555	.453
1992	.6535	.3908	.1425	.2667	.4601
1993	.6441	.4164	.1426	.2795	.4618
1994	.6461	.3051	.1585	.2318	.4389
1995	.6426	.4215	.1496	.2855	.4641
1996	.6422	.3611	.164	.2625	.4524
1997	.6428	.3909	.172	.2815	.4622
1998	.6436	.3965	.1995	.298	.4708
1999	.6623	.2901	.2132	.2516	.4569
2000	.6622	.2461	.1268	.2315	.4468

Table 6: Indices of Bangladesh

Source: Calculated By Authors

geographical regions. Another reason lies in the fact of externality or spillover effect of improvement or deterioration of environment of one District on another. Again Bangladesh is a small country and hence environmental quality is more or less equal all over the country. In the case of Bangladesh as a whole, we see both PEINDEX and EINDEX rise over time on an average (Table 6).

It indicates that poverty condition and environment quality improve simultaneously. Composite index of poverty and environmental degradation revealed that the District which was hardest hit in 1981(PEINDEX > 0.7) was Bandarban. The least affected Districts (PEINDEX < 0.5) were Chittagong, Comilla, Noakhali, Sylhet, Dhaka, Faridpur, Jamalpur Mymensingh, Tangail, Barisal, Jessore, Kustia, Bogra, Dinajpur and Pabna. The rest of the distrists were moderately hit (0.5 ?PEINDEX< 0.7). After a period of 20 years the situations, of course, changed in many respects. The District such as Bandarban which was in the worst affected category in 1981 further deteriorated in 2001. All other least affected Districts during 1981 also deteriorated in 2001. From Table 7 we see that both the GDP growth and income inequality rose over the period of 1981 to 2001. At the same time the value of environmental index also rose to some extent. It means that the overall environmental condition improved over that time. Though the income inequality rose by 0.66% over this 20 years, the economic development also occurred significantly (at an average growth rate of 4.31%). Thus the overall environment condition improved especially in the last decade of the last century. Forest cover rose by 20% in 2001 to 6366 thousand acres from 5298 thousand acres in 1981 and rain fall also rose slightly, indicating that economic improvement may impact positively on environmental situation.

Year	EINDEX	INCOME	GDP GROWTH
		INEQUALITY	(%)
1981	.1869	34.90	3.8
1982	.2136	34.94	2.4
1983	.221	34.97	4.0
1984	.2483	35.01	5.2
1985	.2648	35.04	3.2
1986	.2708	35.07	4.2
1987	.2932	35.11	3.7
1988	.2485	35.15	2.2
1989	.1909	35.18	2.6
1990	.2487	35.22	5.9
1991	.2555	35.25	3.3
1992	.2667	35.29	5.0
1993	.2795	35.32	4.6
1994	.2318	35.35	4.1
1995	.2855	35.39	4.9
1996	.2625	35.42	4.6
1997	.2815	35.46	5.4
1998	.298	35.49	5.2
1999	.2516	35.53	4.9
2000	.2315	35.56	5.9
2001	.2678	35.60	5.3

Table 7: Environmental index, income inequality, GDP growth of Bangladesh

Source: Calculated By Authors Ave. 4.31

Environmental degradation occurs for various reasons. Such, as higher deforestation results in lower annual average rainfall and it creates higher temperature, which is due to the climate change. This results in the rise in sea level and it creates overall environmental degradation.



On the other hand, the urbanization results in the rise in per capita income through industrialization, which creates substantial income inequality in the rural and urban areas. Modernization increases the growth rate of an economy but at the cost of environmental degradation. It is generally conjectured that higher environmental degradation will inevitably increase income inequality. Our findings also support the above proposition.

## Conclusion

Bangladesh as a whole witnessed a significant progress in poverty alleviation. However, the progress made was uneven across the Districts. Poverty indices have decreased all over the country except Dhaka and Bandarban. But forest cover and rainfall indices give us a mixed picture. Forest cover indices rise in Chittagong, Barisal, Sylhet, Tangail and Patuakhali. But indices fall in Bandarban and Bogra. Rain fall indices rise in Bandarban, Chittagong, Comilla, Dhaka, Faridpur but fall in Noakhali, Sylhet, and Barisal. We have found a definite relationship between poverty and environment. In our research, we have seen that when poverty decreases, the environmental degradation also decreases. So we should emphasise on poverty alleviation in Bangladesh. Mohammad Abdul Munim Joarder et.al.: Empirical Evidence on the Linkages

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