

BANGLADESH JOURNAL OF POLITICAL ECONOMY

VOLUME 29 NUMBER 2
DECEMBER 2013

Jamaluddin Ahmed

Value Reporting on Micro and Macro
Perspective-Way Forward

Md. Mostafizur Rahman Sarder, Md. Golzare Nabi

Dynamics of Micro Finance Programs in Poverty
Alleviation in Bangladesh: Present Status Challenges
and Policy Actions

Imam Abu Sayed

Debt Management and OMO of Bangladesh Bank

Jamaluddin Ahmed

Transparency in the Financial Reporting of Central
Banks : Rationale and Comparative Practices

Imam Abu Sayed

Determination of Near Term Scenario of Monetary
Aggregates of Bangladesh

Mihir Kumar Roy, Sazzad Hossain

A Relational Study on Banks' Overall Service Quality,
Product Quality, Corporate Social Performance and
Bank Reputation in the Context of Private
Commercial Banks in Bangladesh

Md. Main Uddin

Agricultural and Rural Financing Policy and
Programme for The Banks in Bangladesh

Umme Habiba Rahman

The Situation of Female Child Domestic Servants in
Urban Areas of Bangladesh: A Case Study

Anisul M. Islam, Muhammad Mahboob Ali, Chu V. Nguyen

Money and Prices in Bangladesh: Some Preliminary
Analysis

Md. Abdus Sobhan

Challenges in Microfinance in Agriculture and in
Low Population Density Areas: A Note



Bangladesh Journal of Political Economy

VOLUME 29, NUMBER 2, DECEMBER 2013

Abul Barkat

Editor

Bangladesh Economic Association

4/C, Eskaton Garden Road, Dhaka-1000

Phone : 9345996, Fax : 880-2-9345996

Website : bea-bd.org

E-mail : bea.dhaka@gmail.com

বাংলাদেশ জার্নাল অফ পলিটিক্যাল ইকনমি

উনত্রিংশ খণ্ড, সংখ্যা ২, ডিসেম্বর ২০১৩

সম্পাদক

ড. আবুল বারকাত

সম্পাদনা উপদেষ্টা কমিটি

অধ্যাপক ড. অমর্ত্য সেন

অধ্যাপক ড. নুরুল ইসলাম

অধ্যাপক ড. মোশাররফ হোসেন

অধ্যাপক রেহমান সোবহান

ড. কাজী খলীকুজ্জমান আহমদ

সম্পাদনা পরিষদ

অধ্যাপক ড. আবুল বারকাত

অধ্যাপক ড. মোঃ আলী আশরাফ

অধ্যাপক ড. মোঃ মোয়াজ্জেম হোসেন খান

অধ্যাপক ড. তৌফিক আহমদ চৌধুরী

অধ্যাপক ড. সেলিম রায়হান

অধ্যাপক হান্নানা বেগম

অধ্যাপক ড. মোঃ তোফাজ্জল হোসেন মিয়া

কার্যকরী সম্পাদক

সদস্য, সম্পাদনা পরিষদ

সদস্য, সম্পাদনা পরিষদ

সদস্য, সম্পাদনা পরিষদ

সদস্য, সম্পাদনা পরিষদ

সদস্য, সম্পাদনা পরিষদ

সদস্য, সম্পাদনা পরিষদ

বাংলাদেশ অর্থনীতি সমিতি

৪/সি, ইস্কাটন গার্ডেন রোড, ঢাকা-১০০০

টেলিফোন : ৯৩৪৫৯৯৬, ফ্যাক্স : ৮৮০-২-৯৩৪৫৯৯৬

ওয়েব সাইট : bea-bd.org

ই-মেইল : bea.dhaka@gmail.com

Bangladesh Journal of Political Economy

VOLUME 29, NUMBER 2, DECEMBER 2013

Editor

Dr. Abul Barkat

Editorial Advisory Board

Professor Amartya Sen

Professor Nurul Islam

Professor Mosharaff Hossain

Professor Rehman Sobhan

Dr. Qazi Kholiquzzaman Ahmad

Editorial Board

Professor Dr. Abul Barkat	Editor
Professor Dr. M. Ali Ashraf	Member
Professor Dr. M. Moazzem Hossain Khan	Member
Professor Dr. Toufic Ahmad Choudhury	Member
Professor Dr. Selim Raihan	Member
Professor Hannana Begum	Member
Professor Dr. Md. Tofazzal Hossain Miah	Member

Bangladesh Economic Association

BEA Executive Committee 2012-2014

- Bangladesh Journal of Political Economy is published by the Bangladesh Economic Association.
- No responsibility for the views expressed by the authors of articles published in the Bangladesh Journal of Political Economy is assumed by the Editors or the Publisher.
- Bangladesh Economic Association gratefully acknowledges the financial assistance provided by the Government of the People's Republic of Bangladesh towards publication of this volume.
- The price of this volume is Tk. 200, US \$ 15 (foreign). Subscription may be sent to the Bangladesh Journal of Political Economy, c/o, Bangladesh Economic Association, 4/C, Eskaton Garden Road, Dhaka-1000. Telephone: 9345996. Website : bea-bd.org E-mail : bea.dhaka@gmail.com Members and students certified by their concerned respective institutions (college, university departments) may obtain the Journal at 50% discount.

Cover design by:
Syed Asrarul Haque (Shopen)

Printed by:
Agami Printing & Publishing Co.
27 Babupura, Nilkhet,
Dhaka-1205, Phone: 01971 118 243

President

Abul Barkat

Vice- Presidents

M.A. Sattar Bhuyan
Jamaluddin Ahmed
Shamima Akhtar
Md. Ali Asraf
M. Moazzem Hossain Khan

General Secretary

Toufic Ahmad Choudhury

Treasurer

Masih Malik Chowdhury

Joint Secretary

Selim Raihan
Badrul Munir

Assistant Secretary

Shah Md. Ahsan Habib
Md. Sadiqur Rahman Bhuiyan
Md. Mozammel Haque
Md. Main Uddin
Asjadul Kibria

Members

Khondkar Ibrahim Khaled
Hannana Begum
Monju Ara Begum
A.Z. M. Saleh
Md. Aynul Islam
Mir Hasan Mohammad Zahid
Shafique Uz Zaman
Md. Liakat Hossain Moral
Md. Mostafizur Rahman Sarder
Mahtab Ali Rashedi
Md. Amir Hussain
Md. Tofazzal Hossain Miah
Monirul Islam
Meherunnesa

Editor's Note

This volume (Vol. 29, No. 2) 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 and Prof. Toufic Ahmad Choudhury, who, as members of the Editorial board of the Journal, shouldered much more responsibilities than usual for a member.



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

বাংলাদেশ অর্থনীতি সমিতির যান্নাসিক 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।
- ৪। ক) সমিতির দ্বিবার্ষিক কনফারেন্সে উপস্থাপিত প্রবন্ধগুলো referral প্রক্রিয়ার মাধ্যমে জার্নালের জন্য বিবেচিত হবে।
খ) বিভিন্ন সময়ে সমিতি কর্তৃক আয়োজিত সেমিনারে পঠিত আমন্ত্রিত প্রবন্ধসমূহ জার্নালের সম্পাদনা পরিষদের অনুমোদনক্রমে জার্নালে প্রকাশ করা যেতে পারে।
- 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 এতদসঙ্গে 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।
খ) প্রথম proof প্রেস দেখবে, পরবর্তীতে softcopy তে প্রবন্ধকার ফাইনাল proof দেখে দেবেন।

Bangladesh Journal of Political Economy
VOLUME 29, NUMBER 2, DECEMBER 2013

Contents

Value Reporting on Micro and Macro Perspective-Way Forward <i>Jamaluddin Ahmed</i>	1
Dynamics of Micro Finance Programs in Poverty Alleviation in Bangladesh: Present Status Challenges and Policy Actions <i>Md. Mostafizur Rahman Sarder</i> <i>Md. Golzare Nabi</i>	47
Debt Management and OMO of Bangladesh Bank <i>Imam Abu Sayed</i>	69
Transparency in the Financial Reporting of Central Banks : <i>Rationale and Comparative Practices</i> <i>Jamaluddin Ahmed</i>	95
Determination of Near Term Scenario of Monetary Aggregates of Bangladesh <i>Imam Abu Sayed</i>	245
A Relational Study on Banks' Overall Service Quality, Product Quality, Corporate Social Performance and Bank Reputation in the Context of Private Commercial Banks in Bangladesh <i>Mihir Kumar Roy</i> <i>Sazzad Hossain</i>	271
Agricultural and Rural Financing Policy and Programme for The Banks in Bangladesh <i>Md. Main Uddin</i>	291
The Situation of Female Child Domestic Servants in Urban Areas of Bangladesh: A Case Study <i>Umme Habiba Rahman</i>	299

Money and Prices in Bangladesh: Some Preliminary Analysis	311
<i>Anisul M. Islam</i>	
<i>Muhammad Mahboob Ali</i>	
<i>Chu V. Nguyen</i>	
Challenges in Microfinance in Agriculture and in Low Population Density Areas: A Note	323
<i>Md. Abdus Sobhan</i>	

Value Reporting on Micro and Macro Perspective-Way Forward

JAMALUDDIN AHMED*

Value Paradox as a problem of capture: Accounting for intangible assets within the firm confronts the Value Paradox in terms of a problem of capture and accounting. Is it possible to capture the value of such assets, and if so, how? Is it desirable to measure their value? Who actually requires such measurement, and to what end? Once again, the Value Paradox is this: intangible assets have evident value, yet this resists adequate capture. This paradox cannot be overcome, yet when we try to identify ways of managing it more effectively we note a series of methodological difficulties, as well as a number of perspectival ones. Ricardo Blaug and Rohit Lekhi (2009): A Research Report for The Work Foundation's Knowledge Economy Programme Research Republic LLP

Introduction

Merely thinking about transparency in financial reporting strikes fear into the heart of many a CEO. After all, public revelations call up the bugaboos of accountability and competitive exposure. But that is yesterday's thinking. In today's marketplace, greater transparency and better disclosure are keys in curbing the wild fluctuations and volatility of the world's stock markets, and ultimately, in increasing shareholder value. But there are certain things wrong with today's financial reporting. Instead of traditional financial statements prepared under generally accepted accounting principles, with independent audit reviews for accuracy and compliance with accounting standards, we now have a myriad of forward-looking and interpretive information without consistency of

* Author Jamaluddin Ahmed PhD FCA is a Director of Emerging Credit Rating Limited and a Vice-President of Bangladesh Economic Association.

format and often, objectivity. What's more, traditional corporate reporting practices don't capture relevant market information and the non-financial measures that drive value. Today, financial reporting represents a shrinking percentage of the information that the market considers important. In fact, the flow of information has become entertainment with shows and networks devoted to "the market." From early morning to late evening there is a constant flow of information that, regardless of its reliability, can greatly affect the short-term fortunes of a particular company or market segment.

The case for Value Reporting

It is established that traditional accounting and reporting models are inadequate in providing a full picture of corporate health, then companies need to shift the focus of their reporting. They need to supplement historic financial information with more information about value-building activities and non-financial measures. The big challenge for every company is the development of reliable and valid measurement methodologies for value-relevant, nonfinancial performance measures that have predictive value – measures that are an indication of how much shareholder value will be generated in the future. The Value-Reporting model is about broadening corporate reporting to have companies identify and meet analysts' and investors' needs for relevant information about value drivers, intangible assets and estimated future cash flows. Many companies have already started in this direction with new internal metrics. The use of the Balanced Scorecard approach, for example, is a step in the right direction but it is only a first step. A great deal more is required. The reality is that relatively little has been done to systematically address either the need or the process for providing information the market wants and needs to know.

The problem is that investors can't value what they don't know. They don't have the information to see the business as management sees it. They don't see the value of R & D, brand names, market share, employee satisfaction, customer retention and the intellectual capital of the business. Although companies generally do have a wealth of non-financial data that identifies and supports value, value reporting is not as straightforward as financial reporting. Whereas it's easy to report earnings-per-share, it's more difficult to crisply and objectively report value drivers like customer satisfaction, brand recognition and market share. The good news is that analysts, investors and corporate executives agree about the kinds of information that the market needs to accurately value companies, although the order of importance varies somewhat.

Each industry has different business drivers that help drive value creation. For example, the top ten list of relevant value drivers in the high-tech industry includes just three financial measures: earnings, cash flow and gross margins. Of the nonfinancial factors, three measures, strategic direction, quality/experience of the management team and speed to market, come from internal company data. The final four factors, competitive landscape, market size, market growth and market share require data that are not typically captured by internal systems.

Specific industry drivers might also involve capacity-utilisation such as rooms-occupied in the hotel or cruise ship industry, or seats-occupied on airlines and at entertainment events. They may involve productivity metrics in the professional services industry such as number of charged hours or rate per charged hour. While each industry tends to have specific drivers, each company within the industry may emphasize and focus differently on these value drivers.

Objective and structure of the paper

This paper discusses on the aspects of value reporting and a way forward for it. In doing so this paper evaluates the existing literature on value reporting to identify the gap between the existing practice and stakeholder expectation. Given the objective, this paper discusses on the rationale of value reporting. In particular, it evaluates reporting on Earned value, Fair value, Embedded value, Enhancing audit report value and identified limitation thereof, Value addition reporting and its rationale, reporting value of acquired and intangibles, macroeconomic value reporting, corporate value creation, value of integrated reporting, Grant Thornton recommendation on enhancing value of audit report and a framework for corporate reporting. Finally, summary and recommendations.

1. Earned Value Reporting

This section reviews the origins and concepts of Earned Value, followed by its application in traditional projects. It then investigates the application of Earned Value Management to Agile software projects. Historically, Earned Value is a project management technique to measure, at a specific date, the progress and performance of a project against the plan, and to estimate future performance. Earned Value considers 3 dimensions: 1) planned expenditures, 2) actual expenditures, and 3) budgeted expenditures for actual work accomplished. This provides a superior view into the project state than only looking at the first 2 dimensions. The concept of Earned Value began in the 1890's as the early industrial engineers measured performance in American factories. They defined a "cost variance" to relate "earned standards" against "actual expenses" to

determine performance. It was only in 1962 that Earned Value was formally introduced on projects by the US Navy, as part of the development of the PERT/Cost methodology. In 1996, a new set of criteria were produced to encourage adoption in the private industry, by making the criteria more 'user friendly'. The National Defense Industrial Association (NDIA) developed these 32 criteria and named it the Earned Value Management System (EVMS) criteria, currently embodied in ANSI/EIA

Finally, the Project Management Body of Knowledge (PMBOK), developed by the Project Management Institute, recommends utilizing a similar set of Earned Value criteria, as part of Project Cost and Project Communications Management (Performance Reporting).

2. Fair Value Reporting

The new fair value hierarchy and related reporting disclosures had, and still have, the financial industry up in arms. Steps have been taken in order to align industry needs with FASB requirements, yet many questions still remain unanswered. Congress' concern of fair value reporting may insinuate that "fair value accounting may be less effective than historical cost accounting" which "is usually framed by the issue of relevance versus reliability" (Trussel & Rose 2009). Advocates of fair value accounting argue that current market measurements present figures that are more relevant than those of historical cost. Because reported amounts are more current, "investors and other decision makers can exercise better market discipline and corrective actions regarding a company's decisions" (Trussel & Rose 2009). Conversely, proponents of historical cost accounting dispute the reliability of fair value accounting, claiming that "fair value accounting leads to excessive volatility and short-term fluctuations that don't reflect the value at maturity and don't represent the fundamentals of the underlying financial assets and liabilities" (Trussel & Rose 2009).

When reporting the assets and liabilities of a company on a balance sheet, it is crucial that all amounts be accurate and timely. These two qualities are what SFAS 157 strive to improve. Incorrect asset and liability values not only reflect a faulty balance sheet, but they also skew the results of many financial ratios that analysts use in comparing organizations. By requiring companies to report assets and liabilities at Level 1, Level 2, or Level 3, using the various market inputs, comparability and consistency are increased by providing more detailed information in the financial statement footnotes without altering the balance sheet itself. Consistency of financial statements translates into reliability, which is a

crucial factor not only for the reporting unit, but for financial statement users, as well.

The continuous mayhem that currently exists within the financial markets today has been blamed on a number of factors, however, none more than that of fair value accounting. Fair value accounting is the reporting of assets and/or liabilities at the (fair) value for which they would sell in an active market. The idea of fair value reporting is not a new concept to the accounting profession. In fact, fair value practices have been in place for quite some time. Trading securities, for instance, have long been measured on an entity's balance sheet at their fair market value. Yet, what has changed is the recent turmoil within financial markets, which created a panic and caused a slowdown in market transaction activity. Very rarely in the past have accounting procedures received such harsh scrutiny from such a varied group of parties, which begs the question, if nothing has truly changed, what is all the fuss about? A large portion of the talk surrounding fair value accounting has "raised the temperature of the discussion while shedding very little light on the issues" (King 2009). The overall problem seems to be that reporting techniques have not changed, but markets that were once active where assets and liabilities were traded at easily identifiable fair values have now become inactive, posing significant valuation issues for companies that hold complex assets and liabilities. It has been argued that the amounts companies are required to report for certain items are not reflective of their true economic value; but, if the market the item is trading within is distressed, shouldn't that be reflected accurately within the financial statements? Strong challengers of fair value accounting boast that "if we do not halt the insanity of forcing financial firms to mark assets to a nonexistent market rather than their realistic economic value, the cancer will keep spreading and will plunge the world into very difficult economic times for years to come" (Isaac 2009). However, the goal of the newly enacted fair value reporting requirements is to increase the overall transparency and accuracy of financial statements, and by these accounts, it seems to be doing just that. Proponents of the new standard agree: "...those who blame fair-value accounting for the current crisis are guilty of the financial equivalent of shooting the messenger. Fair value does not make markets more volatile; it just makes the risk profile more transparent. We should be pointing fingers at those at Lehman Brothers, AIG, Fannie Mae, Freddie Mac and other institutions who made poor investment and strategic decisions and took on dangerous risks." (Levitt & Turner 2008), In response to the uproar surrounding fair value accounting, as a part of the Emergency Economic Stabilization Act of 2008, Congress mandated an investigation of mark-to-market accounting. Specifically, studies were to focus on

the effects of fair value reporting on companies' financial statements, the quality of financial information being provided, the bank failures of 2008, the reasoning behind the Financial Accounting Standards Board's (FASB) requirements, and any changes or alterations that could potentially be made to the standard (Congress 2008). In response, FASB Chairman Robert H. Herz stated: "we agree with the SEC and with our Valuation Resource Group that more application guidance to determine fair values is needed in current market conditions. Additionally, investors have asked for more information and disclosure about fair value estimates. Therefore, the FASB is immediately embarking on projects that directly address areas that constituents have told us are challenging in the current environment, and which will improve disclosures in financial reports." (FASB 2009) It is clear that there have been many modifications to fair value accounting practices since the issue first blew up. However, a new set of questions has risen to the forefront – what has changed with the additional guidance issued on fair value? Additionally, has there been a shift in the way in which assets and liabilities are classified?

3. Embedded Value Reporting

Embedded value can be defined as the sum of: δ free surplus allocated to the covered business; δ required capital less the cost of holding required capital; and δ the present value of future shareholder cash flows from in-force covered business. It is inevitable that these elements are interlinked, because all assets supporting the portfolio are available to meet claims. Views differ as to whether the required capital forms part of the free assets which are constrained, and should be valued at less than their market value, or whether it is more appropriate to consider the cost of holding required capital as being as much part of the policy provision as the mathematical reserve. We note that this distinction is primarily presentational δ if the same valuation technique is applied to both viewpoints, the same result ensues.

Whilst the actual contribution to profit of a portfolio of life assurance business can only be measured once the last policy has left the books, the development of fast and readily accessible computing power has enabled the application of cash flow techniques to estimate future profit contributions of the portfolio. Anderson (1959) and others described techniques for pricing products and valuing the in-force business. As personal computers developed, so did the applications of these techniques for projecting or estimating the profitability of a portfolio. Typically, this was by means of a mathematical model in which 'best estimate' assumptions were made about future experience, for example relating to mortality, lapses, asset

yields, expenses and expense inflation, and projected surpluses were discounted at the shareholders' required rate of return. (The exact meaning of 'best estimate' has provided a topic for discussion within the actuarial profession. Deterministic estimates of the 'embedded value' of a portfolio have become common in the past 20 years, and the techniques can now be extended to produce an embedded value based on stochastic methods. The actuary of the early 21st century is, however, in something of a dilemma, in having to decide how to continue to develop valuation methods based on assessments of risk, or whether to use methods more directly calibrated to external market prices.

3.1 The Geddes Committee and Guidance

The first Institute working party to consider the topic of embedded values was under the chairmanship of J. A. Geddes. This was established in May 1987, and reported to an Institute seminar in November 1988, with a written report being produced in February 1990. A principal objective of the working party was to consider the extent to which methodology and principles needed to be codified or prescribed. The report gives a good review of embedded value techniques, and the important questions which surrounded them, at that time. The report is candid, that there was a division of opinion amongst members on a number of topics. Geddes et al. (1990) contained recommendations on two levels of disclosure, the first being confidential disclosure by the reporting actuary to his principals/clients, and the second being public disclosure in financial statements and other published documents. The first level was considered to be a matter principally for the Actuarial Profession to decide; the second level would need to be discussed with both the accountancy profession and the life assurance industry, including parent companies which are not themselves assurance companies. Until the takeover of the Pearl Group (Pearl) by a subsidiary of the Australian Mutual Provident Society (AMP), embedded value accounting was viewed principally as a matter for the Actuarial Profession. The working party considered its role to be to provide the groundwork for the development of a more formal statement of recommended practice acceptable to the accountancy and actuarial professions, supported by a Guidance Note on the actuary's duties of disclosure and codification of technical methodology.

In 1989, AMP completed its successful bid for Pearl. In their sessional paper, Salmon & Fine (1990) described various issues which had arisen in this hostile takeover, suggesting areas where the Profession may have wished to become involved. The issue of the publication of an appraisal value was a key issue. Many believed that the final result of the takeover was detrimental to the shareholders

of the Pearl, because of the lack of published financial information until it was too late for it to be accepted and understood by the investment community. This triggered a number of listed companies into publishing more realistic information on a regular basis, with their efforts for standardisation being channelled through the Association of British Insurers.

However, the Profession has produced no more guidance, although many actuaries produced embedded value calculations, both as a value figure for use in transactions involving capital values, and as a tool for calculating the value added by management and management decisions in financial statements and other published and internal documents. The fact that there were a considerable number of embedded value calculations being made, some with published assumptions, led to a limited amount of convergence.

There were a number of subsequent sessional and Staple Inn meeting papers which discussed embedded value, for example Mehta (1992), Wright (1992), Collins & Keeler (1993), Sherlock et al. (1994), Mehta (1996), Simpson & Wells (2000) and Sheard et al. (2001). In particular, there were discussions on the appropriate method of establishing risk margins. In practice, the most important was the choice of the risk discount rate and its relationship with other economic parameters, such as the assumed investment returns and the associated rate of inflation.

Embedded value accounting did offer a number of advantages; by no means the smallest was that it provided a more realistic alternative to statutory accounting, under which new business strain had the effect that a successful and fast growing company appeared to be making greater losses than a less successful company. The embedded value method recognizes the expected value of the new business written. However, the European Commission Insurance Accounts Directive did not permit embedded value accounting, although some mitigation of new business strain was allowed through the use of a deferred acquisition cost asset. Banking groups were not within the scope of the Insurance Accounts Directive, and continued to use embedded value in their primary financial statements.

4. Enhancing Value of Auditor Reporting

Today's increasingly global and complex business environment and the turbulent events of the global financial crisis have highlighted the critical importance of credible, high-quality financial reporting. The current environment and events also have stimulated the demand for additional, and more pertinent, information about entities and the processes that support the quality of their financial

reporting. Existing shareholders, potential investors and others look to reduce the level of uncertainty in their decisions by seeking information they consider to be relevant and reliable.

Achieving high-quality financial reporting depends on a jurisdiction's financial reporting infrastructure put in place for that purpose. The legal and regulatory environment, including reporting rules and policies relating to corporate governance, the requirements of the applicable financial reporting framework, and standards governing behavior of participants in the financial reporting supply chain are all interrelated inputs to corporate financial reporting.

Equally, high-quality financial reporting depends on the decisions of those within individual entities who have responsibility for financial reporting—management and those charged with governance—about information that is made available to users. These decisions are made in the context of a jurisdiction's financial reporting infrastructure, with input from those charged with governance and the independent auditor. Continuous improvement in financial reporting requires an ongoing commitment by regulators, investors and other users, standard-setters and policy makers to review and strengthen the components of the financial reporting infrastructure process that they influence.

The external audit plays an important role in supporting the quality of financial reporting around the world, whether in the context of the capital markets, the public sector or the private or non-public sector. It is an essential part of the regulatory and supervisory infrastructure. At the same time, a number of factors influence what is and can be expected from the audit, and what can or should be communicated by the auditor to users of financial statements. These factors include the nature of financial reporting, the practical and legal limitations on the auditor's ability to obtain and disseminate information, and the need for the audit to be conducted within a reasonable period of time and at a reasonable cost.

Auditor reporting is only one element of the broader corporate reporting process, but plays an important role in communications with users. Accordingly, the value and relevance of the auditor's report needs to be monitored and maintained and, as appropriate, enhanced.

4.1 Relevant Issues on Audit Report

The issues raised go beyond the independent auditor's report on an entity's audited financial statements. Corporate reporting in several jurisdictions also includes narrative disclosures about an entity's financial condition and operating results and a wide range of other non-financial information made available to

users in a variety of ways, including through public filings. The debate has therefore also focused on the extent to which independent assurance regarding the reliability and completeness of this broader range of corporate information would help financial statement users to make more informed decisions.

Information gathered to date signals that: (a) The financial statement audit and the independent auditor's opinion on an entity's financial statements are valued. However, other than communicating the auditor's overall conclusion, the content of the auditor's report is not viewed as being as useful or informative as it could be.

(b) Users recognize there is richer information about the entity and about the audit itself than is currently being provided through the audited financial statements and other corporate disclosure mechanisms, and through the auditor's report. Users wish to obtain this richer information directly from the entity and/or through communications about the auditor's insight into such matters. They believe such information would assist them in assessing the financial condition and performance of the entity, as well as the quality of its corporate reporting and the quality of the audit. This is referred to as the "information gap." This is not the same as the expectations gap, but overlaps with it. Both are discussed further below.

(c) Some users also believe that the communicative value of the auditor's report could be improved if changes were made to the structure and wording of the auditor's report.

(d) There are many potential options for changes that might address these concerns, including some shorter-term options that fall under the IAASB's mandate and some longer-term options that would require co-operation with organizations whose mandate extends to other regulatory and legislative frameworks.

4.2 The Expectations Gap

The "expectations gap" has been defined and described in a number of ways. In the broadest terms, the expectations gap is the difference between what users expect from the auditor and the financial statement audit, and the reality of what an audit is. This long-standing expectations gap often is attributed, in part, to a misunderstanding by users about the nature of an audit, including its scope, objectives and inherent limitations.

In particular, there continues to be a difference between public perceptions about the auditor's ability to detect financial statement fraud and the auditor's responsibilities relating to fraud under existing professional standards.

It also has been suggested that the expectations gap results, in part, from the manner in which auditors communicate their findings to users of financial statements. Because the standard auditor's report uses generic language to describe the auditor's work effort, users do not get a complete picture about the extent of the auditor's procedures on a particular audit and therefore feel left with a – gap Π between what is actually done and what they perceive is done in connection with the audit.

Academic research shows that user perceptions of audit quality are influenced by the communicative value of the auditor's report. The standard auditor's report provides little information to evaluate the quality of the audit, in part, because it does not disclose information about the procedures performed and the extensive judgments made by the auditor in forming the audit opinion. Increased transparency about the audit process may therefore have a beneficial effect on perceptions of audit quality.

4.3 The Information Gap

Users of corporate financial information point to the existence of a gap between the information they believe is needed to make informed investment and fiduciary decisions, and what is available to them through the entity's audited financial statements or other publicly available information.

This – information gap Π has implications for the efficiency of capital markets and the cost of capital. The information gap is also seen as increasing the challenges of understanding how corporate financial information, including the audited financial statements and related disclosures, reflects the overall picture of the entity's financial condition, performance and sustainability of its business—an already considerable challenge especially in situations of economic turbulence.

Some suggest that the information gap is partially attributable to weaknesses in the financial reporting frameworks or their application, particularly in relation to disclosures that are key to users' understanding of the entity and its financial statements.⁴ Nevertheless, many acknowledge that the complexity inherent in the business and reporting environment means that audited financial statements alone are unlikely to provide users with all the information they need for their financial analysis and decision-making.

Users recognize that the information available to them, including an entity's audited financial statements and the auditor's report thereon, is only a part of the wider information set available to management of an entity and/or to the entity's independent auditor. By design, through the established financial reporting

frameworks and relevant laws and regulations, this smaller subset of the available information is intended to provide users with a relatively concise summary of information relevant for their decision-making.

A perception exists that there should be more transparency about: (a) The entity and its financial statements, particularly key financial reporting risks and how they are being addressed; and (b) The audit performed, including key areas of audit risk. This leads to consideration of what the available, and most appropriate, channels are for narrowing the information gap by providing this type of additional information to users.

Conceptually, the perceived – information gap could be narrowed by the disclosure of additional information that is currently not available to users. In principle, such information could be provided to users through some combination of additional reporting by management or those charged with governance, or by the auditor. Some investors and analysts in particular, however, view the auditor's insight into the entity and its business obtained through the audit of the entity's financial statements as being especially relevant information for their needs, and have suggested that the auditor could report on the following types of additional information: Key business, operational and audit risks the auditor believes exist. The auditor's perspective on the key assumptions underlying the judgments that materially affect the financial statements, and whether those assumptions are at the low, most likely, or high end of the range of possible outcomes. The appropriateness of the accounting policies adopted, including any that are inconsistent with industry practice. Changes to accounting policies that have a significant impact. The methods and the judgments made in valuing assets and liabilities. Significant unusual transactions. Key audit issues and their resolution which the engagement partner documents in a final, summary audit memo. Quality and effectiveness of the governance structure and risk management.

4.4 Explanations of Management and Auditor Responsibilities

The standard auditor's report includes paragraphs that describe the respective responsibilities of management and the independent auditor. These paragraphs, added in the past to address some aspects of the expectations gap, are intended to provide essential contextual information for a reader's proper understanding of the auditor's opinion.

Academic research, however, indicates that readers perceive little information value in any content of the auditor's report other than the opinion on the audited financial statements. In particular, there is a view that those generically-worded

paragraphs do little, if anything, to bridge the expectations gap relating to the financial statement audit.

Some are of the view that these paragraphs could say more about the respective responsibilities of management and of the auditor (for example, regarding fraud, going concern, risk, non-financial disclosures or auditor independence). In particular, it has been suggested that providing an expanded description of the auditor's responsibilities for the detection of fraud would be especially helpful in addressing the expectations gap.

To address these views, one option would be to relocate these paragraphs to a separate document used to communicate with users about the financial statement audit. In doing so, the paragraphs also could be expanded as suggested in paragraph 40, as appropriate. Such a document, devoted solely to communication of such matters, could be made available electronically in a publicly accessible online location. An example is the model being used by the Auditing Practices Board (APB) in the United Kingdom.⁶

A second option would be to remove these paragraphs entirely from the report. This would result in what some have termed an "opinion-only" report. This would assume that readers are already sufficiently well-informed about the matters addressed in those paragraphs and need not be reminded when they read the auditor's report. Evidence suggests this is generally not the case, even in respect of sophisticated users.

A third option would be to retain these paragraphs in the auditor's report (and, as appropriate, expand their content), but position them at the end of the report, or as appendix thereto, while highlighting that such information is an integral part of the report. This may assist in enhancing the readability of the report while retaining what many perceive as essential contextual information.

Several arguments have been advanced for retaining these paragraphs in the auditor's report. Among other things, the auditor's report remains a stand-alone communication from the independent auditor. In addition, although the importance of this – one-stop communication may vary depending on the national liability regime, the inclusion of these paragraphs in the auditor's report promotes use of internationally consistent communications about the audit. Moreover, because these paragraphs were added to address the expectations gap, some have cautioned against their removal from the standard auditor's report. Those holding this view believe that removing these paragraphs entirely, in an attempt to improve the information value of the auditor's report, could in fact have the unintended consequence of widening the expectations gap.

In connection with these options for changing the auditor's report, others have commented on the need to develop educational material about the meaning of an audit and the role of the independent auditor that can be readily available to users. Over time, the availability of this information may relieve the need for such explanatory material to be included within the auditor's report itself.

4.5 Use of Technical Language

Academic research has shown that certain technical words used in the auditor's report (for example, – fair presentation,^Π – materiality,^Π – material misstatement,^Π and –reasonable assurance,^Π to name a few), appear to mean different things for auditors and for readers of the report.

There has been a call for wording used in the auditor's report to be less technical. Some have even suggested exploring whether explanations of technical terms and elaborations of key aspects of the auditor's report could be provided to assist users' understanding. A critical consideration in exploring this, however, is the extent to which further explanations may either assist or hinder readers' understanding of the auditor's report.

The idea of explaining more fully the meaning of technical terms might be explored in combination with the idea of providing a fuller description of the respective responsibilities of management and of the auditor. However, the more that is attempted in this area, the less likely it may be that it can all be accommodated in the auditor's report on the financial statements, therefore making it more likely that some degree of 'relocation' may be required.

4.6 Location of the Auditor's Opinion

It is acknowledged that the auditor's report needs to clearly communicate the auditor's opinion on the entity's financial statements. To many users, this is the key element of the report. The opinion is currently presented in the final paragraph of the report on the financial statements in the standard auditor's report. Some commentators have expressed the preference for the auditor's opinion to be given greater prominence. This could be accomplished, for example, through an –opinion-only ^Π report as described above or by presenting the opinion in the first paragraph of the auditor's report. Others have argued for the opinion to be positioned after the paragraphs dealing with the responsibilities of management and of the auditor, so that the opinion will be read with the appropriate context.

5. Value Addition Reporting

The concept of value added was initially used in 1790 in the first North American Census of Production (Gillechrist, 1970). Trenché Cox, a treasury official, whose techniques have since been adopted by most industrial nations in the calculation of Gross National Product (GNP), is regarded as the man responsible for realising that value added would avoid double counting. Value added has also been defined in the economic literature by Ruggles and Ruggles (1965). The VAS therefore, has a macro economic origin, in that the calculation of value added in the value added statement corresponds with the calculation of GNP, as well as economic significance. Suojanen (1954) defined the firm as an enterprise or decision-making centre for the participants, that is the enterprise theory. Accountancy's role in this regard is to report the results to the various interested parties in ways they can understand best. Suojanen suggested the value added concept for income measurement, as a way for management to fulfil their accounting duty to the various interest groups by providing more information than was possible from the income statement and balance sheet. This makes him one of the first writers to use the value added concept in terms of accounting for the results of an enterprise. Value added can be defined as the value created by the activities of a firm and its employees, i.e. sales less the cost of bought in goods and services. The value added statement (VAS) reports on the calculation of value added and its application among the stakeholders in the company. As such it introduces very little new information to that already contained in the income statement (salaries and wages used to be the only additional information), but it presents the information in a different and supposedly more understandable format.

In the United Kingdom, early forms of the value added statement functioned as part of a worker participation orientation towards the management of economic performance. It was important during the economic crisis of the immediate post-war era, but it disappeared during the prosperous years of the 1950s and the 1960s, only to return when similar strategic postures were adopted towards the management of the economy in the mid-1970s (Burchell, Clubb and Hopwood, 1985). According to Gray and Maunders (1980) the origins of the then recent interest in the United Kingdom in value added statements can be found in The Corporate Report (ASSC, 1975), which suggested the publication of a value added statement amongst other reforms. From 1977 onwards an increasing number of United Kingdom companies published the VAS, as has been established by various surveys of published financial statements (see for example Morley, 1978; Rutherford, 1978; and Gray and Maunders, 1980). In 1981 Burchell et al. predicted that the value added statement could lose its significance

again when the sociopolitical landscape changed. The research of Burchell et al. (1985) indicated that the incidence of publication reached a climax in 1980, but started declining after that. In the United Kingdom there were, therefore, definite trends towards and away from the publication of value added statements. A review by Gray and Maunders (1980) of the publication of the statement around the world indicated that a significant number of companies in the Netherlands, France and Germany provided value added data. They also noted growing instances of value added statements being disclosed in countries such as Denmark, Switzerland and Italy. An additional supportive

influence in the European context was the interest of financial analysts in value added data, especially in France. No further reference to the publication of the statement in Europe could be traced in the literature. In the United States of America and Canada companies have not published value added statements at all. Burritt and Clarke (1984) reported that the Australian approach to value added had been very cautious, showing nothing like the initial zeal in Britain. A few companies published value added statements (eight companies of the largest 100 in 1982, for example) as a regular supplement to the traditional accounts. Mathews and Perera (1996) reported that in New Zealand very few companies published a VAS as part of their financial statements.

5.1 Rationale for publication of Value Added Statement

The VAS is regarded as a social disclosure, and therefore socially related arguments can be used to establish a theoretical case for publication. According to Mathews and Perera (1996) and Gray et al. (1995), these theories include organisational legitimacy, social contract and political cost theory. The concept of organisational legitimacy suggests that management can influence the perception that the stakeholders have of the organisation, and in this way obtain the support of those stakeholders without which it might be difficult for the company to continue to operate. The social contract of business with society is based on the premise that society provides corporations with their legal standing and attributes and the authority to own and use natural resources and to hire employees and that a social contract is therefore implied. Political cost theory is based on the premise that companies do have political visibility and that companies have an incentive to use accounting methods and disclosures to influence their political visibility. The social theories therefore indicate that management has an obligation and an interest to report to the other stakeholders. Although most of the accounting frameworks suggest this (for example the International Framework IAS, 1988) they do not require any financial statement or disclosures that will meet the needs

of stakeholders other than the financial participants and these disclosures have therefore remained voluntary. As value added statements in practice indicate how value added was allocated between various stakeholders, they might be considered to be interested in the value added statement. The stakeholders specifically addressed in the VAS are the employees, the capital providers and the government.

Most of the literature on the value added statement indicates that it was aimed primarily at the employees. This was anticipated by the Corporate Report, published by the Accounting Standards Steering Committee (ASSC) in 1975, when it described the value added statement as the “simplest and most immediate way of putting profit into proper perspective vis-à-vis the whole enterprise as a collective effort by capital, management and employees ...” This move away from reporting on profits only, is supposed to make the financial information more relevant and understandable to the other stakeholders. The VAS therefore became known as a disclosure aimed at uninitiated and unsophisticated users of financial information. In addition, a number of surveys have been conducted among companies publishing the statement (for example, Purdy, 1981; Joubert, 1991; and Stainbank, 1992) These surveys found little evidence of actual use. The companies used the statement mostly for employee communication and wage negotiations. A survey was conducted during 1998 among SA companies to establish why they are publishing the VAS. The companies were selected on a random basis and 94 responses were received. The following are the five reasons given by most companies, in order of importance:

- To be used in corporate communication with employees
- To earn points in annual financial statement awards
- To indicate social responsibility on the part of the company
- To facilitate wage negotiations and collective bargaining
- To condition employee expectations

Therefore, it would appear that the social theories require management to report to the other stakeholders and that management have these stakeholders, and particularly the employees, in mind when they publish the VAS. The VAS is also an ideal vehicle to change perceptions of the company as it is unregulated and normally not audited, and can be used by management to condition expectations. Unfortunately, this aspect has eventually led users to mistrust the statement (for example, it almost always indicates that the labour component takes most of the value added (Hird, 1983)).

5.2 Market Related Arguments

Based on a normative approach of profit maximisation as the primary aim of an organisation, and the decision usefulness approach to the publication of financial information, annual financial statements have been primarily aimed at the financial participants in the company, being the shareholders and the creditors. Even recent accounting frameworks (for example the International Framework) have not had a significant impact on this and the other stakeholders have been largely disregarded (see also Mathews, 1997). The publication of the value added statement could therefore be motivated if it has additive or predictive value for the financial participants.

Although many studies have investigated the link between social disclosures and market indicators, the results have been conflicting. This is perhaps not surprising considering the difficulty in explaining investor reactions using economic theory. On the one hand Friedman (1970) argued that the “social responsibility of business is to increase its profits” and warned that social expenditure that reduced profits could have a negative impact on investors. In contrast, it has been argued that investors will reward firms engaged in social activities by investing in them even at the risk of lower returns (Milne and Chan, 1999). It is therefore difficult to form an expectation of investor reaction, as different investors will have different expectations.

Mathews and Perera (1996) reported on studies done in the period from 1971–1984. These studies all attempted to relate some measure of social responsibility to measures of market performance. The studies looked at measures ranging from subjective indicators of social performance to objective indicators as reported by outside parties. They concluded that “although the findings from a number of studies are conflicting, it may be argued that the overall weight lies towards a view that the disclosure of non-traditional information does have utility for shareholders and the security market. However there are other, perhaps stronger, arguments in favour of social accounting disclosures.” Gray et al. (1995) found from studies done during the period 1979–1990 that corporate social reporting (CSR) disclosures did not appear to be related to profitability in the same period, but might be related to lagged profits. They also reported on decision-usefulness studies done on CSR information during the same period and concluded that despite some studies indicating that CSR information is not useless, the decision usefulness approach to investigating CSR has been largely unsatisfactory. Milne and Chan (1999) confirmed this by stating that little is actually known about the investment decision impact, or for that matter any decision impact, of social disclosures. They found from a review of the research

that there was no consistency in the market reaction studies and that it was doubtful whether these studies provide strong support for the proposition that social information is useful for making investment decisions.

Considering value added statements specifically, value added information is expected to have an impact on the external indicators of the company as it indicates how the value added of the company is allocated between the various stakeholders. As the shareholders will perceive the other stakeholders to be in competition with them for a share of value added, they can be expected to react negatively if the other stakeholders get too much of the value added. If, on the other hand, the value added statement indicates that any of the stakeholders has not received a fair return, it could also impact on the future share price (Gray and Maunders, 1980). Although this is perhaps not the strongest argument for decision usefulness, it has already led to a number of research studies in this regard. From 1990 to 1996 Riahi-Belkaoui conducted a series of studies investigating the link between value added information and market indicators in the USA. With Karpik (1990) he established that value added accounting information could supply considerable explanatory power of market risk beyond that provided by earnings or cash flow measures, especially at the individual firm level. In 1993 he established that value added information can supply some explanatory power of security returns beyond that provided by earnings or cash flow measures. He did a similar study with Picur (1994) in which they concluded that value added information can supply important explanatory power of security valuation beyond that provided by earnings. In 1996 (1996a) he found that value added information published concurrently with earnings did have additive information content. In the same year, (1996b) he found that value added-returns relationships offered better explanatory power than the earnings-returns relationships, when the relationships were expressed by a non-linear, convex-concave function. In 1996 (1996a) he also found that productivity (as measured by value added) did not provide information about future profitability incremental to that provided by current profitability. This finding seems to be surprising considering his earlier findings.

In other studies in this area, Boshoff (1996) found that value added information did not have predictive power with regards to share price and price earnings ratio. Bao and Bao (1996) examined the time series properties of value added as well as the prediction accuracy of the value added series. They found that the random walk model, which indicates that the effects of the factors that affect value added, and the direction of the changes, are not predictable, best fitted the value added measures and was consistent with that of annual earnings and share prices.

In a South African study Van Staden (1999a) examined the predictive and explanatory power of value added information in comparison to earnings for three external indicators over a five-year period. The external indicators were share price, price-earnings ratio and altmans z chosen with regards to importance, risk and future success or failure. All companies that published a value added statement for three of the five years were included in the sample. As already indicated, this represented a significant percentage of companies listed on the JSE (more than 30%). The aim of the study was to establish if value added had additional predictive and explanatory power beyond that provided by earnings, which is already a disclosure requirement for companies. Value added for the year as well as changes in value added was used in the statistical analysis. As value added as published by the companies is not calculated and reported in a consistent way, gross and net value added were calculated for each company in a standard way and in addition value added as published by the company was also used. This gave rise to three value added measures which were each tested individually against the external indicators. The study found meaningful correlation and regression between the value added measures and share price, but it was not more significant than the correlation between earnings and share price. As multicollinearity between the value added measures and earnings was observed, they cannot be used in combination to improve on the predictive power of earnings.

6. Reporting the value of acquired intangible assets

Partly driven by recent high-profile reporting-related scandals, accounting bodies around the world have been steadily shifting financial reporting to more of a fair value/market to market basis. As part of this shift, there has been a significant and steady change in the accounting for business combinations, specifically in the area of the treatment of intangible assets. Intended to introduce increased transparency into business acquisitions, this trend—led by the summer 2001 introduction in the US of similar standards FAS 141 (Business Combinations) and FAS 142 (Goodwill and Other Intangible Assets)—reflects the fact that acquisition prices are frequently considerably in excess of the value of the net tangible assets acquired and it is questionable to call all of this balance goodwill when typically it is represented by other intangible assets capable of reliable measurement.

6.1 Brave new world?

The newly introduced IFRS 3 is a very significant extension of this shift to enhanced transparency. Its impact should not be underestimated. All EU companies on listed exchanges will be required to report under IFRS from 2005

and, at the same time, many other countries including, for example, Australia, are also adopting these same standards. IFRS is therefore becoming the new accepted language for financial reporting. There are also significant pressures to converge the US and International Financial Reporting Standards to establish one set of global standards.

Principal changes of IFRS 3 at a glance: • All business combinations are to be accounted as acquisitions - no more merger accounting. • Goodwill is no longer amortised but subject to rigorous annual impairment tests. • More intangible assets will be identified, valued and recognised on acquisition. • Detailed disclosures about transactions and impairment testing are required.

Where accounting for intangible assets is concerned, a major problem until now has been that, while there is more or less global consensus that accounting for IP is an issue that demands attention, there has been less agreement on how these assets should be recognised and accounted for. This means that the same company's balance sheet can look completely different under different jurisdictions' accounting rules, notwithstanding the fact that each purports to show a true and fair view. The additional disclosure now mandated by IFRS 3 means that the market can expect to receive valuable in-depth information, helping them to assess more accurately exactly what companies have acquired. However, it should also be pointed out that, while this is clearly a positive step, a major gap still exists in the reporting of intangible assets because no jurisdiction yet allows a company to place a value on its internally generated intangible assets.

6.2 Goodwill no longer amortised

One of the most significant changes introduced by IFRS 3 is the fact that intangible assets other than goodwill that are recognised on the balance sheet will either be amortised over their useful life (hitting the profit and loss account and reducing earnings) or, if appropriate, assigned indefinite lives. Assets given an indefinite life will not be amortised, but will have to undergo an annual impairment test. The criteria for indefinite lives are strict, to the extent that few assets can be expected to meet them (see below). IFRS 3 has also changed the rules for residual goodwill. Goodwill is no longer amortised, but is instead subjected to a stringent, annual impairment test. In the event that it is impaired, an immediate charge will be taken to the profit and loss account, so poor performing acquisitions will be highlighted through such a charge sooner rather than later. This represents a fundamental shift in the way goodwill is viewed. Goodwill is seen no longer as a steadily wasting asset, but instead as one that should be expected to maintain its value.

6.3 No more pooling of assets – the end of merger accounting

Another key provision is the compulsory treatment of all business combinations as purchases – abolishing the choice of using the pooling of assets method (or merger accounting), which allowed companies simply to pool their balance sheets together, thus not recording any goodwill. This development may well have a very significant impact. For example, five of the six big pharma companies underwent defining mergers in the last seven or eight years – and all of them were treated as mergers and not acquisitions.

6.4 Purchase price allocation (PPA) now required in all cases

Under IFRS 3, recognising acquired intangible assets separately on the balance sheet is to be carried out as part of a purchase price allocation. Before IFRS, the difference between price and book value was goodwill. This goodwill bucket contained, inter alia, all the internally generated intangible assets (eg, brands and patents) which had not been capitalised by the acquired company. All these assets will now have to be identified, valued and separately included on the balance sheet. The list of Principal changes of IFRS 3 at a glance

- All business combinations are to be accounted as acquisitions - no more merger accounting.
- Goodwill is no longer amortised but subject to rigorous annual impairment tests.
- More intangible assets will be identified, valued and recognised on acquisition.
- Detailed disclosures about transactions and impairment testing are required.

intangible assets that will have to be separately recognised as a result of IFRS 3 is very extensive (see box). IFRS 3 demands that the identification and valuation of intangible assets should be a rigorous process. Those preparing accounts under these standards should also bear in mind the fact that, under Financial Accounting Standards Board (FASB) Standards 141 and 142, the SEC can, and does, call for the working papers supporting a company's purchase price allocation and underlying valuations, and has the ability to ask for the work to be re-performed if they consider that the requirements have not been complied with. Similar strict implementation is to be expected when companies report under IFRS.

6.5 Impairment reviews

Under IFRS 3, goodwill is no longer deemed to have a finite life and is therefore not amortised. Instead, it is treated as having an indefinite life and is reviewed for

impairment at least once a year. Other intangible assets may also be deemed to have lives, but this is rare and usually limited to certain trademarks. Most intangible assets other than goodwill are amortised over their expected useful lives. Assets given an indefinite life will have to undergo an annual impairment test. Unlike the situation in the

US under FAS 141 and 142, the IFRS test is a one-stage process, based on value in use (or value to the current owner), as opposed to the two-stage test in the US which is based on fair or market value. Detailed disclosure will be required in relation to these annual tests including the assumptions underlying the impairment tests and, potentially, how sensitive the result of the impairment review is to a change in any of these assumptions.

Therefore, management needs to be aware that shareholders and analysts will have more information to assess acquisitions and ask difficult questions in relation to their post-acquisition performance and the reasonableness of the impairment reviews. Some indication of the likely impact of these impairment tests can be obtained by looking back at the experience of some companies reporting under US GAAP, and being forced to make some significant impairment charges (under FAS 141 and 142). A case in point from the early days of FAS 141 was Telefonica. When the Spanish telecom giant restated its accounts under US GAAP, its originally announced net profit of €2.11 billion under Spanish GAAP turned into a net loss of €7.18 billion. The main reason for this huge difference was the need for writing down goodwill relating to acquisitions (including that of Lycos).

6.6 Useful life

The fact that most intangible assets (other than goodwill) are amortised over their expected useful lives imposes another burden on management – the need to determine the expected useful life of each of the assets acquired. Lining is an important process and management will want to pay careful consideration, particularly to the assets which may be ascribed an indefinite life (ie, the ones which will not be amortised but tested for impairment annually, like goodwill). Brand names are a good case in point. If the brand has been around for ages, enjoys high awareness and is a market leader (eg, a leading soft drinks brand), it will be relatively straightforward to ascribe an indefinite useful life for accounting purposes. Similarly, where last week's latest high-tech gadget is concerned, there will be little difficulty in ascribing a fairly short, finite useful life. Anything in between these two extremes is, however, likely to prove troublesome. Management should bear in mind that difficulties in accurately determining an intangible asset's useful life do not provide a basis for regarding that useful life as

indefinite. Concluding upon a useful life requires careful consideration of the circumstances as well as judgement. An indefinite life assertion needs to be backed by evidence and analysis supporting that no legal, regulatory, contractual, competitive, economic or other factors limit the life of the asset. Examples of such evidence might include internal and external empirical data (eg, lifecycle studies, market, technological and other trends; and renewal and extension patterns), as well as the opinions of valuation and industry experts. In light of the guidance provided by IFRS 3, it is envisaged that indefinite-lived assets will be rare. It is worth noting that following the introduction in the US of FAS 141, which includes similar guidance on lifing issues, the authorities there expressed surprise at the larger-than-expected volume of assets being ascribed indefinite lives.

6.7 Impact on earnings

Goodwill and intangibles constitute a majority proportion of the value of most companies. In light of this, there can be absolutely no doubt that the introduction of IFRS 3 is set to have a very real impact on earnings. Under the accounting standards that formerly applied in many countries, a significant proportion of the cost of an acquisition was typically allocated to goodwill, which was then amortised, typically over a period of 20 years. Under IFRS 3, no amortisation of goodwill could lead to a positive short-term effect on earnings. However, when companies complete deals under the new standard, less of the cost of acquisition will be allocated to goodwill. More intangible assets identified in new transactions, that are amortised over their useful lives, may well result in higher amortisation than if the cost of acquisition had been allocated to goodwill. This is because several of the intangibles typically recognised tend to have lives significantly shorter than goodwill (eg, contractual and non-contractual customer relationships, order backlog, non-compete agreements, software etc). It is therefore likely that, in a number of cases, the acquiring company's earnings will be lower than those expected as a result of identifying, valuing and amortising intangible assets. In addition, impairment charges will inevitably inject more volatility into the market, with the result that earnings are likely to fluctuate more than ever before.

Following the introduction of the US equivalent standard and consequent large impairment changes, management in some cases tried to downplay the significance of goodwill writedowns and pass them off as irrelevant and non-meaningful given that they are non-cash and one-time, blaming them on some obscure accounting change. Indeed, for analysts focusing solely on cash flow, these write-downs should not matter greatly. Also, ironically, these charges clean

up the balance sheet and can result in significantly improved return on equity in subsequent years. However, a large charge does indicate to investors that a company has overpaid for an acquisition.

Furthermore, large equity depletion may have implications for debt covenants. In addition, EPS, which is directly affected by such charges, is still used widely as a performance indicator and in some cases has an impact on directors' remuneration.

So how can management deal with these issues? It is important that those concerned with policy making and deal structuring are fully aware of the impact of IFRS 3 on the P&L and balance sheet. In many situations, there will be some flexibility in structuring a deal, which can allow for managing this impact, and ensuring that it is consistent with overall corporate strategy. There might, for example, be a trade-off between the level of earnings and the risk of large impairment charges. The higher the combined amount of goodwill and indefinite-lived intangibles, which are treated similarly to goodwill (not amortised) and differently to definite-lived intangibles (amortised over their useful life), the lower the amortisation charge and, thus, the higher the profit. However, having large amounts of goodwill-like assets on the balance sheet increases the risk of impairment.

Before a transaction, decision makers are best advised to carry out thorough analyses of the current and projected value of goodwill and intangibles to be acquired, based on the postmerger business plan. At the transaction and PPA stage they need to exercise care, for example when it comes to defining the acquired mix of definite and indefinite-lived intangibles. Post-transaction, implementing a robust IP value measurement and management system would enable management to monitor the value of the intangibles at regular intervals, thus resulting in better performance management – as well as providing an early warning when things go wrong, and allowing for corrective action to be taken.

6.8 IFRS v US GAAP

Although the IASB and the FASB have worked to remove as many of the differences between IFRS and US GAAP as possible, some differences remain. The date of an acquisition under IFRS is the date on which control physically passes (whereas in the US, it is the date on which the agreed deal is announced). Under US GAAP, in-process R&D acquired must be immediately expensed, while under IFRS this asset is capitalised and amortised (assuming certain criteria are met). Thus, US GAAP profits take a hit immediately following an acquisition,

while those under IFRS smooth this over the next few years. And there are key differences, as already described, between the two-stage US impairment test and the one-step process under IFRS 3.

7. Macroeconomic value reporting

Many economies are becoming knowledge based: competitive advantage and organisational performance is moving from investment in physical assets and low skilled labour to investment in intangible knowledge based assets such as R&D, design, brand equity, software, and human and organisational capital. For many organisations investment in such intangibles now equals or exceeds their investment in tangibles such as buildings, office equipment, hardware, machines, and vehicles.

These changes have thrown up four major challenges in how we account for such assets: Firstly, despite decades of debate and effort, it has not proved possible to find a way of accounting for such assets in the same way as, say, investment in a machine. This is what we call in this report the ‘value paradox’ – recognising the value of such assets but being unable to account for them through conventional accountancy rules. Investors, shareholders, and managers will in consequence make less well-informed decisions. Secondly, much of the debate has ignored SMEs and focused on the corporate sector because it is here that improvements in reporting, recognition, and management of intangible assets have been seen to have the greatest relevance. But the shift towards knowledge activity is even stronger among SMEs than large firms.⁴ Yet SMEs face even greater problems than corporate in accounting for intangibles. Thirdly, economists and others have increasingly recognised that the conventional models based on the national accounts definitions of investment in physical assets were only giving a partial account of growth, investment and productivity. And when intangible investment has been recognised, it is often focused exclusively on scientific R&D – as defined by the OECD. Important though R&D is, it accounts for less than 10 per cent of all intangible investment by business. Fourthly, we know next to nothing about investment levels or the treatment of intangible investment by the public sector – even though the two public based knowledge industries of education and healthcare account for around 40 per cent of value added produced by knowledge intensive industries in the UK. As well as all the problems identified for private organisations, public organisations have a further set of dilemmas: for example, how far they can legitimately exploit their intangible asset base to generate additional revenue.

In the knowledge economy, and in knowledge-based firms, much value lies in what accountancy practice refers to as 'intangible assets'. Knowledge, know-how, human capital, informational data, reputation and organisational practices are examples of such assets. They are 'intangible;' meaning they cannot be 'touched;' they cannot be grasped like material assets; they cannot be easily costed, counted and quantified. The nature of the knowledge economy, and the importance of intangible assets within it, is neatly summarised by Stanford economic growth theorist Paul Romer:

'How can it be that we are wealthier today than people were 100 years ago? . . . This question is puzzling because, if you add up all the things we own, it is clear that the underlying quantity of raw materials has not changed over time. . . . The total physical mass here on earth is the same as it has ever been, and now we have to divide this up among a much larger group of people. So how could it be that we have more total wealth per person than we ever did before? ... There's only one explanation for this increase in wealth. We took this raw material that was available to us and rearranged it in ways that made it more valuable. We took stuff that was not very valuable and made it much more valuable. ... What lies underneath this process of rearrangement are instructions, formulas, recipes, methods of doing things – the things accountants classify as intangible assets if they recognize them at all. They tell us how to take something that is not very valuable and rearrange it into a new configuration that is more valuable.'

Knowledge-based businesses rearrange. They generate their main cash flows from their investments in intangibles rather than from the traditional exploitation of physical assets and relatively low-skilled labour. As we shall see, macro-level analysis clearly demonstrates that intangibles create value, and investments in intangibles certainly yield returns above the cost of capital. Why else would business enterprises invest so heavily and consistently in R&D, employee training, brand creation and maintenance, organisational change, and other forms of intangible asset if this was not the case?

Despite their evident value-creating capacity, however, the case for capturing and representing that value within existing accounting practice has proven hugely controversial. In part, such controversy reflects 'philosophical' differences about the nature and role of accounting practice. On the one hand are those for whom the primary role of accounting is to assure a coherent representation of past performance, while others suggest that when faced with a knowledge based economy, traditional accounting acts to obscure a whole array of intangible drivers of value, and thus fails to anticipate future value-creation. As a consequence, for some, accounting is seen to require nothing short of a revolution in its ability to grasp the fundamentally distinct (forward) drivers of value growth in today's economy.

Lev (2001)⁷, one of the primary advocates for reform of accounting practices around intangible assets, suggests that such assets are now the primary drivers of modern economic activity. As a consequence, their absence from traditional financial statements leaves investors with insufficient information on which to make informed decisions about the (past and future) performance of a business. Indeed, Lev goes further, claiming that the lack of accurate reporting on intangibles has probably led to the ‘systematic undervaluation of intangibles,’ and as a result, also to insufficient levels of investment in these core assets. We thus face a situation in which we know intangibles are valuable, but cannot say how. Or more accurately, we can say *many* things about how, but none can adequately satisfy the demands of traditional accounting practice for verifiable quantification of risk and reward. This paradox, between something we actually use to create value yet which escapes adequate demonstration or quantification is referred to in this report as the *Value Paradox*. The Value Paradox is inherent to the knowledge economy. It is universal and cannot be solved. As we suggest below, there is no ‘golden’ metric for intangible value, and accountancy is not designed to deliver one even if there was. Where traditional accounting tools function as a guide to *past* performance, the focus on intangibles needs to be oriented to *future* value creation. This is not to say that research should not be undertaken to improve methods of accounting for intangibles at the firm level, only that their value can never be entirely captured in numeric representations.

Yet what we need is not so much a new or larger coat, but to liberate value-creation from the constrictions of a system of value reporting that is in fact oriented to an industrial economy. To escape the inaccuracy of analogy, what are now required are *new methods of value-creation*. To this end, this study argues that value creation in the knowledge economy is most fruitfully conceived in terms of innovation: here in the ways in which intangible assets are invested in. New products, services and processes that are generated by the innovation process (such as new drugs or internet-based distribution channels) are the outcomes of investment in R&D, acquired technology, employee training, customer acquisition costs and other intangibles. Certainly, intangibles are inherently difficult to trade, their legal property rights are often hazy, contingent contracts are difficult to draw up and the cost structure of many intangibles (large sunk cost, negligible marginal costs) is not conducive to stable pricing. Accordingly, at present, there are few active and organised public markets that enable trade in intangible assets. While this might eventually change – perhaps, for example, facilitated by internet-enabled exchanges – it will still require specific enabling mechanisms, such as valuation and insurance schemes. Once again, then, while private trades in intangibles proliferate, they do not provide adequate information

for the measurement and valuation of intangibles in general. The key to achieving substantial improvement in the disclosure of information about intangibles is thus to construct a comprehensive and coherent information structure that focuses on the big picture – the value creation (innovation) process of the enterprise – and places intangible assets in the proper role within that structure. This study therefore attempts a shift in focus from the dilemmas of reporting to an approach that focuses more on enabling the sorts of changes and reforms that are already identified as helpful, but are currently stifled by the pre-occupation with getting standards and measures absolutely right.

Often, it is used interchangeably with ‘intellectual capital’ or ‘intellectual assets’. Such confusion reflects not only the nature of intangible assets, but also the complex constituencies that are involved – investors, accountants, academics, policy-makers, consultants and firm representatives – and their different and sometimes competing interests in managing, measuring and reporting intangible assets. Investors tend to employ more specific terms such as ‘reputation’ and ‘brand equity’ rather than consider intangible assets in their entirety. Research shows that, internally, while managers appreciate the importance of company resilience and managerial competency, they tend to not consider these virtues as examples of intangible assets. Even advocates of a more schematic approach have tended to confuse the issue. The Enhanced Analytics Initiative, for example, has taken intangible assets to subsume socially responsible investment issues – a different, though related concept.

More recently, categorisations of intangible assets have broadened considerably, beyond the more ‘traditional’ intangible assets, such as patents, software and trademarks, to include more dynamic elements of businesses such as human resources, organisational competencies and business processes oriented to innovation.

Thus, guidelines published by researchers from European universities under the EU Meritum project, for example, identify three distinct categories of intangible assets: ‘human capital’ refers to the knowledge and skills of employees, such as the amount of employees with a PhD; ‘relational capital’, referring to the consumer, supplier and research networks that are open to the firm – such as consumer loyalty, previous business or research collaborations; and ‘structural capital’, (ie the organisational competencies of the firm) – such as its intellectual property and infrastructure assets.

The non-physical nature of these assets has, however, continued to thwart efforts to quantify their exact value. Again, the Value Paradox is not something that can

be ‘solved.’ Financial statements and reports of physical assets no longer provide comprehensive analyses of knowledge-based firms, and this is certainly problematic for investors, accountants, shareholders, management and policy-makers alike.

Moreover, the broadening of definitions to include more dynamic issues further compounds the difficulties of valuation. Indeed, ambiguity continues between the intangible assets themselves – such as patents and trademarks – and their ‘value drivers’, ie the organisational competencies and networks that will effect whether or not the former are utilised to their full potential. Furthermore, the various components of intangible assets can be deeply intertwined, making them difficult to isolate and quantify. (Lev and Daum, 2004). On the whole, policymakers have largely failed to appreciate the extent and diversity of intangible assets and their preoccupations have often been restricted to an almost exclusive focus on R&D. This in part reflects a long-standing paucity of existing (systematic and comparable) macroeconomic data on intangibles within the international System of National Accounts. While a 1993 revision of the SNA did incorporate a number of hitherto excluded intangible assets – such as software, artwork and mineral exploration – its scope has remained relatively narrow (Schreyer, 2007). As a result, certain R&D expenditures have been taken to constitute consumption expenses within existing national accounts. Recent revision of SNA in 2008 has sought to address this issue incorporating measures of R&D capitalisation. However, this immediately begs the question of why stop with R&D capitalisation? For example, staff training and other intangible assets are just as risky as R&D and equally important for value creation. Indeed, companies invest in a host of intangible assets other than R&D to enhance their technological capabilities and bring innovative products to the market (Baldwin et al, 2004). The growing challenge for national accounting bodies will be to provide a more expansive account of the role of intangibles in the (macro) economy that is better able to capture their diversity in a systematic and comparative form.

8. Reporting Corporate Value Creation

The motivation for the valuing and reporting of intangibles at the firm-level generally revolves around the claim that many contemporary businesses are ‘knowledge-based’, in that they generate their main cash flows from their investments in intangibles rather than primarily from the traditional exploitation of physical assets and relatively low skilled labour.²⁷ For example, Lev (2001)²⁸, one of the primary advocates for the reporting on intangibles, suggests that ‘intangibles’ are now the primary drivers of economic activity and that as a

consequence of the absence of intangibles reporting in traditional financial statements, users have insufficient information on which to base rational investment decisions. Indeed, Lev goes further and claims that the lack of reporting has probably led to significant under-investment in intangibles, ie, the 'systematic undervaluation of intangibles' by investors; and that radical reforms to the reporting model might be the catalyst for generating higher and economically worthwhile levels of investment in such assets. Lev is not alone in making these claims, or in calling for accounting reforms to more adequately disclose firms' investments in intangibles. For example, the CEOs of the world six largest accountancy firms have also suggested that, because the market values of firms typically far exceed their book values, this provides 'strong evidence of the limited usefulness of statements of assets and liabilities that are based on historical costs' (DiPiazza et al., 2006, p 16). This same report calls for more 'forward looking', ie, 'predictive' information relating to 'how well a company will perform in the future: innovative success ... measures of customer satisfaction, product or service defects or awards, and measures of employee satisfaction (perhaps approximated by turnover)', (DiPiazza et al., 2006, p 17). According to this view, then, accounting measurement is not a sufficient basis for the strategic management of the firm. Rather, the firm needs to set goals and track performance using a broader framework of analysis. This involves decomposing market capitalisation into current and future growth value components, and creating systems to track that future growth in all of its dimensions (market, customer, human, structural, etc.). Where firms recognise the limitations of traditional, transaction-based accounting, they have sometimes moved to measure and disclose the 'fair value' of their intangible assets. This, in turn, leads them to use a broader set of metrics, now including measures for customer, human and structural capital. These metrics are derived by decomposing market capital into current and future growth value components, and enables the measurement of future value creation streams. Indeed, there has been no shortage of attempts to develop such stand-alone measurement frameworks, and currently, there are at least 80 different value and performance measurement schemes on offer.

The proliferation of value frameworks, their different conceptions of intangibles and their varied weighting of values, all attest to the difficulties faced by any attempt to account for intangible assets within the firm. These difficulties are widely aired across the relevant literature and can be categorized as pertaining to issues around the identification of intangible assets, problems accounting for goodwill, how R&D is accounted for and how brand reputation is to be measured. We here take each in turn.

Current international standards for intangible accounting are highly complex. For the firm to have created an intangible asset, it must be identifiable, separable and reasonably expected to generate some future economic benefit. Under IAS38, the current international accounting standard that covers accounting for intangibles, an intangible asset is defined as '*an identifiable, non-monetary asset without physical substance*'. Further, any intangible asset must also fulfil the criteria of an ordinary asset as set out in the IASB Conceptual Framework of being '*a resource controlled by the entity as a result of past events and from which future economic benefits are expected to flow to the entity*'. Investment in R&D or training does not therefore automatically result in the creation or acquisition of an intangible asset as it is not clear that this investment will result in any future economic benefit to the firm.

Companies must also control the asset to allow for the firm to gain any future economic benefits, and do so with a high degree of certainty. In many instances, this can be achieved through the protection of intellectual property (IP), which gives the firm legal rights over a specific technology or process through patent or copyright. Although such legal control is intuitive for technological innovations, however, it is not so for other forms of intangible asset, such as training and knowledge spillovers. The ability of the firm to secure future economic benefit from such assets is, therefore, rendered uncertain.

Even when the firm has a copyright or patent, these must still fulfil the asset criteria, as well as being identifiable. Again, the condition of identifiability is not straightforward. As IAS38 states, an asset is identifiable when the firm has control over the asset, or it can be separated from the other assets of the firm. To be classed as separable, the asset must be '*capable of being separated or divided from the entity and sold, transferred, licensed, rented or exchanged*'. Under this definition, for example, goodwill is not an intangible asset as it is not identifiable. To actually recognise an intangible asset on the balance sheet, all the above criteria must be met and the cost of the asset must be estimated. In these circumstances, the cost of the asset is usually the cost of acquisition – such as the purchase of a franchise or the cost of generating the asset such as R&D. However, to estimate the expected future economic benefits of a given intangible asset, IAS38 allows managers to apply discretion to arrive at the best approximation of the revenues that the firm expects to gain. If intangible assets are purchased, the issues surrounding recognition are reduced, as the total cost is the price paid for the asset plus any costs that are directly related to the purchase. The price then reflects the expectations of any future economic benefit that that asset might generate.

Firms can also generate intangibles internally. Yet again, such assets are difficult to accurately identify and cost. IAS38 is, however, explicit that *'internally generated goodwill shall not be recognised as an asset'*. Research and development are therefore considered to be different parts of creating an internally generated intangible asset. IAS38 defines the research phase as *'original and planned investigation undertaken with the prospect of gaining new scientific or technical knowledge and understanding'*. By so defining research, any costs incurred are expensed when they occur. Classifying research in this way is consistent with the standard and takes on what constitutes an intangible asset. This definition is also intuitively appealing, as there is a high degree of uncertainty as to whether any initial research would actually lead to any future economic benefit. The development phase of a project is defined as, *'the application of research findings or other knowledge to a plan or design for the production of new or substantially improved materials, devices, products, processes, systems or services before the start of commercial production or use'*. At this stage there is a much higher likelihood of there being an identifiable asset, and managers are able to demonstrate that the asset will result in some economic benefit flowing to the firm. If, however, it is not possible to identify an asset at the development stage, then any development costs that are occurred must be expensed.

Clearly, the complexity of accounting for intangible assets in the knowledge economy presents accounting with a major challenge. However, despite all the different criteria and methods for accounting for intangibles, there are two further issues that may exacerbate the problem of consistent financial reporting of such assets. These complexities in current accounting practices are made more difficult when confronted with issues of managerial discretion and 'fair value' mechanisms for asset valuation. one hand, critics allege that the use of managerial discretion in estimating the future economic benefits of intangible assets that a firm may reasonably expect could be problematic. If managers' expectations are unreasonably high, their assets will be valued and reported at too high a level, and therefore the meaningfulness of financial reports will be reduced. On the other hand, the use of 'fair value' amounts contributes to the difficulty of ascertaining future economic benefits. Under IAS38 and IFRS3 fair value is defined as *'the amount for which an asset could be exchanged, or a liability settled, between knowledgeable, willing parties in an arm's length transaction'*. While this may seem uncontroversial, critics claim that the use of fair value accounting is problematic and adds a layer of complexity to the already difficult task of asset valuation. The reliance of 'fair value' on quoted market prices, means that distorted prices – caused by market (dis)stress or illiquidity, for example – can be

uncritically taken to represent the actual value of the assets concerned, regardless of what their 'true' economic worth might be.

The value relevance of R&D has been fully explored in the accounting literature. Numerous studies have shown that equity prices and future returns are positively related to research and development in the firm (Hirschey and Weygandt, 1985; Lev and Sougiannis, 1996). Also, there is a tendency noted in accounting research for markets to overestimate the value of R&D relative to the increased earnings derived. The extent to which the market may overestimate the value of R&D is highlighted by the findings of Sougiannis (1994). For a \$1 increase in R&D, market values increase on average by \$5. Yet earnings only increase by \$2. Investors cannot, therefore, properly assess the potential future benefits of R&D investment. The reporting of R&D and the inherent riskiness of these investments is not properly understood. This was highlighted by Kothari *et al* (2002), who show that relative to future cash flows from tangible assets (property, plant and equipment), future cash flows from R&D are much riskier. Shi (2003) considers R&D increases from the perspective of bondholders to assess if the benefits outweigh the risks. The results show that from the perspective of bond holders the risk of the uncertain payoffs from increases in R&D outweigh the benefits. Interestingly, the study finds that around 80 per cent of the cross-sectional variation in bond ratings and risk can be explained by R&D components. These results suggest that increases in R&D increase shareholder wealth at the expense of bond holders by increasing firm risk [Eberhart *et al* (2007)].

However, Eberhart *et al* (2007) find that Shi's results (2003) are dependent on the measurement of R&D used. Applying a better measure of R&D and a more sophisticated analysis, they show that the net effect of R&D is positive for bondholders; ie the increase in firm value from increases in R&D offsets the increase in firm risk. Further, those firms that have the highest probability of default are found to benefit most from increases in firm value that come from increases in R&D. This is also the case where the level of bank debt in the firm is higher as covenant protection is much more stringent. Another option that firms historically exploited in structuring R&D was the creation of a research and development financing organisation (RDFO). By so doing, R&D is essentially undertaken in another corporate form: as either a limited partnership or a corporation. These structures offer potential tax and reporting benefits, yet Beatty *et al* (1995) found that the benefits of such structures are far from clear. Such methods can only point to marginal tax benefits and can, due to high levels of informational asymmetry, create adverse selection problems.

Table: Example of Glaxo-SmithKline, (GSK)**The impact of research and development on firm value: the case of pharmaceuticals**

Pharmaceuticals are an industry where research and development, protected intellectual property and regulatory approval are crucial. Where a firm has a drug under patent the implications on firm value of gaining regulatory approval are significant. In looking at pharmaceuticals as a case study the impact of R&D on firm cash flows and also the costs of undertaking such investments become clear. Glaxo-SmithKline, (GSK) a large UK pharmaceutical, gained approval from the Federal Drug Authority (FDA) for the sale of Altabax, a topical cream for impetigo in April 2007. FDA approval in this case was the first approval by the FDA for a prescription only tropical antibacterial in almost 20 years. Altabax clearly has a number of advantages relative to the other treatments that are currently available as it requires only two applications per day for five days. Most other treatments need to be used for around ten days and require more applications on a daily basis. This improved effectiveness is crucial as impetigo is a highly contagious skin infection that generally affects children between two and six and so the shorter treatment time with fewer applications makes treatment much more effective. The process of getting the drug to market however was not smooth. In 2005 the FDA said that it would require more testing to be carried out before regulatory approval was granted despite the firm having carried out successful clinical trials on 700 patients. In the third phase of clinical trials involving 210 patients the drug was shown to have an 86 per cent success rate.

Analysts estimate that with European approval, which was announced by GSK on the 1 June 2007, that the drug could generate worldwide sales of £150m per annum by 2011. Upon the announcement of the FDA approval the share price of GSK closed up by some 2.4 per cent giving the firm an estimated market value of £84bn (and increase of almost £2bn). In looking at the case of GSK it is clear that intangible assets and protected intellectual property can be very lucrative for firms. Further, the market clearly values these assets where a tangible revenue stream has been identified and secured. In fact, the drug was available as early as 2005, but was only approved in 2007. Implicit in this are significant costs in getting any drug to the market and there is clearly a high level of risk that approval would not be forthcoming in the end.

Brand names and reputation are significant assets for many firms and firms clearly trade on these. Google, for example, has an estimated brand value in excess of \$86bn.³⁵ However, once again, to properly value and account for this is problematic, here exacerbated by the wide range of stakeholders with competing needs. From the perspective of the firm, branding and reputation create competitive advantages for products that are easily substitutable. One such example is training shoes; Nike clearly generates significant value through its brand and customer loyalty. This is done through

creating relationship based assets through the development of a psychological link between the customer and the product.³⁶ How, though, do we value brands? In recent years there has been a good deal of work that aims to value brand. However, no method is wholly satisfactory and most require managerial judgement and discretion.

This review of current work seeking to capture the value of intangibles at the firm level reveals enormous conceptual complexities that continue to prevail over theory and practice. In a helpful summary of the broad theoretical challenges that remain for those attempting to capture the ‘true’ value of intangible assets, Kim (2007) suggests that there are four core concerns that will need to be addressed. These are:

1. Aggregation problems: these arise from the often incommensurable nature of various intangible assets. How do we delineate between management and scientific knowledge when in practice these exist in the mix? Moreover, while some intangible assets are amenable to quantitative measurement, others can only be represented in a qualitative form.
2. Depreciation: Little is known about the depreciation pattern of intangibles. Moreover, intangible capital depreciates both internally and externally. So, for example, the appearance of a new technology may lead to the depreciation of an old technology at an irregular and unexpected speed. How and how much intangibles depreciate (or, put differently, how fast they become obsolete) is often simply assumed rather than underpinned by rigorous evidence.
3. Human capital: While firm specific human capital should be treated as an intangible assets belonging to the firm, the general skills embodied in a person can leave the company when that person leaves. However, how can human capital which is firm specific be separated from other general skills in micro-level valuation exercises?
4. The relationship between intangibles: Many researchers have found that there are clear complementarities between tangible and intangible investment. However, there has been little research, and hence little is known, on the interaction and complementarities between different intangibles. The relationship between intangibles is bound to be more complicated than the one between tangibles and intangibles and it is likely that contribution of intangible assets as a combined whole is greater than the sum of the contributions of individual intangible capital items alone.

9. The Value of Integrated Reporting

Sustainability is a business practice important to all businesses of all sizes that is beginning to impact across the entire supply chain, as more and more global firms begin to see securing a green supply chain as a strategic priority. Integrated reporting increases the transparency of the organization, highlighting the issues and the impacts towards governance and structure.

Sustainability is more than just an over-used term or business practice for global organizations. It is a business practice important to all businesses of all sizes – globally. Sustainability is the ability for companies to cut the umbilical dependency on ever increasing environmental resource demands and cut costs delivering ethical, sustainable, economic growth over the longer term. This business practice is founded on sound business sense delivering improved value to all stakeholders – the company, employees, customers and wider societal groups.

In order to be effective and deliver the desirable value generating results it is essential to report both the strategy and the policy actions, creating meaning and credibility to the outcomes. Sustainability mitigates against future risks and creates a continued license to do business. Without the passport of sustainability, companies tread the boards of high risk through the contagion of poor business practice, leading ultimately to business exclusion.

How so? In the recent **Carbon Disclosure Project** 2011 Carbon Disclosure Project Supply Chain report, the numbers of companies who will de-select suppliers now for not having sustainable credentials has doubled over the 2010 report. This has been further buttressed by the recently released report ‘Green Supply Chain: from awareness to action’, from the consultancy **BearingPoint** Ireland, which indicates: *‘two thirds of companies surveyed in Europe believe that a green supply chain is a strategic priority.’* Furthermore, over half of the respondents in the survey said they did not renew contracts with suppliers who did not respect their green charter.

Moreover, throughout the great recession of 2007 – 2010, there has been a dislocation of trust between companies and the global communities they serve. Emerging from the recession – any company wanting to repair such dislocation has used sustainability as the model to achieve best results.

Notwithstanding this disconnect, the financial crisis in the main was brought about by short-term demand on profits (UNPRI) and a lack of focus on long-term value creation. Compounding these issues further was short term and inadequate

structures to monitor the environmental and social impact of the company, financial structuring and management practices.

Therefore, whether it is customers, companies want to engage, or investors through the reduction of risk, or employees to improve team cohesion, drive innovation and attract best talent from the ascendant eco-boomers; sustainability connects all the interdependent functional areas in a more holistic manner, driving down costs – delivering on-going value through the introduction of a continuous cycle of improvement.

And, the pressure being applied to the supply chain now is the result of large corporate bodies needing to realign on sustainable best practices and controlling the risk of the supply chain by removing companies demonstrating poor environmental and social practices. Furthermore, the momentum for these moves has been caused in part by the pressure being applied, from society, on the license to do business and part through the momentum of mandatory reporting. Examples of such mandatory acts are: Climate Change Act and the Carbon Reduction Commitment Energy Efficiency Scheme in the UK, Grenelle Act in France, Sustainability reporting law in Finland, King Code III in South Africa as well as many others across the globe.

Indeed, for global companies to survive and prosper, they need to ‘green’ their businesses to compete in an ultra competitive world, and this includes their supply chain, as exposure to a sustainably poor supplier will damage reputation and deliver the message to society, that for all the apparent sustainability efforts, ultimately there was no control.

However, sustainability is not just about mitigating risk, it is about opportunity. As stated earlier, reporting on sustainability forces actions and meets the needs of achieving cost cutting and value creation over the long term. Learning to deliver higher quality, more efficient products and services from a more efficient and optimized base of resource utilization.

So, sustainability addresses the triple bottom line of: Environmental, Social and Economic:

Environmental – reducing emissions and bio-diversity impact

Social – training and improved team cohesion of the human capital; further combined with societal improvement through investment in communities.

Economic – extended competitive advantage and value, long-term economic growth through improved trust, ethics, operational optimization and innovation.

Credibility of the company takes place particularly after the publication of the first report – detailing the sustainability base line, the actions, goals and intended outcomes. Once reported, it forces the enforcement of the policy. Reporting forces the company to set robust and meaningful KPIs and forces a behavior change with the resulting environmental improvements illustrating a sustainable development reality of sagacious leadership.

In contrast, companies believing they can develop a green mirage by ticking a few boxes and communicating efforts in the vaguest terms without proof of delivery, execution and the continuous cycle of improvement will fall prey to the more sophisticated buyers who are keen in identifying ‘window dressing’. The practice of half hearted commitment will be a danger to reputation – eroding trust and competitive advantage. Notwithstanding this, poor reporting, or no reporting, will show over time, words do not equal actions and results, leaving perceptions to adjust downward, showing the underlying reality of a sustainably poor company with poor governance.

Additionally, the EU over a number of years has consistently emphasized sustainable development to build trust between businesses and society to improve competitiveness. Following this lead, managers from companies in the vanguard of sustainability use their reports as tools to build better and more effective networks and communications across stakeholder groups. The reports become effective business tools as they deliver against market demand and expectation for transparency and make the companies more accessible. In response, the report providing companies gain a reputation for responsible corporate behavior.

What we see here is the evolution of sustainability creating an evolving and improving cycle of competitive advantage as sustainability has been shown to retain and attract best employees as, experience has shown, highly qualified eco-boomers come to the work market from university, they are choosing whom to work for with more consideration as to the values of the employer, making sustainability a major factor in decision-making. Business is going to have to adapt to the changing requirements and needs of the workforce and its ability to attract best talent as people revise their goals, priorities and expectations as they look to make efficiencies in how and where to live and work – as, commuting is less attractive with the associated impacts of time, cost and emissions being factored. Moreover, with best talent there is a natural progression toward evolving products and services reducing customer impact and building further the bonds of trust and legitimacy to operate, delivering long term value creation and, moving away from the corrosive past economic and business models.

Whilst market forces are driving the reporting agenda, this has been in part led by regulation, and it would be naive to think the regulation imperatives are going to melt away. On the contrary, they are on a sharp curve to engage all businesses quickly – each nation needing to meet challenging and agreed emission reduction targets. The quickest way to meet these targets is through operational excellence – reducing energy, water and waste whilst benefiting communities in reducing poverty and poor health. To decouple economic growth from current emissions growth curves is not a difficult concept, just one that needs embracing. The winners are embracing sustainability now and inoculating their businesses from investment and market exclusion. The losers will be the ones who just don't get it.

Furthermore, pervasive market and Governmental demands on sustainable development ensures the metrics needed to create meaningful and robust reports are being elevated to the same rigor as financial reporting. This in its self is leading to, and causing, new requirements for company law and accountancy rules. With reports being used as business tools, it is further leading towards managerial creativity around new ways of building brand and reputation to meet with the new customer and other stakeholder demands and expectations.

These market forced actions underpinned in 2010 by the establishment of the **International Integrated Reporting Committee (IIRC)**. The objective: to establish a global reporting framework for ESG (Environmental Social and Governance) information in a clear, concise, consistent and comparable manner. *“Integrated Reporting demonstrates the linkages between an organization strategy, governance and financial performance and the social, environmental and economic context within which it operates. By reinforcing these connections, Integrated Reporting can help business to take more sustainable decisions and enable investors and other stakeholders to understand how an organization is really performing.”* IIRC.

For example: **Ernst and Young** recently issued a report indicating an increase in the number of shareholder resolutions focused on sustainability. The report: ‘Shareholders Press Boards on Social, Environmental Risks’ claims shareholders are paying closer attention to environmental and social matters as they bear closely upon the risk companies are exposed and therefore ultimately on financial performance of these companies. In short: shareholder resolutions that garnered at least 30% support (30% being seen as critical mass) on social and environmental issues rose from just 2.6% in 2005 to 26.8% in 2010.

Naturally, this momentum is also found in the investment market place where ESG issues are gaining critical importance in determining investment funds – understanding fully the risks to future income, trust and reputation. It has been

shown; intermediaries in capital markets are increasingly integrating ESG data into valuation models. And, evidence suggests that sell-side analysts generate more positive recommendations for firms that score high in ESG credentials. In conclusion, sustainability is not restricted to companies valued through stock markets. Their supply chains are part of that valuation, and so all companies are involved. Society is demanding a repair of the dislocation of trust. And this is a wonderful opportunity for business, the environment and society to benefit.

Sustainability and its reporting will increase the transparency of the company, highlighting the issues and the impacts towards governance and structure. It acts as a catalyst for positive change to internal management practices and creates incentives to better manage relationships with employees, investors, customers, suppliers, regulators and society.

Whilst sustainability highlights risks, it also by default spotlights the opportunities – to increase efficiency, reduce energy, water and waste through operational optimization; within the boundaries of the company as well as the supply chain – whilst also exposing any human rights violations.

Sustainability inoculates a business from market exclusion as customers have already shown to be turning their backs on socially and environmentally irresponsible companies.

Sustainability is about building long-term relationships and long-term economic growth, for the company engaged in sustainable behavior and the eco-system in which the company is embedded.

10. Grant Thornton recommendations on Enhancing the Value of Auditor Reporting: Exploring Options for Change (Oct. 18, 2011)

Grant Thornton has submitted its recommendations to the International Federation of Accountants (IFAC) on Enhancing the Value of Auditor Reporting: Exploring Options for Change. The consultation paper seeks to determine whether there are common views among users of audited financial statements and other stakeholders about the usefulness of auditor reporting.

“Grant Thornton favors enhancements to the auditor’s report that would increase the usefulness of the information provided to stakeholders,” said Trent Gazzaway, Grant Thornton LLP’s Audit managing partner. “An enhanced understanding of the needs of the readers of the financial statement, audit report and other information made available to stakeholders may also lead to bolder changes in the financial reporting process and the role of the auditor.

“In exploring substantive change to the audit reporting, we encourage the IFAC to develop a holistic, principles approach that we describe in our cover letter to determine the type of reporting that would narrow (and not increase) the expectations gap.”

External reporting by an entity and its auditor is a complex subject. Entities strive to produce accurate and complete information, at a reasonable cost, to meet the needs of stakeholders while balancing the need to protect their business from competitors using the disclosed information to the entity’s disadvantage. Auditors need to respect the confidentiality requirements of the entity and provide the stakeholders with a clear message regarding the fairness of the entity’s financial statements, taken as a whole.

The foundational concept to external reporting is that management reports and auditors enhance the value of those reports by providing independent assurance. This long-standing concept and practice has served stakeholders and society well and we believe it should be retained.

Grant Thornton feels that determining the actions to take to enhance the value of auditor reporting need to be based on following principles:

A holistic approach to determine the actions needed to enhance external reporting, which involves determining the incremental reporting needs of stakeholders, assessing who should be responsible for the reporting, determining the benefits and costs of the reporting and whether assurance on the reporting would add value. This approach would also involve providing criteria for the incremental reporting to enable entities to meet disclosure objectives and enable auditors to opine on the information, if assurance is desired.

The management of the entity is responsible for meeting stakeholder’s expectations regarding information about the entity. Auditors should disclose entity-specific information only when management fails to report information as required by the reporting framework or criteria.

The entity’s auditor is responsible for disclosures about the audit process. Additional disclosures aimed at narrowing the expectation gap and should:

Relate directly to the audit process. For example, stakeholders may desire greater transparency about the role of component auditors in the audit of the group and such information could be provided in the audit report.

Communicate clearly the level of assurance provided, if any, on additional disclosures. The auditor’s views about aspects of the entity’s disclosures based on the audit procedures performed in the financial statement audit should be

presented in a manner that does not mislead the stakeholder to believe that these views are presented with assurance. For example, such views could be expressed in a report that is separate from the financial statement audit opinion.

The entity's auditor is responsible for disclosures about the audit process. Additional disclosures aimed at narrowing the expectation gap and should not:

Be a surrogate for information about the entity. For example, one of the suggested enhancements under consideration is reporting on areas where the auditor had difficulties on reaching a conclusion. In seeking such reporting, stakeholders may be less interested in the audit process and more interested in measuring an unspecified attribute about the entity. We refer to this situation as "surrogate for information about the entity." In the case of "difficult audit areas," stakeholder may be seeking information such as the complexity or aggressiveness of the entity's financial reporting or the appropriateness of the entity's resources or the adequacy of the entity's controls. Any of these items could result in audit difficulties as auditor disclosure of information about the entity would not be appropriate. Stakeholders would be better serviced by a direct measurement of the desired information and by having that measure performed and disclosed by management.

Mislead stakeholders. For example, disclosing the auditor's quantitative materiality could mislead the reader as the application of qualitative aspects of materiality applied by the auditor during planning, execution and evaluation are omitted and the complexities associated with the application of materiality to certain measurement uncertainties may not be understood.

Increase the expectation gap by confusing stakeholders or casting doubt on the appropriateness of other auditor or management disclosures.

Grant Thornton also believes that stakeholders are equally interested in incremental and different disclosures with respect to the entity. We therefore encourage IFAC to work with other necessary stakeholders in a holistic manner in its efforts to address the reporting expectation gap.

11. A framework for effective corporate reporting

What information should a company gather and report? A framework for effective corporate reporting has four main elements:

Market Overview - provides management's take on the company's external market. Although no one can predict the future, investors want to know what the company's leadership thinks the future holds. This should typically include the competitive environment, the regulatory environment and macroeconomic environment in which the company operates.

Value Strategy - explains in detail how the company will compete in its marketplace, and outlines its strengths and weaknesses, goals, objectives, governance and management.

Managing for Value - reports on financial performance and position benchmarked against competitors and peers, risk management, and segment results.

Value Platform - details how well a company manages its tangible and intangible assets, including innovation, brands, customers, supply chain, people and social and environmental reputation, to create value.

In developing measurement methodologies, a company must focus on its unique industry metrics and concentrate on those that best fit the company's strategy. Although many industry groups are working independently in this area, there is a great deal of work to be done in establishing non-financial metrics by industry and general standards around the development and calculation of such metrics. The Canadian Institute of Chartered Accountants is leading a global initiative to try and develop global standards for value creation drivers. It is working with other major accounting bodies and the large global accounting firms to identify the key value drivers and risks and to set global standards to assess and compare them. The accounting profession, with its global reach, must play a critical role in bringing about these changes in external reporting.

For the majority of companies who are not amongst the chosen few, there is a need to bridge the communications gap. There are five identifiable gaps in getting their word to the street:

The Information Gap. The difference between the importance that analysts and investors attach to a value measure and how satisfied they are that their information needs in regards to that measure are being met by company managers.

The Reporting Gap. The difference between the importance that managers attach to a value measure and how actively they work to report on it.

The Quality Gap. The difference between the importance that managers attach to a value measure and the reliability of the information provided by their internal systems.

The Understanding Gap. The difference between the importance that managers attach to a value measure and the importance that analysts and investors attach to it.

The Perception Gap. The difference between how actively managers think they work to report on a value measure and how analysts and investors perceive the

adequacy of the information they get on it. In order to increase their visibility, companies need to start addressing their circumstances relative to these five communication gaps. They need to recognise where a gap exists and to address the need.

The lack of effective communications and the current failure of companies to report non-financial information place them in peril. Executives who feel their company's shares are undervalued should seriously consider whether it's because of a lack of relevant information. Is the company being transparent enough with its critical value drivers? Customers, shareholders and potential investors will make decisions about companies whether they use accurate data or not. If companies don't provide information, someone else with suspect reliability may, with resulting damage to a company's stock.

Value-Reporting requires a real change from corporate executives and boards of directors, charging them with the responsibility of ensuring that all material information about the company is disseminated as quickly as possible to all interested parties simultaneously. Companies must develop sound measurement methodologies for the key non-financial drivers and intangible assets that the market finds most important. They must communicate the resulting information in an organized and structured way. In the end, we must move away from the Earnings Game to an environment in which the value drivers are visible. Once we do that, we will be able to improve the allocation of capital and our ultimate economic health.

12. Forward thinking

IFRS 3 is clearly a positive step, boosting M&A deal transparency and forcing management to take the management of their intangibles more seriously than ever before. The investment community is likely to penalise companies that fail to address the impact of IFRS 3 coherently and constructively. The onus is on management to provide robust IFRS numbers, and to explain them convincingly. From now on, effective due diligence means carefully assessing the intangible assets within potential targets, as well as properly taking into account the financial impact of any proposed acquisition. It is clear that the introduction of IFRS 3 will have very significant business implications for both CFOs and CEOs. From now on, they need to understand and be able to communicate how acquisitions will be accounted for, as well as explain precisely what has been acquired. As a general observation, senior management is likely to find itself coming under much greater scrutiny from the investment community on all future deals. The overriding advice is that management needs to understand the issues involved and plan ahead

in order to take advantage of opportunities, create headroom and avoid unpleasant surprises.

13. Summary and Recommendations

To be an effective communication device, the audit report urgently need reducing communication gap in terms of information, reporting quality, understanding and perception.

The primary focus must be on improved company reporting of intangibles in a more consistent and comprehensive way: whatever the theoretical benefits of changes to accountancy practice, efforts to find a practical way forward have not proved successful; Trade associations and other business organisations have a role in encouraging greater consistency and making sure that the value of intangible investments is widely recognised by firms, investors, shareholders and managers.

BIS already publishes league tables of investment in R&D based on company reports, a valuable source of benchmarking and information. The department should consider extending this approach to other intangible investments where sufficient information exists;

As suggested in the 2009 White Paper, *New Jobs, New Industries*, the government should encourage the development of new financial institutions at both the national and local level to meet potential funding gaps for knowledge intensive, intangible rich but physical asset poor SMEs;

New advice services should be developed to help SMEs make the best use of intangible assets: the work of the Intellectual Asset Centre in Scotland is one example of how this could be done;

There should be a cross-cutting audit of the public sector's intangible asset base as part of the next Spending Review. A key objective would be to identify how the public sector can make best use of the intangible assets it has at a time of overall spending austerity, including new forms of revenue raising;

The government should publish annual estimates of intangible investment by major sector, building on the reports published by HMT and BIS; and support the ONS in developing more robust measures for inclusion in the national accounts and international comparisons.

There is mileage in exploring the idea that as part of new institutional arrangements focused on delivering high value, knowledge based growth, there should be a national knowledge bank.

Dynamics of Micro Finance Programs in Poverty Alleviation in Bangladesh: Present Status Challenges and Policy Actions

MD. MOSTAFIZUR RAHMAN SARDER*
MD. GOLZARE NABI*

Abstract *Microfinance has evolved as a potent driver of financial inclusion in Bangladesh with much positive impact on poverty alleviation and other social development indicators. Despite massive success in terms of outreach, employment generation and empowerment of millions of poor, a large number of low-income poor people have remained excluded from the network of the financial services. The article examines achievements of microfinance industry in Bangladesh, its present challenges and prescribes policy measures to bring more unbanked poor people in the fold of financial services.*

1. Introduction

Microfinance has evolved as a potent driver of financial inclusion in Bangladesh with much positive impact on poverty alleviation and other social development indicators. The microfinance industry in Bangladesh started its operations with support from Bangladesh Bank and donors' grants during late 1970s with the objective of delivering micro financial services among the poor people for poverty alleviation. The industry has evolved from its initial focus on credit, disbursing standardized loan products and collecting obligatory savings to the development of diversified loan, flexible savings and other micro financial

* The authors are Deputy General Managers, Research Department, Bangladesh Bank. Views expressed in the article are authors' own and do not reflect the views of the institute in which they work. Corresponding author's e-mail: golzare.nabi@bb.org.bd

products. This sector has now attained maturity and entered into a dynamic phase in terms of financial inclusion, positive impacts, and sustainability.

In the microfinance sector, total loan outstanding is around TK 210 billion (USD 3.2 billion) in December 2010 disbursed among 30 million poor and savings worth TK 160 billion (USD 2.4 billion). This sector accounted for around 3 percent of GDP in 2010. The existing theoretical literature attributes the high success of micro finance programs in Bangladesh to peer group micro lending, high density of population, macroeconomic stability and liberal socio-political environment etc.

There are four main types of institutions involved in microfinance activities in Bangladesh: (a) Grameen Bank; (b) NGO-MFIs that have received licenses from Microcredit Regularly Authority (MRA); (c) Commercial and Specialized banks; (d) Government sponsored microfinance programs (e.g. through Bangladesh Rural Development Board-BRDB, cooperative societies and programs under different ministries of the Government). However, Grameen Bank and 10 large Microcredit Institutions (MFIs) represent near 90% market share of the microfinance industry. Although micro finance has positive impact on the living standard of the poor (nearly 30 million), a large portion of the poor people, hardcore poor in particular, are yet out of micro finance's network. According to a recent survey of Institute of Microfinance-In M (Access to Financial Services, Funded by UK Aid, 2011), about 41% of poor HH do not have access to any type of credit. Given this background, the paper attempts to assess the present performance and challenges of microfinance programs in Bangladesh. The objectives of the paper are two fold: first, to review present achievements and challenges of micro finance programs in Bangladesh, and second, to put forward policy options to build a strong micro finance industry capable to meet financial services of the poor people for alleviation of poverty.

The rest of the paper is organized in the following way. Review of literature is made in Section 2. Section 3 reviews the salient features of micro finance programs in Bangladesh. Section 4 analyses the achievements of micro finance programs. Section 5 analyses challenges that MFIs are facing in delivering services among the poor. Finally, Section 6 contains policy implications and conclusions.

2. Review of Literature

Now we observe phenomenal growth of studies on different issues of micro finance. There are some studies relating to target/outreach of micro finance programs such as Grosh and Baker (1995) and Meyer, Nagarajan and Dunn (2000). The major impact

studies on micro finance are BIDS (1990,1999 & 2001), Zaman (1997,1999, 2004) MRA (2010) and S. R Osmani (2012). Most studies show positive impacts on income, saving and employment of the poor, women in particular. Sustainability is vital for survival of micro finance institutions but only a few studies are undertaken to address the issue (Khandaker, Khalily and Khan, 1995; Conning, 1999 and Khalily, Imam and Khan, 2000). A summary of some Impact assessment studies, drawn from Salehuddin (2004) can be seen in Appendix IA and IB.

3. Salient Features of Micro Finance Programs in Bangladesh

- Microfinance is a broader concept than microcredit. The former includes microcredit, micro savings, micro insurance, pension and other financial products provided mainly by NGOs/MFIs among the low-income poor people. However, microcredit is the main product offered in Bangladesh. Credit services of this sector can be categorized into six broad groups: i) general microcredit for small-scale self employment based activities, ii) microenterprise loans, iii) loans for ultra poor, iv) agricultural loans, v) seasonal loans, and vi) loans for disaster management. Loan amounts up to BDT 30,000 are generally considered as microcredit; loans above this amount are considered as microenterprise loans.
- In delivery of financial services among the poor, MFIs in Bangladesh address the problems of targeting, screening, monitoring and enforcement innovatively. The problem of screening i.e. distinguishing the good (creditworthy) from the bad (not creditworthy) borrowers is solved by MFIs through formation of groups. Since all borrowers of a group are jointly liable for each other's loan and they know each other in almost all respects, a bad borrower has little chance to enter into a group. The problem of monitoring is also resolved through joint liability of all members of a group as well as close supervision of MFI's staff. Borrowers under joint liability lose right to future credit in case of a default member implying that group members monitor each other and compel debt repayments by threatening to impose social sanctions upon peers who default strategically. Though the poor have no useful physical collateral, peer pressure works as social collateral that make group members to repay loans regularly. Now MFIs conduct individual-based model vis-a-vis group based model in delivery of credit.
- Microcredit is used mainly in off-farm income generating activities (Annexure-II). Small business accounts for the highest share (43.02%) followed by livestock (18.11%), agriculture (12.23%), fisheries (4.91%), food processing (3.78%) and cottage industries (3.03%).

- The geographical concentration of NGO-MFIs in Bangladesh is high in economically advanced regions compared to that of the backward region. In June 2010, Dhaka district had the highest concentration as usual where more than 60 licensed NGO-MFIs were operating while Gazipur had the second highest concentration. The lowest concentrations were observed in the four districts i.e. Rajbari, Shariatpur, Bandarban and Rangamati where less than 5 NGO-MFIs licensed from MRA were operating.
- According to the size of institutions in terms of the number of borrowers served, MFIs are grouped into four major types: very large, large, medium and small (Annexure-III A). Two of the largest MFIs, viz., BRAC & ASA, are each serving over four million borrowers. Currently there are 5 very large, 21 large, 115 medium and 341 small MFIs operating in Bangladesh. Institutional concentration ratio is highly skewed in favour of large MFIs: just 10 of the institutions are in control of 70 percent of the market share while two largest organizations have control of over 55 percent in terms of both clients and total financial portfolios. Only 5 NGO-MFIs who are very large have 63% of total loan outstanding and client's savings while 341 small NGO-MFIs have only a share of 4% in loan outstanding and 5% in client's savings.
- Although the fund composition of NGO-MFIs is shifting, total fund has increased over time. Previously donor driven NGOs are now increasingly trying to become more dependent on local fund with the decline of foreign fund, which stood only at 2.7 percent in June 2010 (Annexure-III B). Savings from the clients (31.15 percent) and surplus income from microcredit operations (27.8 percent) appeared as two major sources of fund in 2010. Funds from Palli Karma Shahayak Foundation (PKSF), Government owned Wholesale Fund and the commercial banks account for 16.08 percent and 15.11 percent
- Both loan outstanding per borrower and savings per member are increasing gradually (Annexure-IV A). The loan outstanding per borrower has increased over the years and average growth rate of loan outstanding per borrower is around 75 percent (from Tk. 4377.11 in 2006 to Tk.7558.92 in 2010). Savings per member has also been increasing over the years. In 2006 savings per member was Tk. 1,207.34, and in 2010, it stood at Tk. 2,097.83, which is 73.7 percent higher.
- Most of the NGO-MFIs' capital adequacy ratios are generally high as their repayment rate is very high, but for a few of them the ratios are very low which could be a cause of concern for the sustainability of these NGOs (Annexure-IV B).

- The average borrowing cost and financial cost ratio of top ten NGO-MFIs are Tk. 4.46 and Tk.6.14, which are much higher compared to average of all MFIs but savings cost ratio is lower (Annexure-VA). The average savings cost ratio of 482 MFIs is Tk. 1.80 and top ten MFIs' savings cost ratio is Tk. 1.68, which is much lower. The highest savings cost ratio is TK 2.86 for CARITAS Bangladesh but its borrowing cost ratio is zero, which indicates that CARITAS does not have any commercial borrowings; all of their funds are grant received from donor. The cost structure of BRAC and BURO Bangladesh are much higher compared to average cost scenarios of the top ten as well as cost scenarios of all MFIs.
- Top ten MFIs have higher portfolio yield, interest rate spread, return on assets and operational self-sufficiency, which indicates that these top NGO-MFIs have better financial performance (Annexure-VB). The average portfolio yield of 482 NGOs is 22.71 percent whereas average portfolio yield of top ten NGOs is 25.02 percent, which is higher as they are bigger MFIs.
- A total of 62 (12.8 percent) NGO-MFIs have negative net surplus (MRA, 2010). There are different reasons for the negative surplus, the major causes of losing are: (i) High staff salary (ii) Low repayment rate (iii) Low service charge realization (iv) High loan loss provision (LLP) (v) High depreciation charge and (vi) Poor fund management.
- Microcredit Regulatory Authority (MRA) is the watchdog of microfinance industry in Bangladesh established by the Government under the "Microcredit Regulatory Authority Act -2006" to promote and foster sustainable development of microfinance sector through creating an enabling environment for NGO-MFIs in Bangladesh. As the statutory body, MRA monitors and supervises microfinance operations of NGO-MFIs. License from the Authority is mandatory to carry out microfinance operations in Bangladesh. The number of NGO-MFIs licensed from MRA stood at 610 as on February 2012.

4. Achievements

There is a close nexus between finance and growth as many seminal imperial works reveal (Levine, 1997). Providing easy access to financial services among poor by MFIs and other institutions brings myriads benefit in Bangladesh, the birthplace of modern microfinance of the world. The assessment of key impact studies also show positive impact of micro finance on the lives of the poor people. (Annexure-1A & 1B).

4.1 Potent Driver of Financial Inclusion for the Poor: In Bangladesh, MFIs are the most powerful driver of financial inclusion that leads to greater asset accumulation by the poor, their ability to smooth consumption and cope with external shocks. The Bangladesh Household Income and Expenditure Survey, 2010 reveals that MFIs including Grameen Bank are the dominant sources of loans for the poor (72.38%). Now about 30 million poor, more than half of the poor, are in the financial folds of MFIs. No other institution either public or private has been as successful as MFIs to reach the poor with finance that helps them promote income, employment and alleviate poverty.

The amount of microfinance disbursed by MFIs is increasing fast with a high recovery rate (more than 90%) in Bangladesh. Not only that, the amount of annual microcredit (around BDT 250 billion) disbursed by NGO-MFIs has already outpaced the amount of annual agricultural credit (BDT 120 billion) by state owned and private banks. Obviously, micro credit has evolved as the most powerful tool of financial inclusion in rural areas where more than 70% people live. Obviously, MFIs have emerged as the strongest part of rural finance creating momentum toward broadening and deepening of rural financial markets.

4.2 Micro credit for Poverty Alleviation via Promotion of Self-Employment:

MFIs have proved that micro borrowers are creditworthy who pay regularly with recovery rate more than 90 percent. In fact, the key success of microfinance lies in addressing lack of finance faced by the poor in generation of self-employment for poverty alleviation. Microfinance provides small funds for income generating activities and thus it creates self-employment, promotes income and helps the poor to get out of the poverty trap. Microfinance also makes consumption smooth for the poor and helps them cope with the vulnerability stemming either from temporary lack of work or natural disasters.

Microfinance programs have been able to generate self-employment for near 30 million poor households in different economic activities, off-farm activities in particular (Annexure-II). Some studies show that the generation of self-employment is the main mechanism through which microfinance has been effective in accelerating growth of income/expenditure and alleviating poverty, which is reflected in the higher labour force participation ratio among participants in microfinance programs as compared to non-participants. It is also revealed that poverty situation has improved among recipients of microfinance (Hossain, 1984, 1988; Rahman 1996; BIDS 1990, 1999 & 2001; Morduch 1998, Khandhker S.R 1998, 2003 and Zaman 1999 & 2004).

A recent paper by S. R. Osmani (2012) upholds the role of microcredit in poverty dynamics in the rural areas of Bangladesh. The paper was based on the findings from the first phase survey of long-term panel surveys covering 6500 rural households in 63 districts, and it examined the factors, including the role of microfinance, that have a causal influence on poverty dynamics. The study used the dynamic adaptation of the entitlement approach for determination of contribution of micro credit. A conservative estimate was about 5 per cent – in the sense that if microcredit had not existed rural poverty would have been almost 5 per cent higher than what it was in 2010. The contribution to the reduction of extreme poverty was found to be considerably higher – about 9 per cent.

Though poverty remained stubborn in Bangladesh for nearly two decades since Independence 1971, it began to decline appreciably since 1990 (Table-1A). S. R. Osmani (2012) rightly recognized the key players involved in poverty reduction in Bangladesh e.g. sustainable annual growth of GDP, strong inflows of external remittances and massive expansion of microfinance (Table-1B).

4.3 Promotion of Savings and Investment: MFIs have been able to defy the perception that the poor do not save. MFIs in Bangladesh initially mobilized compulsory savings but now these institutions collect different types of savings viz-a-viz obligatory savings. The outstanding of savings of MFIs stood at BDT 160 billion in December, 2010.

Table 1A: Trends in Poverty Reduction in Rural Bangladesh: 2000 to 2010

Poverty Indices	2000	2005	2010
Headcount index	52.6	43.8	33.1
Poverty gap	17.7	9.8	6.5
Squared poverty gap	4.9	3.1	1.8

Source: S.R. Osmani (2012)

Table 1B: Performance of the Bangladesh Economy: 1990 to 2010

	1990-2000	2000-2005	2005-2010
Annual Growth of GDP per capita (%)	3.1	4.0	4.8
Annual Growth of Agricultural GDP (%)	3.2	2.5	4.2
Flow of Remittances as % of GDP	3.2	5.5	9.7
Microcredit disbursement as % of GDP	n.a	1.8	3.1

Source: S.R. Osmani (2012)

MFIs influence the rural informal credit market through its impact on poor household's savings and investment. MFIs help reduce the dependency of poor on the informal money market directly through the provision of microfinance and also indirectly through the scope for increased savings by poor households. Loans from MFIs supplement their own investment and bridge the consumption need in slack season. In addition to cash savings, poor household's savings take various forms of direct investment. The value of such investment may be substantial and it may even be higher than cash savings. MFIs are expected to contribute to accumulation of both working and fixed capital of the poor. (Hossain, 1984; Rahman 1996; and Zaman 2004).

S. R. Osmani (2012) also upholds the positive contribution of microcredit in asset accumulation by the poor. Access to microcredit was found to enhance the probability of moving up the asset ladder and to reduce the probability of falling. While this is true for both poor and non-poor households, the effect is much stronger for the poor. Most of the poor borrowers started their journey in life with fewer assets compared to poor non-borrowers. But over time they have been able to accumulate assets at a faster pace in comparison with poor non-borrowers, thereby narrowing the original gap in endowments, and access to microcredit is found to have made a positive contribution in this regard. Furthermore, faster pace of asset accumulation has not remained confined only to those borrowers who have utilised the loan productively; it has also extended to those who have used the loans mainly for consumption purposes. For the latter group, access to microcredit has helped by reducing the need for asset depletion at times of crises. The study has also found that microcredit's contribution to asset accumulation has translated itself into contribution to poverty reduction. Access to microcredit reduces the probability of being poor by 2.5 per cent.

4.4 Empowerment of women: In Bangladesh, recipients of microfinance are above 90% women who have been able to raise their empowerment through involvement in income generating activities. Empowerment of women includes both material and non-material benefits achieved through participation in micro credit programs. Material benefits mean increase in income, nutrition, food security, health care facilities etc. Non- material benefits include increase in power of decision-making, self-sense of honor, respect and recognition from family members and others of the society and higher mobility. Though Goetz and Gupta (1996) reveal minimal impact of microfinance on empowerment of woman, many studies like Rahman (1996), Hashemi, Schular and Riley (1996), Mahmud (2000, 2004) show positive correlation between participation in microfinance and empowerment of woman.

4.5 Impacts on Human Capital Formation: Besides micro credit programs, some MFIs conduct non-formal education, health and other social programs, which contribute to increase in school enrollment and education of children of poor households. Most MFIs require that the members learn to sign their names. Thus MFIs have been effective in generating relevant skills and social awareness, which leads to human capital formation badly needed for socio economic upliftment of the poor. (Rahman 1996; Khandker 1998, BIDS 2001).

4.6 Employment of Large Numbers of Graduates: MFIs do not only create self-employment for millions of the poor, these institutes also generate jobs for more than 0.10 million young graduates. The continued tireless service rendered by thousands of committed and devoted graduates across the whole of Bangladesh has contributed a lot to make the microfinance industry a success in Bangladesh and the most viable model for financial inclusion of the poor of the globe. Based on information provided for the fiscal year 2010 by 482 NGO-MFIs, microfinance sector has created direct job opportunities for over 110,000 people; 82 percent of them are male and 18 percent are female (MRA, 2010).

4.7 Export of Bangladeshi Model of MFI: The success of group based microcredit lending model among the poor in Bangladesh initiated by Nobel Peace Winner Prof. Mohammad Yunus is not confined only in the territory of Bangladesh, its wave has also reached other developing as well as developed countries of the world creating hope of relief from poverty and social exclusion among millions of the poor. Such success has generated markets abroad for Bangladeshi large MFIs (e.g. BRAC, ASA) to sell their service in building MFIs.

5. Challenges

5.1 Inclusion of Hardcore Poor: Some studies report that MFIs have been able to reach among half of the poor of the country. MFIs have failed to reach the hard core poor in particular. The very poor or hardcore poor accounts for 19.9% of rural population who are often severely undernourished, marginalized and often ill or unable to work. They are excluded from microfinance for a range of causes relating to their low capacity, low self-esteem and vulnerability.

5.2 Reaching Economically Backward Region: MFIs/NGOs could not become able effectively to reach among the people of economically backward regions of the country. As a result, MFIs showed poor performance to reduce poverty in economically poor areas. It implies that the success of NGOs' operations depends

largely on the better performance of key sectors of national economy (agriculture/industry) and without Government direct support, NGOs approach is not fully effective to produce pro-poor growth in economically backward regions.

5.3 Graduation of Micro finance Recipients: Another burning issue for MFIs is to help those who graduated using microfinance and need large loan to develop SMEs.

5.4 Overlapping: It is alleged that in some cases microfinance has created debt cycles to pay the installments of loan by making fresh loan from. Now it is imperative to address the issue of overlapping for sustainability of MFIs and small borrowers.

5.5 Sustainability: The issue of sustainability has drawn much attention of all stakeholders of microfinance due to (a) higher dependence of microfinance on subsidies/donor funds (b) high interest rate and operational cost (c) interest of transforming microfinance programs into financially viable ones to attract commercial funds for scaling up programs. In Bangladesh, large MFIs have attained near sustainability but a good number of MFIs still depend on subsidized funds like Palli Karma Sahayak Foudation (PKSF) fund and donor's fund. In fact, if we want to extend outreach of microfinance among the excluded poor, and cater the demand of large loan of the graduated microfinance recipients, we need both soft and commercial fund since subsidized and donor's funds are not sufficient to meet the growing demand.

5.6 Diversification of products: So far, the focus by NGO/MFIs has mainly been on delivering credit. However, the poor need financial services covering the entire gamut - savings, loans, insurance, credit, payments, pension etc. By providing these services, NGO/MFIs can accelerate the pace of effective financial inclusion.

5.7 Governance: Good governance is essential to ensure quality of leadership and management. Governance and financial sustainability are also closely interrelated. Weak governance and management characterize many MFIs in Bangladesh. Many MFIs became club of retired persons and close relative of social elite having no understanding and commitment regarding microfinance industry. One key challenge for survival of the microfinance is to ensure accountability and transparency in overall management of MFIs.

5.9 Regulation and Supervision: The MRA is now the sole watchdog of the vast microfinance market of the country. As a new organization, it is evolving day by day. The present capacity of this regulatory organization seems to be insufficient in terms of manpower, resource base and geographical concentration (only in Dhaka). Besides, all MFIs in Bangladesh are incorporated under 4 different laws that has created many problems. There is therefore a need to bring all MFIs under one common law as Bank Company Act, 1991.

5.10 Ownership: Except Grameen Bank, all MFIs have not yet included representatives from among the clients of micro finance.

5.11 Research and Training: There is the lack of skilled manpower and research works in addressing emerging issues of microfinance.

6. Policy Options and Conclusions

Key policy options

(1) Expansion of Outreach: To enhance the outreach in remote area and provide fast services to existing customers, MFIs need cost effective channel. In this case, mobile financial services are the best options. MFIs may establish partnerships with mobile phone operators and banks to reach the unbanked low income people. Presently some MFIs are providing only foreign remittances; other mobile financial services such as deposits, person to person payments may be launched.

(2) Adequacy of Fund: MFIs need more funds to serve graduated clients and the unbanked poor people. Enhanced supply of funds for graduated clients can be made possible by (a) raising voluntary and involuntary savings of NGOs/MFIs (b) attracting more funds from commercial banks (c) increasing size of wholesale funds (PKSF) (d) introducing loan guarantee services (e) raising fund from capital markets and (f) securitization of income receivables of MFIs. Soft funds for hard core poor may be increased through greater involvement of large MFIs and donor agencies. The present allocations for different ministries/departments of the Government in serving the hard core poor must be enhanced. The fund for CSR allocated by private companies must be increased to meet various needs of the hard-core poor.

(3) Strengthening Supervisory Framework: The overall strength and capacity of MRA needs to be enhanced significantly in terms of manpower,

resource base, geographical outreach and rule making authority in order to make it capable of meeting all of its operational targets. Supervisory works must be streamlined towards ensuring good governance of MFIs, which is vital for financial and operational sustainability. Days are gone for soft loans funds; good governance is a must for continued growth of commercial funds.

(4) Broadening Ownership: To make MFIs more transparent, accountable and people-oriented, new measures may be taken to include representative from micro borrowers and non-political highly honoured professionals having good grounding on microfinance and its mission.

(5) Diversification of Products: MFIs must diversify financial products and innovate suitable products for extending horizontal and vertical outreach of microfinance with a view to addressing the financial needs of the poor. Such diversification will ensure viability of MFIs as well as its programs designed for poverty alleviation. All groups of the poor are likely to need financial services relating to savings, credit and insurance.

(6) Rational interest rate: A crucial factor to attain sustainability is the application of rational interest rate. One may argue that MFIs set high interest rate in the name of poverty alleviation and the poor people would not be able to break the vicious circle of poverty if interest rate is not lowered. This is not justified. MFIs in Bangladesh charge between 11-15 percent flat interests which is much lower than that of money lenders (more than 100%) and BRI (27%) - a successful commercial MFI in Indonesia. The interest rate of MFIs is high as compared to that of commercial banks since transactions costs are higher in dealing with small loans and taking financial intermediary directly to the Poor's doorstep. Surplus generated from this operation is revealed back through the revolving fund in order to be able to serve more clients and enhance loan size. MFIs should charge such interest rate to cover operational cost with a view to achieving sustainability and attracting huge commercial funds into microfinance industry.

(7) Programs for Hard core poor: They need support beyond subsidized funds, which includes food relief, training and health facilities. Already Grameen Bank and large MFIs have taken special programs to address the problems of hardcore poor. But well coordinated area based sufficient programs are required. Each large MFI can be given the lead role in particular economically backward area to avoid overlapping. Government support must also be continued for hardcore poor through enhanced investment in physical and social infrastructures under different Government ministries/departments, and social safety nets.

(8) National Data Base: There must be a national data base covering all institutions providing microfinance. This needs concerted efforts by MRA, PKSF and large MFIs. This database will ensure accountability and transparency in micro finance operations and remove the overlapping problems. MRA may do comprehensive multidimensional credit rating of all licensed NGO-MFIs and make them public regularly.

(9) Strengthening Research and Training Capability: MFIs are facing many emerging issues that need to be addressed for smooth development of the microfinance industry. To meet the present and future challenges, it is imperative to strengthen research and training capability of MRA.

Conclusion

Despite many initiatives from Government, private and social sector, one-third of population in Bangladesh are still passing their days in abject poverty. Since poverty is a multidimensional complex problem, microfinance alone can not eradicate poverty. Effective poverty reduction needs concerted efforts from Government, private and social sector that include maintaining sustainable growth trend in agriculture, industry and manpower export. It requires strengthening of local governments, adoption of sustainable measures for mitigation of sufferings of people affected by recurring natural disasters and population controls.

References

1. Ahmed, Salehuddin, 2004: "Microcredit and Poverty: New Realities and Strategic Issues", in attacking Poverty with Microcredit" edited by Salehuddin Ahmed and MA Hakim, UPL, Dhaka.
2. Bangladesh Institute of Development Studies (BIDS), 1990, 1999 and 2001: Various Reports on Evaluation of Poverty Alleviation Programmes in Bangladesh, Dhaka.
3. Conning J, 1999: Outreach, sustainability and leverage in monitored and peer-monitored lending, *Journal of Development Economics*, Vol-60, No.1, October, 1999.
4. Goetz and Gupta, 1996: Who takes the credit ? Gender, Power and Control over Loan Use in Rural Credit Programs in Bangladesh, *World Development* 24.
5. Grosh and Baker, 1995: Proxy Means Tests for Targeting Social Programs: Simulations and Specialization, LSMS Working Paper No.118, World Bank, Washington, DC.
6. Hashemi, Schuler and Riley, 1996: Rural Credit Programs and Women Empowerment in Bangladesh, *World Development* Vol-24.
7. Hashemi, 1997: Those left behind: A Note on Targeting the Hardcore Poor in Bangladesh In
8. Hossain, M. 1984: "Credit for the Rural Poor, The experience of Grameen Bank in Bangladesh, Research Monograph No. 4, BIDS, Dhaka.
9. Hossain, M. 1988: Credit for Alleviation of Rural poverty: The Grameen Bank in Bangladesh', Research Report 65, International Food Policy Research Institute, Washington, D.C.
10. Khalily, Imam and Khan: Efficiency and Sustainability of Formal and Quasi-formal Microfinance Programmes - An Analysis of Grameen Bank and ASA, *Quarterly Journal of The Bangladesh Development Studies*, BIDS, VOL-XXVI, June-Sept. 2000.
11. Khandker, S.R 1998: *Fighting Poverty with Microcredit, Experience in Bangladesh*, Oxford University Press, New York.
12. Khandker, S.R 2003: *Microfinance and Poverty: Evidence Using Panel data from Bangladesh*, World Bank Policy Research Working Paper 2495, Washington DC, USA.
13. Khandker, S.R, Khalily, B and Khan, Z. 1995: *Credit Program for the Poor; Household and Inter-household Impacts and Program Sustainability by BIDS and the World Bank.*

14. Levine, Ross (1997): Financial Development and Economic growth: Views and Agenda, *Journal of Economic Literature*, V-XXXV (June 1997)
15. Mahmud S, 2000 : The Gender Dimensions of Programme Participation: Who joins a Microcredit Programme and Why? *Quarterly Journal of The Bangladesh Development Studies*, BIDS, VOL-XXVI, June-Sept. 2000.
16. Mahmud S, 2004: Microcredit Programme and Women Empowerment in Bangladesh in “Attacking Poverty with Microcredit” edited by Salehuddin Ahmed and MA Hakim, UPL, Dhaka
17. Meyer, Nagarajan and Dunn, 2000. Measuring Depth of Outreaching, *Quarterly Journal of Bangladesh Institute of Development Studies (BIDS)*, Vol-XXVI, July-September, 2000.
18. Morduch J 1998: Does Microfinance Really Help the Poor: Evidence from Flagship Programs in Bangladesh: Department of Economics, Harvard University.
19. MRA (2010), NGO-MFIs in Bangladesh, Vol. 7, Microcredit Regulatory Authority, Dhaka, Bangladesh.
20. Rahman,1996: Microcredit Initiatives for Equitable and Sustainable Development Who pays,: *World Development*, Vol, 27, No. 1.
21. S. R. Osmani (2012): “Asset Accumulation and Poverty Dynamics in Rural Bangladesh: The Role of Microcredit” Working Paper No.11, Institute of Microfinance (InM), Dhaka.
22. Zaman, H: Microcredit Programs: Who Participate and to what extent: In Geoffrey Wood and Iffath Sharif edited “ Who needs Credit! Poverty Finance in Bangladesh, UPL, Dhaka 1997.
23. Zaman, H 1999: Assessing the Impact of Microcredit on Poverty and Vulnerability in Bangladesh: World Bank Policy Research Working Paper 2145 Washington DC, USA
24. Zaman, H 2004: “ The Scaling up of Microfinance in Bangladesh: Determinants, Impacts and Lessons” World Bank Policy Research Working Paper 3398, Washington DC, USA

Annexure I(A)

A Summary of Key Impact Assessment Studies

Source	Economic Indicators	Type of Change	Social Indicators	Type Change
Hossain 1988	Working capital	+		
	Non-agricultural Investment	+		
	Agricultural Investment	?	Social Investment	+
	Labour force participation rate	+		
BIDS	Income	+		
	Income	+		
1990	Expenditure	?	Child/women ratio	?
	Employment	+	School enrolment	+
	Land purchase	+		
Pitt & Khandker 1995	Various Labour Supply	+		
	Men's Labour Supply	-		
Khandker 1998/2003	Household Expenditure	+		
	Income	+		

Source: Ahmed, Salehuddin, 2004: "Microcredit and Poverty: New Realities and Strategic Issues

Annexure I(B)**Key Findings of PKSF ME Study by BIDS**

Broad Category	Economic Indicators	Type of Change	Cause of Change
Economic Impact	Income	+	
	Food Security	+	Greater Access to cultivable land through the rental market
	Wage (land poor)	+	Transport and other non-agri. activities supported by micro cre
	Employment (land poor)	+	Better access to the land rental market Wage employment in non-ag. sec
	Assets (land poor)	+	Av, lower land size than non-participants larger operational h impact of MF (poultry, livestock bicycles, rickshaw/van)
Social and other Development impacts	Fertility and contraceptive use	+	Programme participation female method dominate
	Health and nutrition	+	Programme placement effect
	Sanitation and drinking water	+	Programme participation
	Literacy and school enrolment of children		Programme participation
	Social mobility	?	
	Women's participation and household welfare	+	participation in a microcredit programme increasing women's income

Source: Ahmed, Salehuddin, 2004: "Microcredit and Poverty: New Realities and Strategic Issues"

Annexure II***Disbursement of Microfinance in Different Activities by NGO-MFIs***

Sub-Sector	% disbursement upto December 2001	% disbursement upto June 2006
Agriculture	12.77	12.23
Fisheries	4.48	4.91
Food processing	7.11	3.78
Small business	41.81	43.02
Cottage Industry	3.08	3.03
Transport	3.49	2.78
Housing	1.30	1.16
Health	0.39	0.45
Education	0.02	0.08
Livestock	20.53	18.11
Others		

Sources: CDF Statistics, Various Issues

Annexure III(A)***Types of NGO-MFIs and their Market Share in June 2010***

NGO-MFI Type	Range of Borrowers	No. of MFIs	No. of Clients	No. of Borrowers	No. of Employees	Loan Outstanding (Million Tk.)	Savings (Million Tk.)
Very Large	More than 5 Lac	5	16103056	11959193	56563	91706.30	32561.25
Large	1 Lac to 5 Lac	21	3962855	3177550	21907	23471.71	8534.28
Medium	10000 to 1 lac	115	4142141	3244888	23465	24575.01	8212.12
Small	Less than 10000	341	1238087	935661	8281	5897.96	2414.77

Source : MRA (2010)

Annexure III(B)**Fund Composition of NGO-MFIs in Bangladesh**

Source of Fund	June 2008		June 2009		June 2010	
	(Million)	(%)	(Million)	(%)	(Million)	(%)
Clients' Savings	36397.32	29.66%	40526.91	29.73%	47436.35	31.15%
Loan from PKSF	22708.58	18.50%	22666.20	16.63%	24484.12	16.08%
Loan from Commercial Banks	23487.03	19.13%	23896.37	17.53%	23006.41	15.11%
Donors' Fund	4549.07	3.71%	4110.29	3.02%	4109.29	2.70%
Cumulative Surplus	31170.02	25.39%	36261.74	26.60%	42339.27	27.80%
Other Funds	4435.49	3.61%	8847.97	6.49%	10907.40	7.16%
Total	12747.51	100.00%	136309.48	100.00%	152282.84	100.00%

Source : MRA (2010)

Annexure IV(A)**Selected Indicators of NGO-MFIs in Bangladesh**

Particulars	June, 2006	June, 2007	June, 2008	June, 2009	June, 2010
Savings per member (Tk.)	1207.34	1332.66	1448.36	1735.52	2097.83
Outstanding loan per borrower (Tk.)	4377.11	5048.38	5614.55	6188.01	7558.92
Borrower to client (member) ratio	75.05%	81.66%	81.18%	78.92%	78.03%
Savings to Outstanding loan ratio	36.75%	32.33%	31.78%	35.54%	35.56%
Borrower per Branch	1413	1484	1496	1036	1115
Member per Branch	1883	1817	1843	1312	1429
Outstanding loan per Branch (Million Tk.)	6.19	7.49	8.40	6.41	8.42
Savings per Branch (Million Tk.)	2.27	2.42	2.67	2.28	2.99

Source : MRA (2010)

Annexure IV(B)**Selected Ratio Analysis of Top NGO-MFIs in Bangladesh**

Name of NGO-MFIs	Capital Adequacy Ratio (%)	Loan Outstanding to Borrower Ratio (in times)	Ratio of Classified loans to Total loan Outstanding (%)
BRAC	30.01	2.80	7.20
ASA	80.07	14.10	2.70
Buro Bangladesh	18.40	1.30	3.50
Thengamara Mohila Sabuj Sangha (TMSS)	22.30	4.98	3.20
Jagorani Chakra Foundation	18.68	1.15	9.00
Society for Social Service	15.30	1.51	2.00
Shakti Foundation for Disadvantage Women	25.53	2.11	1.30
United Development Initiatives for Programmed Actions-UDDIPAN	11.10	1.51	2.00
RDRS Bangladesh	62.05	2.40	19.60
CARITAS Bangladesh	43.03	100.00	15.00

Source : MRA (2010)

Annexure V(A)**Cost Scenario of Top NGO-MFIs in Bangladesh**

Name of NGO-MFIs	Saving cost Ratio	Borrowing cost Ratio	Financial cost Ratio	General & Admin.cost Ratio	Total Operating cost for L/O
	Per 100Tk.	Per 100 Tk.	Per 100Tk.	Per 100 Tk.	Per 100Tk.
	(a)	(b)	(c)=(a+b)	(d)	(e)=(c+d)
BRAC	2.59	5.87	8.46	11.83	20.28
ASA	0.62	0.39	1.01	16.38	17.39
Buro Bangladesh	1.72	11.16	12.88	17.98	30.86
Thengamara Mohila Sabuj Sangha (TMSS)	0.64	3.18	3.82	15.37	19.18
Jagorani Chakra Foundation	1.63	4.57	6.20	11.18	17.38
Society for Social Service	2.21	4.55	6.76	15.21	21.97
Shakti Foundation for Disadvantaged Women	1.09	8.46	9.55	14.94	24.48
United Development Initiatives for Programmed Actions-UDDIPAN	1.11	4.22	5.33	14.87	20.20
RDRS Bangladesh	2.32	2.24	4.56	18.45	23.01
CARITAS Bangladesh	2.86	0.00	2.86	13.47	16.33
Average of Top Ten NGOs	1.68	4.46	6.14	14.97	21.11
Average of 482 NGOs	1.80	2.23	4.03	17.99	22.02

Source : MRA (2010)

Annexure V(B)

Sustainability Analysis of Top NGO-MFIs in Bangladesh

Name of NGO-MFIs	Portfolio Yield	Interest Rate Spread	Return on Asset (ROA)	Operational Self-Sufficiency (OSS)
BRAC	29.52	21.07	3.64	114.29
ASA	26.99	25.97	9.28	143.55
Buro Bangladesh	31.62	18.73	0.86	97.54
Thengamara Mohila Sabuj Sangha (TMSS)	22.94	19.13	2.95	110.32
Jagorani Chakra Foundation	22.53	16.33	4.88	125.40
Society for Social Service	25.87	19.12	4.36	108.56
Shakti Foundation for Disadvantaged Women	26.46	16.92	0.71	101.96
United Development Initiatives for Programmed Actions-UDDIPAN	23.58	18.25	3.65	107.45
RDRS Bangladesh	22.78	18.22	2.69	84.88
CARITAS Bangladesh	19.73	15.06	2.47	109.74
Average of Top Ten NGOs	25.02	18.88	3.59	110.37
Average of 482 NGOs	22.71	18.10	3.57	107.84

Source : MRA (2010)

Debt Management and OMO of Bangladesh Bank

IMAM ABU SAYED*

Abstract *Government's borrowing from the banking system for financing the annual development program (ADP) is the momentous financial portfolio of Bangladesh. It often contains complex financial structures due to operational procedure and fluctuation of market. Specific risk of government securities for valuation is zero according to Basel II. Investment in government securities is exposed market risk. Effectual debt structures with proper revenue collection facilitate governments reducing their exposure to interest rate, currency and other risks for income inequalities and poverty alleviation. To implement the ADP in situations of shortage of required foreign and nonbank funds, the government needs to borrow money from the deposit money banks (DMBs) and Bangladesh Bank (BB). Government borrowing through overdraft has inflationary outcome. Government debt from the DMBs through treasury bills and bonds repaying the BB its past loan will reduce the liquidity. In order to offset this situation BB needs to inject money through repo instruments of open market operation (OMO) to the banking system. As a result, RM grows with lower money multiplier and financial deepening impacting growth rates of the economy. Amortization, securitization and gradual offload of government debt in case of BB will allow dynamism in the market to flourish. Foreign fund is required to improve the asset quality of M2 and RM absorbing the shocks for economic growth. The objective of this paper is to gain insight regarding underlying factors related to interest rate, exchange rate and inflation in the country.*

* Author is a Joint Director (Research), Monetary Policy Department (MPD), Bangladesh Bank. Views expressed in this paper are his own and do not reflect those of Bangladesh Bank. He is grateful to Sudhir Chandra Das, Executive Director, Bishnu Pada Saha, General Manager, Jagannath Chandra Ghosh, Deputy General Manager, Debt Management Department, and MPD officials of Bangladesh Bank for their valuable comments.

Key words: *Monetary and credit (M2) programing, budget systems, debt management and monetary policy.*

JEL classification: *E51, H61, H63 and E52.*

Introduction

To understand the DMBs, financial institutions and BBs investment in the government securities operational procedure of debt management and OMO have been analyzed. Shortfall of excess reserves of banks owing to currency growth increases the inter-bank call money rate and general interest rate. Increase in overall net short position of banks move up the exchange rate reducing international reserves. Lower amount of net foreign asset (NFA) in broad money (M2) and reserve money (RM) comparing net domestic asset (NDA) respectively impact the asset quality mix and ability of payment for credit rating. Unplanned borrowings of the government from the DMBs reduce the credit expansion to the private sector. Following the operational procedure of debt management Primary dealers (PDs) submit their bids in the auction of government securities stating respective amount and rate. Auction committee determine the cut-off rate bearing in mind the macroeconomic variables. Repo rate, reverse repo rate and sale/ buy of foreign exchange may also be impacted by the auction committee considering availability of liquidity. Transaction of government treasury bills and bonds are held in the over the counter market (OTC) due to lack of secondary market. By buying and selling government securities, BB affects the aggregate level of balances available in the banking system. BB implements monetary policy primarily by conducting OMO. In OMO selling of BB bills mop up the liquidity from the banking system. In case of repo the liquidity increases and reverse repo dried up the liquidity. If BB wants to rouse the market it may follow an expansionary monetary policy separating budgetary and monetary requirements. The usual aim of OMO is to put in order the short term interest rate and the supply of base money (RM), and thus indirectly manage the total money supply. This involves meeting the demand of RM at the target interest rate by buying and selling government securities and related financial instruments. BB bills more effectively mop-up the liquidity comparing government securities from the DMBs. Monetary variables such as inflation, interest rates or exchange rates are maintained by OMO.

Effectual debt structures with proper revenue collection facilitate governments reducing their exposure to interest rate, currency and other risks for income inequalities and poverty alleviation. To implement the annual development

program (ADP) because of required foreign and nonbank funds leads the government to borrow money from the deposit money banks (DMBs) and BB. Government borrowing through overdraft from BB has inflationary outcome. Government debt from the DMBs through treasury bills and bonds repaying the BBs past due loan will reduce the liquidity. In order to offset this situation BB need to inject money through repo, special repo and liquidity facility (LSF) instruments of open market operation (OMO) to the banking system. Buying of foreign exchange also increases the Taka liquidity in the banking system of Bangladesh. As a result, RM grows with lower money multiplier and financial deepening impacting call money rates, exchange rates and inflation of the economy. Foreign fund is required to improve the asset quality of M2 and RM absorbing the shocks for economic growth. The intention of this paper is to gain insight regarding underlying factors in monitoring interest rate, exchange rate and inflation in the country.

Government's debt for realizing ADP from banking system is the momentous financial portfolio of Bangladesh. The success of monetary programming depends on planned government borrowing from the banking system. It often contains complex financial structures due to operational procedure and fluctuation of market. Specific risk of government securities for valuation is zero according to Basel II. Investment in government securities is exposed with market risk. Amortization, securitization and gradual offload of government debt in case of BB will allow the market dynamics cleaning the balance sheet of BB is another schema of this paper.

Research methodology

Qualitative and quantitative analysis has been made in this paper. Macroeconomic and microeconomic theory has been verified with complex real term monetary outcome. Banking and finance data is used intensively before making inference related to financial securities. OMO, yield curve, extrapolation and interpolations of securities, Basel accord and government securities auction procedure have been discussed to facilitate the financial interactions of the variables.

Organization of the paper

Literature survey on course of debt management is discussed in chapter-I. Salient features of Government Treasury Bills and Bonds in Bangladesh can be found in chapter-II. Chapter-III deals with OMO and monetary policy. Conclusion is described in chapter- IV.

Chapter I

Literature survey on course of debt management and OMO

Literature survey on debt management and OMO is conducted to gain wide-ranging knowledge in the multidimensional perspective. Adepoju, Adenike Adebunola and **Obayelu, Abiodun Elijah (2007)** has reviewed the roles of debt management practices on sustainable economic growth and development with particular emphasis on Nigeria. Information was generated extensively from literature, the Nigeria Central Bank and National Bureau of Statistic reports. The analyses of the data collected with descriptive statistics shows that, availability of access to external finance strongly influences the economic development process of any nation. Debt is an important resources needed to support sustainable economic growth. But a huge external debt without servicing as it is the case for Nigeria before year 2000 constituted a major impediment to the revitalization of her shattered economy as well as the alleviation of debilitating poverty. The much needed inflow of foreign resources for investment stimulation, growth and employment were hampered. Without credit cover, Nigerian importers were required to provide 100 percent cash covers for all orders and this therefore placed them to a competitive disadvantage compared to their counterparts elsewhere. Failure of any owing country to service her debt obligation results in repudiation risk preventing such to obtain new loans since little or no confidence will be placed on the ability to repay. It will also undermine the effort to obtain substantive debt relief over the medium term with a tremendous increase in interest, arrears and other penalties. This will subsequently depress the economy both in the long and short runs. Best arrangement in debt payment must be put in place from time to time in response to changes in the economy and the polity. Debt can only be productive if well managed so as to make the rate of return higher than the cost of debt servicing.

Hai-Chin Yu (Taiwan), Ken H. Johnson (USA), Der-Tzon Hsieh (Taiwan) -2008 using an effective sample of 3,453 observations selected from the Taiwanese stock exchange attempts to reconcile divergent outcomes from the extant literature on debt structure (public, bank, and non-bank private debt). Sampled firms from this emerging market generally acquire debt from both public and private sources, with a strong preference for bank debt, suggesting, among other things, that bank debt and public debt complement each other rather than acting as substitutes.

In the United States, as of 2006 the Fed sets an interest rate target for the Fed funds (overnight bank reserves) market. When the actual Fed funds rate is higher than the target, the desk will usually increase the money supply via a repo

(effectively lending). When the actual Fed funds rate is less than the target, the desk will usually decrease the money supply via a reverse repo (effectively borrowing). The European Central Bank has similar mechanisms for their operations; however, it uses a four-tiered approach with different goals: beside its main goal of steering and smoothing Eurozone interest rates while managing the liquidity situation in the market the ECB also has the aim of signalling the stance of monetary policy with its operations.

The regular weekly “main refinancing operations” and the monthly “longer-term refinancing operations” provide liquidity to the financial sector, while ad-hoc “fine-tuning operations” (in the form of reverse or outright transactions, foreign exchange swaps and the collection of fixed-term deposits) aim to smooth interest rates caused by liquidity fluctuations in the market and “structural operations” are used to adjust the central banks’ longer-term structural positions vis-a-vis the financial sector.

The Swiss National Bank currently targets the 3 month Swiss franc LIBOR rate, and borrows or lends Swiss francs directly with Swiss banks (in other words, without using repos) on an almost daily basis. These borrowings or loans are typically made for 1 day or 1 week, but may be as long as 1 month. In the U.S., the Federal Reserve (Fed) most commonly uses overnight repo agreements (repos) to temporarily create money, or reverse repos to temporarily destroy money, which offset temporary changes in the level of bank reserves.

The Fed also makes outright purchases and sales of securities through the System Open Market Account (SOMA) with its manager over the Trading Desk at the New York Reserve Bank. The trade of securities in the SOMA changes the balance of bank reserves, which also affects short term interest rates. The SOMA manager is responsible for trades that result in a short term interest rate near the target rate set by the Federal Open Market Committee (FOMC), or create money by the outright purchase of securities. Very rarely will it permanently destroy money by the outright sale of securities. These trades are made with a group of about 19 banks or bond dealers who are called primary dealers. Money is created or destroyed by changing the reserve account at a bank. The Fed has conducted open market operations in this manner since the 1920s, through the Open Market Desk at the Federal Reserve Bank of New York, under the direction of the Federal Open Market Committee.

The Eurosystem’s regular open market operations consist of one-week euro liquidity-providing operations (main refinancing operations or MROs) as well as three-month euro liquidity-providing operations (longer-term refinancing

operations or LTROs). MROs serve to steer short-term interest rates, to manage the liquidity situation, and to signal the stance of monetary policy in the euro area, while LTROs aim to provide additional, longer-term refinancing to the financial sector. Currently, the regular operations are complemented by euro liquidity-providing operations with a maturity of (around) one, six, twelve and thirty-six months as well as US-dollar liquidity-providing operations. In addition, the Eurosystem has launched two Covered Bond Purchase Programmers (CBPP, which ended in June 2010 and CBPP2, which started in November 2011) in order to purchase euro-denominated covered bonds and, since 10 May 2010, it has conducted interventions in debt markets under the Securities Markets Program (SMP). The liquidity provided through the SMP is currently absorbed by weekly collections of fixed-term deposits.

India's Open Market Operation is much influenced by the fact that it is a developing country and the capital flows are much different than other developed countries. Thus Reserve Bank of India, being the Central Bank of the country, has to make policies and use instruments accordingly. Prior to the 1991 financial reforms, RBI's major source of funding and control over credit and interest rates was the CRR (Cash reserve ratio) And the SLR (Statutory Liquidity Ratio). But post the reforms, the use of CRR as an effective tool was de-emphasized and the use of Open market operations. OMO is more effective in adjusting market liquidity.

The two traditional types of OMO used by RBI:

- a. Outright purchase (PEMO): Is outright buying or selling of government security. (Permanent).
- b. Repurchase agreement (REPO): Is short term, and are subject to repurchase.

But even after sidelining CRR as an instrument, there was still less liquidity and skewedness in the market. And thus on the recommendations of the Narshiman Committee Report(1998), the RBI brought together a Liquidity Adjustment Facility (LAF). It commenced in June, 2000 and it was setup to oversee liquidity on a daily basis and monitor market interest rates. For the LAF, two rates are set by the RBI: Repo rate and reverse repo rate. Repo rate is applicable while selling securities to RBI (Thus daily injection of cash flow(liquidity)), while reverse repo rate is applicable when banks buy back those securities(Absorption of liquidity). Also, these interest rates that are fixed by the RBI also help in determining other market interest rates.

India experiences large capital inflows every day, and even though the OMO and the LAF policies were able to withhold the inflows, another instrument was

needed to keep the liquidity intact. Thus on the recommendations of the Working Group of RBI on instruments of Sterilization (December, 2003), a new scheme known as the Market stabilization scheme was set up. The LAF and the OMO were dealing with day to day liquidity management, whereas the MSS was set up to sterilize the liquidity absorption and make it more enduring. Under this scheme the RBI issues additional T-bills and securities to absorb the liquidity. And the money goes into the Market Stabilization Scheme Account (MSSA). And the RBI cannot use this account for paying any interest or discounts and cannot credit any premiums to this account. And the Government in collaboration with the RBI fixes a ceiling amount on the issue of these instruments. But for an open market operation instrument to be effective there has to be an active securities market for RBI to make any kind of effect on the liquidity and rates of interest.

Chapter II

Salient features of Government Treasury Bills and Bonds in Bangladesh

Government treasury bills and bonds have number of issues to consider include overall liquidity, inter-bank call money rate, deficit budget financing need of the government and credit rating. These factors play a role in determining the value of government securities and the extent to which it fits in the portfolio. PDs are required to quote two-way price for trade of government securities. PDs are needed to underwrite according to their respective share against the announced amount of government securities in a particular auction. Banks, financial institutions, insurance company, corporation, pension funds, resident and non-resident individuals and institution can participate in the auction. These government securities are freely saleable and transferable. Non-resident individuals and institutions can apply using foreign currency (FC) accounts. The purchased securities by the non-resident are not transferable to resident within one year. These securities are easily transferable among non-resident. The profit and sale value of the securities are easily transferable in foreign currency after tax. The minimum face value of the government securities is Tk. 1.0 lac. Applied amount of the securities should be divisible by Tk.1.0 lac (Tk. one hundred thousand). Only 15 PDs can participate in the primary auctions. At the same time, others can apply through PDs. Government securities can also be issued to BB in accordance to the rate set by the auction committee. The outstanding amount of government treasury bills and bonds in the primary auction is Tk.13311.00 crore and Tk.60384.47 crore respectively at the end of February, 2012. Required unencumbered approved securities portion 13% of demand and time deposit of

DMBs (out of 19% SLR) is approximately Tk.54056.00 crore for that stipulated period. The interest amount of government treasury bills and bonds is duly addressed in the current account of revenue budget of the government. The deficit financing of the government including local and foreign borrowing for implementing ADP is limited to 5% of GDP. Proper revenue collection will rationally impact fiscal and monetary policy reducing income inequalities for poverty alleviation.

Face Value/ Par value : Face value (also known as the par value or principal) is the amount of money a holder will get back at the end of bond maturity. Treasury bills of different tenor are submitted at discount price and received at par value (Tk.100) at the end of the maturity. Newly issued bond usually sells at the par value. Government bonds normally calculated with par value of Tk.100. What confuses many people is that the par value is not the price of the bond. A bond's price fluctuates throughout its life in response to a number of variables. When a bond trades at a price above the face value, it is said to be selling at a premium. When a bond sells below face value, it is said to be selling at a discount.

Coupon rate (interest rate): Coupon is the amount the bondholder receives as interest payments. It's called a "coupon" because sometimes there are physical coupons on the bond that can be tear off and redeem for interest. However, this was more common in the past. Nowadays, records are more likely to be kept electronically. Subsidiary general ledger (SGL) is maintained for government securities. Government bonds pay interest every six months. The coupon is expressed as a percentage of the par value. If a bond pays a coupon of 10% and its par value is Tk.100, then it'll pay Tk.10 of interest a year. A rate that stays as a fixed percentage of the par value like this is a fixed-rate bond. Another possibility is an adjustable interest payment, known as a floating-rate bond. In this case the interest rate is tied to market rates allowing variability through an index, such as the rate on US Treasury bills. It may be happened investors will pay more for a high coupon than for a low coupon. All things being equal, a lower coupon means that the price of the bond will more over the life of bond.

Maturity : Maturity date is the date in the future on which the investor's principal will be repaid. A bond that matures in one year is much more predictable and thus less risky than 20 years government bond. Therefore, in general, the longer the time to maturity, the higher the interest rate. Also, all things being equal, a longer term government bond will fluctuate more than a shorter term bond.

Issuer : Issuer of a bond is a crucial factor to consider, as the issuer's stability is the main assurance of getting paid back. Government is far more secure than any

corporation. Its default risk (the chance of the debt not being paid back) is extremely small and virtually government securities are known as risk-free assets. The reason behind this is that a government has ability to impose tax. A company, on the other hand, must continue to make profits, which is far from guaranteed. This additional risk means corporate bonds must offer a higher yield in order to attract investors. This is known as risk/return trade-off.

Operational procedure: auction of Bangladesh Government Treasury Bills

In the national budget the government decide how much money they want take from the banking system for deficit financing. The government bills are issued through a treasury style French Auction. Highest to lowest bids with higher rate is accepted as cut-off price. Ministry of Finance (MOF) and BB prepare an auction calendar taking into account borrowing provision for instance Tk.18000.00 crore in a financial year. This amount may be changed considering the pace of development works and foreign financing. Government usually have access to money less than 10% through short term instruments and around 90% money of declared amount (Tk.18000.00 crore) through long term instrument. This ratio is changeable by the government. 91-Day, 182-Day and 364-Day government treasury bills are short term instruments. 5-Year, 10-Year, 15 Year and 20 Year government treasury bonds are long term instruments. Readily available 15 PDs (12 banks and 3 non banks) submit their bids mentioning respective amount and rate in the stipulated auction considering the acknowledged amount say Tk. 300.00 crore. Auction amount is pre announced for instance Tk.300.00 crore in a particular auction. Obligation amount in the auction varies among PDs for illustration Sonali Bank need to submit 9% of declared amount and for financial institutions the required participation rate is 1%. Auction committee consists with MOF and BB determines the cut-off price from lowest to highest price of the auction of Government Treasury Bill. If the price is low the rate will be high and in case of higher price the rate will be low. Consequently, the quoted PDs lower price below the cut-off rate will get higher rate. The PD will get different rate below the cut-off rate. As the rate diverge BB calculate weighted average rate (WAR) for the yield curve of government treasury bills (Table-1). Yield curve is the relation between interest rate and different maturity of government treasury bills and bonds. Government treasury bills are sold on discount basis. PDs deposit discount amount Tk.98.00 in the BB and receive face value Tk.100.00 at maturity. Banks are reported treasury bill and bonds price at cost. The outcome of BB's action is aptly reflected in the yield curve of different maturities providing short run and long run rate preferably with buyback facility in bonds allowing variability in the business cycle (time path).

In the auction stated at Table -1 the committee has decided to accept the bids(s) up to cut- off offer price Tk 97.4421 with 5.25% rate. Total amount received from the competitive bids is Tk 255.50 crore. Distributed amount to the PDs is Tk.

Table 1: Auction of 182-Day Government Treasury Bill.

Auction amount Tk.350.00 Crore

(Tk. in crore)

Sl no.	Name of BIDDER	Offer Price	Implicit yield to Investor in %	Face Value	Cumm. Face Value	Offer Value of Bills	Weighted Average Price	Weighted Average Yield
1.	NCCBL	97.5134	5.10	28.00	28.00	273,037,500.00	97.5134	5.10
2.	Jamuna Bank Ltd.	97.5134	5.10	24.50	52.50	238,907,830.00	97.5134	5.10
3.	Sonali Bank Ltd.	97.5039	5.12	31.50	84.00	307,137,285.00	97.5098	5.11
4.	Mercantile Bank Ltd.	97.4896	5.15	28.00	112.00	272,970,880.00	97.5048	5.12
5.	Uttara Bank Ltd.	97.4850	5.16	28.00	140.00	272,958,000.00	97.5008	5.13
6.	Prime Bank Ltd.	97.4659	5.20	28.00	168.00	272,904,520.00	97.4950	5.14
7.	National Bank Ltd.	97.4659	5.20	28.00	196.00	272,904,520.00	97.4908	5.15
8.	Agrani Bank Ltd.	97.4421	5.25	31.50	227.50	306,942,615.00	97.4841	5.16
9.	Southeast Bank Ltd.	97.4421	5.25	28.00	255.50	272,837,880.00	97.4795	5.17

94.50 crore with accepted offer price and rate Tk 97.4421 and 5.25 % correspondingly (Table-2). Auction committee prudently settle on the price and rate in view of key monetary indicators of the country. 91-Day government treasury bill rate refers as risk free rate or reference rate. This rate is used as direction rate to calculate deposit rate, lending rate and call money rate accommodating risk for example.

Calculation procedure of Treasury Bill

Implicit yield (**2.02%**) = $[(100 - 99.5000 \text{ (offer price)}) \times 365 \times 100] / (99.5000 \text{ (offer price)} \times 91) \text{ (duration of the bill)}$.

Offer price (**99.50**) = $(365 \times 100 \times 100) / ((91 \times 2.02) + (365 \times 100))$

Offer value (**99.50**) = $(99.50 \text{ (Offer price)} \times 100) \text{ (Face value)} / 100$

Weighted price (**99.50**) = $(199.0 \text{ (Cumulative offer value)}) \times 100 / 200 \text{ (Cumulative face value)}$.

Table 2 : Distribution to PDs

1	Janata Bank Ltd	97.4421	5.25	31.50	287.00	306,942,615.00	97.4754
2	ILFSL	97.4421	5.25	3.50	290.50	34,104,735.00	97.4750
3	Mutual Trust Bank.	97.4421	5.25	24.50	315.00	238,733,145.00	97.4724
4	IPDC	97.4421	5.25	3.50	318.50	34,104,735.00	97.4721
5	LBFL	97.4421	5.25	3.50	322.00	34,104,735.00	97.4718
6	AB Bank Ltd.	97.4421	5.25	28.00	350.00	272,837,880.00	97.4694

Corresponding Yield (**2.02%**) = $[(100-99.50 \text{ (Weighted Average Price)}] \times 365 \times 100 / (99.50 \times 91\text{-day})$.

Operational procedure: auction of Government Treasury Bonds.

15 PDs are also submits bid quoting coupon rate and relevant amount for government treasury bonds. The auction committee fix the cut-off rate. The number of PDs can be changed. If the submitted coupon rate (8.24%) of PD is lower than cut-off rate (8.25%) afterwards price of the bond will be higher at Tk. 100.0403 and respective PD need to deposit premium amount Tk.181350 in order to get higher yield (8.25%) demonstrated in the Table-3. As a result, only cut-off rate is used in the yield curve of government treasury bond. In order to fixing the cut-off rate of bonds among others the auction committee consider overall liquidity (Table-4).

If the required auction amount is Tk. 300.00 crore and submitted amount is Tk. 350.00 crore by the 15 PDs in a particular auction and the auction committee eventually select up to serial no.10 bid as cut-off rate covering Tk.250.00 crore then Tk. 50.00 crore is indispensable to distribute among rest 5 PDs on pro rata basis. Here to determine pro rata amount for Sonali Bank $Tk.13.50((27 \times 50)/100)$ individual PD's applied amount Tk. 27.00 crore (9% of Tk.300.00 crore) will be multiplied by Tk. 50.00 crore (distribution amount) and the term will be divided by Tk. 100.00 crore.

Distribution process of Government Treasury Bond

In a particular auction of Tk. 500 crore the committee has decided to accept the bids up to cut-off offer rate 8.25% amounting Tk. 455.00 crore (Table-5). Distribution amount to the PDs is Tk. 45.00 at cut-off rate 8.25% (Table-6).

Table 3 : Auction of 5-Year Government Treasury Bond.

Sl no	Name of BIDDER	Offered amount (Crore-Tk.)	Offered Yield	Cumulative offered amount
1.	Sonali Bank Ltd.	45.00	8.2400%	45.00
2.	Agrani Bank Ltd.	45.00	8.2500%	90.00
3.	Janata Bank Ltd.	45.00	8.2500%	135.00
4.	NCCBL	40.00	8.2500%	175.00
5.	AB Bank Ltd.	40.00	8.2500%	215.00
6.	Uttara Bank Ltd.	40.00	8.2500%	255.00
7.	Mercantile Bank Ltd.	40.00	8.2500%	295.00
8.	Prime Bank Ltd.	40.00	8.2500%	335.00
9.	Southeast Bank Ltd.	40.00	8.2500%	375.00
10.	Mutual Trust Bank.	35.00	8.2500%	410.00
11.	Jamuna Bank Ltd.	35.00	8.2500%	445.00
12.	LBFL	5.00	8.2500%	450.00
13.	ILFSL	5.00	8.2500%	455.00
14.	IPDC	5.00	9.1100%	460.00
15.	National Bank Ltd.	40.00	9.2500%	500.00

**Table 4 : Liquidity position of the scheduled banks
(As of end December, 2011)**

Bank Group	(Tk. in crore)					
	Cash in tills plus Balances with Sonali bank	Balances with Bangladesh Bank	Unencumbered Approved Securities	Total liquid assets	Required liquidity (SLR)	Excess liquidity
	1	2	3	4=1+2+3	5	6=4-5
State owned Banks	1407.60	7815.55	28423.63	37646.78	20625.7	17021.06
Private Banks (Other than Islamic)	3951.20	13965.88	35001.08	52918.16	37389.2	15528.89
Private Banks (Islamic)	1342.45	7479.76	3003.32	11825.53	8167.33	3658.20
Foreign Banks	432.78	4830.93	4008.76	9272.47	5691.11	3581.36
Specialised Banks*	305.21	1253.53	949.00	2507.74	1994.65	513.09
Total	7439.24 (+6.52)	35345.65 (+30.96)	71385.79 (+62.53)	114170.68	73868.08	40302.60

Source : Major Economic Indicators, MPD, BB

Note : Figures in brackets indicate sectoral share in the total liquid assets

** SLR does not apply to Specialised banks (except BASIC Bank) as exempted by the Government .*

Mentioned auction procedure of Bangladesh Government Treasury Bonds (BGTB) and T Bills may be changed over time according to the overall liquidity perspective of the economy. New auction procedure effective from August, 2012 can be found in Table-7.

Effective from August, 2012 BB introduces 12 PD banks new underwriting obligations and mandatory allocation for 25 non PD banks in auction of Government Treasury Bills and Bonds. According to the revised auction procedure 12 PD bank will assume 60% and 25 non PD banks will assume 40% considering their total demand and time liabilities (TDTL) of the unsubscribed amount of auction. Among 60% of the notified amount 12 PD banks amounts 50% will be distributed according to TDTL and rest 50% will be distributed equally.

Following new auction procedure Tk. 250.00 crore has been considered as successful bids in a particular auction against notified amount Tk. 650.00 crore of 10-year BGTB. Devolvement amount on Bangladesh Bank for instance is Tk. 1.10 crore. BBs assumed amount depends on monetary indicators of the economy

Table 5 : Auction of Treasury Bond

Sl no	Name of BIDDER	Offered amount (Crore-Tk.)	Offered Yield	Cum. offered amount	Calculated Price of the bond (per Tk.100)	Premium payable (in Tk.)	Half yearly coupon amount in Tk.
1.	Sonali Bank Ltd.	45.00	8.2400%	45.00	100.0403	181350	18562500
2.	Agrani Bank Ltd.	45.00	8.2500%	90.00	100.0000	0	18562500
3.	Janata Bank Ltd.	45.00	8.2500%	135.00	100.0000	0	18562500
4.	NCCBL	40.00	8.2500%	175.00	100.0000	0	16500000
5.	AB Bank Ltd.	40.00	8.2500%	215.00	100.0000	0	16500000
6.	Uttara Bank Ltd.	40.00	8.2500%	255.00	100.0000	0	16500000
7.	Mercantile Bank Ltd.	40.00	8.2500%	295.00	100.0000	0	16500000
8.	Prime Bank Ltd.	40.00	8.2500%	335.00	100.0000	0	16500000
9.	Southeast Bank Ltd.	40.00	8.2500%	375.00	100.0000	0	16500000
10.	Mutual Trust Bank.	35.00	8.2500%	410.00	100.0000	0	14437500
11.	Jamuna Bank Ltd.	35.00	8.2500%	445.00	100.0000	0	14437500
12.	LBFL	5.00	8.2500%	450.00	100.0000	0	2062500
13.	ILFSL	5.00	8.2500%	455.00	100.0000	0	2062500

Table 6 : Distribution to PDs

14.	IPDC	5.00	8.2500%	460.00	100.0000	0	2062500
15.	National Bank Ltd.	40.00	8.2500%	500.00	100.0000	0	16500000

observed by the auction committee. In the auction **unsubscribed** amount 60% of Tk. 398.90 crore [Total auction amount 650.00 - 251.10 (auction amount 250.00 + devolve amount on BB 1.10)] or Tk. 239.34 crore was distributed to 12 PD bank and 40% or Tk. 159.56 crore was distributed to the 25 non-PD bank. It may

Table 7 : New auction procedure of 10 year BGTB

Particulars	Bids offered				Bids accepted			
	Total bids	Cumulative offered amount (Crore-Tk)	Minimum offered yield	Maximum offered yield	Total bids	Cumulative accepted amount (Crore-Tk)	Amount payable by bidder	Coupon rate
	1	2	3	4	5	6	7	8
10-year BGTB	08	79.63	11.7500 %	12.1000 %	05	250.00	2500000000.00	11.75%
Devolvement on BB						1.10	11000000.00	
Devolve/Distributed to PD						239.34	2393400000.00	
Devolve/Distributed to non-PD						159.56	1595600000.00	
Total	08	79.63			05	650.00	650,0000000.00	

be noted that PD bank's 50% of Tk. 239.34 crore was distributed according to the underwriting obligation of each bank considering total demand and time liabilities. Rest 50% was equally distributed to the 12 PD bank. The same procedure is applicable for Government Treasury Bills.

Calculation procedure of Treasury Bond

Bond Pricing (yield based multiple price auction) : In order to get bond price we can use the insert function of Microsoft Excel menu selecting Price option (settlement, maturity, rate, yield, redemption, frequency, basis). Incorporating relevant data in the particular field we obtain the Price (15-Feb-12,15-Feb-17,10%,10%,100,2,1)

Here,

Settlement= Security's settlement date: 15-Feb-12 (on which the security is bought or sold:1day added for leap year).

Maturity=Maturity date: 15-Feb-17(the date when security expires).

Rate= Security's annual coupon rate: 10% (cut off yield rate of particular auction).

Yield= Security's annual yield: 10% (quoted by the bidder in a particular auction).

Redemption= 100(face value).

Frequency= 2 (for semi-annual coupon rate).

Basis=1(actual/actual).

Indistinguishable yield and coupon rate (10%) will lead the bond price at par (Tk.100.00). Stated 9.50% yield and 10% coupon rate will resolve bond price at Tk.101.95 (premium). In case of 10.50% current yield and 10% coupon rate the bond price will be Tk.98.09 (discount). Tag along mark to market system we can evaluate the bond price according to changing yield. In the amortized cost system we need to deduct premium 1.95(101.95-100) over the remaining life time of bond using straight line or effective rate method to reach bond face amount Tk.100 in the balance sheet of a company. Mark to market method is used in Bangladesh for held for trade securities (HFT). Amortized cost system is used for held to maturity (HTM) securities. For statutory liquidity requirement (SLR) of BB banks can use up to 85% HTM and 15% HFT government securities (unencumbered approved securities). This requirement may be transformed depending on regulator (BB).

The following table illustrates the effective interest rate method of amortizing Tk.4100 (premium) on a corporation's bonds payable (Table-8).

For mark to market and amortized cost system company can use extrapolation and interpolation method to get bond yield. Certain amount of government outstanding blocked debt taken through overdraft from BB can also be amortized following 10 years schedule improving the balance sheet of BB.

Extrapolation of bond yield rate

Due to lack of secondary market the yield for 2.5 year of a 5 year bond using yield curve rate of related tenure can be premeditated as:

5year yield(11%) – ((10 year yield(12%)-5 year yield(11%))/10-5)×2.5 (period passed:2+0.5(26weeks/52weeks)). $11 - (((12-11)/5) \times 2.5) = 10.50\%$

Interpolation of bond yield rate

Yield for 18 year of a 20 year bond with 2 year remaining maturity.

We need to calculate 3 year (5(class interval of 5,10,15,20 year bond)-2) bond yield and add with 15 year bond to dig up the 18 year bond yield (18=15+3).

15year yield(12%) + ((20 year yield(13%)-15 year yield(12%))/20-15)×period remaining(3 year). $12 + (((13-12)/5) \times 3) = 12.60\%$. Example of yield curve is shown in Figure-1.

Table 8 : Amortization of Bond

A	B	C	D	E	F	G
Date	Interest Payment Stated 4.5% x Face	Interest Expense Mkt 4% x Previous BV in G	Amortization of Bond Premium C minus B	Balance In Bond Premium Account	Balance In Bonds Payable Account	Book Value of the Bonds F plus E
	Credit Cash	Debit Interest Expense	Debit Bond Premium			
Jan 1, 2010				4,100	100,000	104,100
Jun 30, 2010	4,500	4,164	(336)	3,764	100,000	103,764
Dec 31, 2010	4,500	4,151	(349)	3,415	100,000	103,415
Jun 30, 2011	4,500	4,137	(363)	3,052	100,000	103,052
Dec 31, 2011	4,500	4,122	(378)	2,674	100,000	102,674
Jun 30, 2012	4,500	4,107	(393)	2,281	100,000	102,281
Dec 31, 2012	4,500	4,091	(409)	1,872	100,000	101,872
Jun 30, 2013	4,500	4,075	(425)	1,447	100,000	101,447
Dec 31, 2013	4,500	4,058	(442)	1,005	100,000	101,005
Jun 30, 2014	4,500	4,040	(460)	545	100,000	100,545
Dec 31, 2014	4,500	3,955	(545)	0	100,000	Tk.100,000
Total	45,000	40,900	(4,100)			

Lower interest rates of yield curve exemplify higher book value of HFT securities of banks and financial institutions. Subsequent higher interest rate increase the duration (discussed later) of bonds and increase the volatility.

Dirty price and clean price of bond

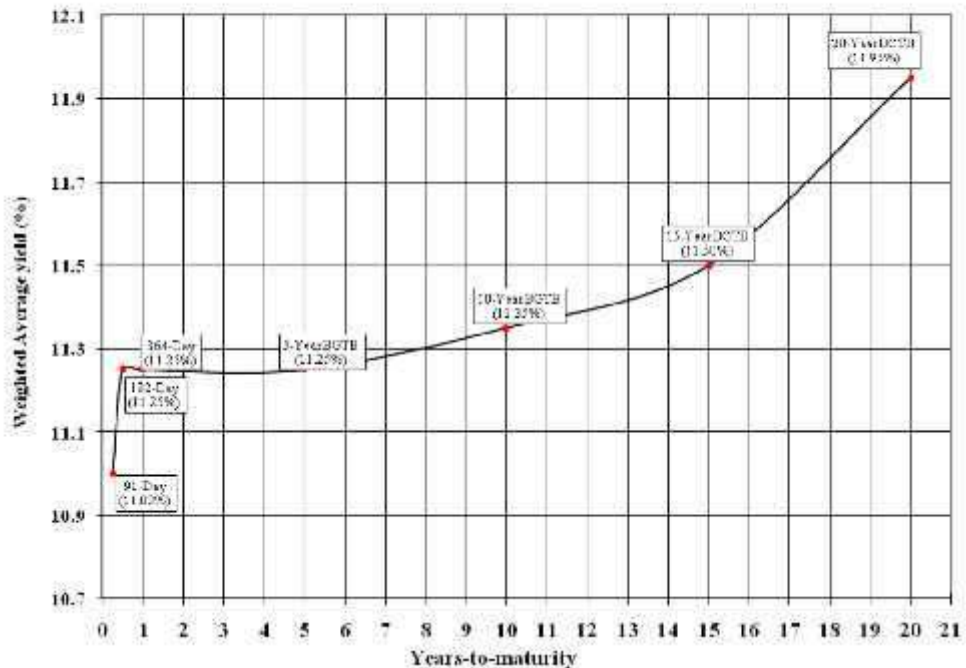
On the basis of coupon rate 10% and 9.50% current yield with certain time holdings the dirty price of bond is Tk. 101.95. After 60 days of holdings if the bond is sold the buyer of the bond need to pay 60 days accrued interest of Tk. 1.64 and the clean price of the bond will be Tk.100.31.

A corporate bond has a coupon rate of 7.2% and pays 4 times a year, on the 15th of January, April, July, and October. It uses the 30/360 US day count convention. A trade for 1,000 par value of the bond settles on January 25. The prior coupon date was January 15. The accrued interest reflects ten days’ interest, or Tk.2.00 (7.2% of 1,000 * (10 days/360 days)).

The full value of the bond is set by the market at Tk.985.50. The following calculation illustrates the values of related terms. The market convention for bond

Figure-1: Yield curve of Treasury Bills & Bonds

Figure 1 : Yield curve of Treasury Bills & Bonds (as of February 20, 2012)



price assigns a dirty price of Tk.98.55 to the trade, not 0.9855. This is sometimes referred to as the price for 100 par value.

Bond Pricing Example

Bangladesh Government Islamic Investment Bond

Government issues bond against the pool of funds formed by the Islamic banks and individuals to develop money market of this sector. Islamic banks and financial institutions are provided money up to 180 days against this pool of funds. The return of the bonds depends on profit or loss in line with the Islamic Shariah savings rate. The tenor of Islamic bond is 6-month, 1-year and 2-year. This bond is eligible for maintaining SLR. Islamic banks are need to maintain 11.50% SLR of which 6% CRR. The outstanding amount of Islamic bond is Tk.3008.40 crore at the end of February, 2012 includes unutilized funds of Tk.4.92 crore.

Other Government Bonds

Government also issued various bonds to supplement loanable funds for specialized banks and financial institutions. Furthermore, several bonds were also issued to mobilise funds for a number of public sector organisations like T&T Board and Bangladesh Biman. Bonds issued may be non-negotiable in nature.

Term	Value
Full Market Value	Tk 1,000
Dirty Price	Tk.985.50
Accrued interest	98.55
Flat market value	Tk.983.50
Clean price	98.35

Bearing in mind the financial aspect government can issue bond for instance in favour of state owned enterprises impacting BB and DMBs balance sheet. Since there is no secondary market in the country the holders of these bonds need to wait in anticipation of the maturity date for encashment.

Basel II capital adequacy requirement of government bonds

According to Basel II risk weighted asset of Tk. 100 value 5-year government treasury bond with 2-month remaining maturity for instance is Tk. 2 ($100 \times 0.20\% \times 10$) using standardized approach. To arrive this number 0.20% risk factor for 2-month remaining maturity is multiplied by conversion factor 10

(capital asset ratio) with base amount. Bank is needed to keep 10% of risk weighted asset i.e. Tk 0.20 in Tier 1 for minimum capital requirement. DMBs HFT securities need to calculate in the trading book and HTM need to report in banking book. Calculation of HFT treasury bills and bonds is needed to incorporate in the trading book rather banking book to address general market risk. The specific risk of treasury bills and bonds is zero. Pillar 1 of Basel II deals with minimum capital asset requirement of risk weighted asset of Tier 1 and Tier 2. Pillar 2 deals with supervisory issues addressing related risk for adequate capital asset requirement. Pillar 3 of Basel II reflects disclosure issues of banks and financial institutions.

Stress testing of government securities : Rise in interest rate at 1% level will decrease the price of bills and bonds used as base. Fall in risk weighted asset of bills and bonds due to lower base surfacing from market will lead to maintain lower capital in the DMBs balance sheet. Lower capital in the balance sheet will condense the capital asset ratio (CAR). Further rise in interest rate at 2% or 3% level eventually may lower the CAR below 10. All these depend on market rate of HFT government securities. It may be mentioned that CAR below 10 according to Basel II will expose the bank as vulnerable.

Duration of bond : Government bond with a yield to maturity of 8.00%, a par value of Tk.100, a coupon rate of 10%, and a cash-flow frequency of 2 time(s) per year will have a duration of 4.10 years. Duration measures how long, in years, it takes for the price of a bond to be repaid by its internal cash flows. DMBs need to consider it cautiously, as bonds with higher durations reflect more risk and have higher price volatility than bonds with lower durations.

Duration GAP (DGAP) impact the market value of equity and overall position of the bank. DGAP crop up combining weighted average duration of assets and liabilities of which investment of government securities are integrated. Formulation of DGAP:

$DGAP = DA - (MVL/MVA) \times DL$ [DA=Duration of asset; DL= Duration of liability; MVL= Market value of liability and MVA= Market value of asset].

$$DGAP = 3.07 - (10000 / 11000) \times 1.62 = 1.60$$

Longer DGAP causes larger change in the market value of DMBs equity. 1% rise in interest rate will reduce the market value of equity equivalent to Tk. 161.47 crore impacting balance sheet of banks as follows:

$$\Delta MVE(-DGAP) \times (1+y)^t \times TA$$

$$= -1.60 \times (0.01 / (1+0.09)) \times 11000 = -161.47 \text{ crore}$$

Chapter III

OMO and monetary policy

PDs and non PD banks submit bid for Repo and special repo to the BB depositing government securities as collateral treating outright sale with a commitment to repurchase it after certain time. BB can chain monetary policy by buying and selling treasury securities outright using repo and special repo. Liquidity Support Facility (LSF) is provided to PDs only against government securities treating as collateral (encumbered securities). These tools are using by BB for day to day liquidity management impacting short term interest rate. Buying collateral increases the amount of money in the market and lowers interest rates, and selling collateral has the opposite effect. In repo operation BB can sale collateral as tools of OMO with better market timing subject to outright purchase. Repo and Special Repo are provided by the BB to Primary Dealers (15 PDs) and non-PD banks with 7.75% and 10.25% rate as outright sale/buy. LSF is provided to 15 PDs only with 7.75% rate based on their collateral without treating outright sale/buy. Hence, the seller bank can use these mortgaged securities in the SLR by reason of unencumbered approved securities mode. In order to get LSF facilities from BB 15% and 5% margin will be applicable against collateralised government treasury bills and bonds. Government securities both distributed and purchased over 2 months and 15 days holdings by the PDs are not eligible as collateral for LSF. Change in market interest rate will also impact the book value of the PDs in case of LSF. BBs reverse repo is described in terms of the other party's view. Reverse repo mop-up the liquidity virtually with no risk in terms of taking money from other party. BB does not provide any collateral in this regard. Details of Repo, Reverse repo and LSF are made known in Table-9 and 10.

Repo operation

Repo is used for day to day liquidity management. Usually it is ranged from 1-7 Days. Bidders submit their bids and the auction committee encompassing high official of BB agree on the amount.

Calculation of repo and Reverse repo rates

Taka interest = Principal x Repo Rate x (Repo Term in days/365 days)

Tk.0.207= Tk.1000 x 0.1080 x (7/365)

The repo rate is the annualized interest rate of the transaction:

Repo Rate = Taka interest/Principal x 365/(Repo Term in days)

10.80%=Tk.0.207 / Tk.1000 x365/7. Special repo rate for 1-3 Day tenor is 10.75% and for 4-7 Day tenor is 10.80%. BB time to time amends the repo and reverse repo rate, which is used as policy rates.

Table 9 : Repo auction

Auction date	Tenor	Bidders	No. of bids	Received amount	Accepted amount	Repo rate (%)	Outstanding amount
23/11/11	1-Day	Repo to PD's /Non PDs	11	31,979.32	127.92	7.75	
	7-Day	Special Repo to PD's /Non PDs	6	1,807.00	1,200.00	10.80	5,616.92
	1-Day	LSF to PD's	13	4,289.00	4,289.00	7.75	
	Total :		30	38,075.32	5,616.92		

Reverse repo rate (5.75%) is 200 basis points lower than Repo rate (7.75%) in Bangladesh. Special repo provides to PDs and non PDs, those require money in the late working hour in a day. They are also in need of money for special reason. Special repo rate of higher tenor 10.80% is applied as penalty for maintaining of

Table 10 : Reverse repo auction

Auction date	Tenor	Bidders	No. of bids	Received amount	Accepted amount	Reverse Repo rate (%)	Outstanding amount
23/11/11	1-Day	Standard Chartered Bank	1	100.00	100.00	5.75	100.00

SLR. Bank rate (5%) with additional 5% totalling 10% rate is applicable for CRR penalty. Reverse repo rate is persist for taking loan of the government form BB. Thus these rates have due value in the economy.

Bangladesh Bank Bill

Bangladesh bank bill is used to mop-up the liquidity from the banking system. To dry up the excess liquidity and creating high demand of Taka against foreign currency BB bill may be used. At present 30-Day Bangladesh Bank bill is in use as operational tool. The procedure of BB bill is synonymous to government treasury bills. Only bank can participate in the BB bill auction. The minimum face value of the government securities is Tk. 10.0 lac. Total applied amount of the securities should be divisible by Tk.10.0 lac (Tk. one million).Shortfall of excess

reserves may augment inter-bank call money rate (Table-11). It also increases the overall interest rate.

Foreign exchange sale/purchase by BB

BB uses prudently this policy in order to maintain exchange rate. Sale of foreign exchange dwindle the liquidity lowering demand of foreign exchange (Table-12).

Table 11 : Reserve Money Excess/ Shortfall

(in million Tk.)

Date	Bank Notes	Govt. Notes and coins	Currency in circulation I= (a+b)	Local Curre. A/C II	F.C. clearing A/C III	RM IV=(I+II+III)	CRR V	Excess/shortfall of CRR VI=(II-V)	Inter-bank call money rate (WAR)
	a	b							
10/01/12	647865	6725	654590	257456	912046	979796	274375	-16919	20.15
11/01/12	648971	6725	655696	248450	904146	974707	274630	-26180	20.06
12/01/12	650225	6736	656961	250821	907782	984007	274630	-23809	20.19
15/01/12	650788	6736	657524	248245	905769	976127	274630	-26385	19.08

Source: Key monetary indicators, Monetary Policy Department, BB.

Banks are authorised to uphold open position limit, which is 15% of their risk weighted assets of Tier 1 and Tier 2 of Basel II. Individual banks excess holdings weigh against limit is mandatory to sale BB. Banks purchase more than limit refers to overbought. Oversold indicate excess sell comparing holding limit. At the forefront banks foreign exchange purchase is termed as long position. Banks selling foreign currency in advance intended for import payment, which is not in banks hand, is known as short position. Short position is uncovered position. Net position of banks arise summing long and short position. Higher amount of short position US\$-637.15 million direct to rise the inter-bank weighted average foreign exchange rate (WAR) at Tk. 82.3906 pointed out in Table-13. Making an allowance for the banks position BB operates sale/purchase of foreign exchange.

Table 12 : Foreign Currency Transactions by Bangladesh Bank

(million US\$)

FY/Date	Buying			Selling		
	Currency	Amount	Taka	Currency	Amount	Taka
2010-11	US \$	316.50	21994.01	US \$	1279.00	91307.66
03-1-12	US \$	Nil	Nil	US \$	30.00	2461.50

Table 13 : Overall Foreign Exchange Position of Commercial Banks

(million US \$)

Date	Open position Limit (Approved)	Net position Balance*	Inter-bank foreign exchange market rate (WAR)
02-01-12	809.76	-580.65	82.0063
03-01-12	809.76	-680.35	82.0327
04-01-12	809.76	-604.14	82.0843
05-01-12	809.76	-637.15	82.3906

*Net position of Long and Short. WAR= Weighted average exchange rate at Taka.

Chapter IV

Conclusion

Government debt management brings together fiscal and monetary policy to achieve economic growth. Government borrow money through treasury bills and bonds to execute ADP resulting debt from the banking system. In a nutshell, government have access to DMBs and BB by selling treasury bills and bonds paying interest and eventually pay back the loans. This investment is duly shown in the balance sheet of the DMBs, which is influenced by market rate. As a result operational procedure and economic consequence is vital for banks. BB uses repo, reverse repo and selling/buying of foreign exchange for retaining day to day liquidity and external competitiveness of Taka. In repo operation BB can use collateral as tools of OMO with better market timing subject to outright purchase. Buying collateral increases the amount of money in the market and lowers interest rates, and selling collateral has the opposite effect.

Government debt needs to be preserved in terms of amount and rate. Proper debt servicing is vital under a wide range of fluctuations of the economy. At the same time effective ratios of public debt to GDP and to tax revenue necessitate to be continued. Proper revenue collection will rationally impact fiscal and monetary policy reducing income inequalities for poverty alleviation. Certain amount of blocked government outstanding debt taken through overdraft from BB can also be amortized following 10 years schedule for instance improving the balance sheet of BB. Gradual offload of current government debt using treasury bills following securitization may lower the monetary base with higher money multiplier maintaining desired rates. As a consequence debt management and OMO has due insinuation in monitoring interest rate, exchange rate and inflation endorsing economic growth.

References

1. Adepoju, Adenike Adebisola and Salau, Adekunle Sheu and Obayelu, Abiodun Elijah (2008): *The Effects of External Debt Management on Sustainable Economic Growth and Development: Lessons from Nigeria*. University of Ibadan and Ladoke Akintola University of Technology.
2. Anil Bisen, Raj Kumar, Tarun Das (2002)“Contingent Liability Management: A Study on India”.
3. ———. “Bank Influence and the Failure of U.S. Monetary Policy during the 1953–1954 Recession.” *International Review of Applied Economics* 12, no. 2, 1998.
4. Dinesh Dodhia, Tina Johnson (05-2005) *Mainstreaming Gender in Debt and Development Resource Management*,.
5. D’Arista, Jane W. *Federal Reserve Structure and the Development of Monetary Policy, 1915–1935*. Washington, D.C.: Government Printing Office, 1971.
6. Dickens, Edwin. “U.S. Monetary Policy in the 1950s: A Radical Political Economic Approach.” *Review of Radical Political Economics* 27, no. 4 1995.
7. Dr HK Pradhan (December 2009) *Effective external debt management for a sustainable economic development* Professor of Finance & Economics XLRI Jamshedpur, India.
8. Ernie Caballero (March 2011) Vice President, Eurasia Treasury and M&A, UPS, “Managing Cash as a Corporate Asset”
9. “Effective Domestic Debt Management in Developing Countries” (2002) ISBN No: 978-0-85092-581-4.
10. Goswami, Arti Grover; Mattoo, Aaditya; Saez, Sebastian (November 2011) “Exporting Services: A developing country perspective”.
11. Hai-Chin Yu (Taiwan), Ken H. Johnson (USA), Der-Tzon Hsieh (Taiwan) -2008, “Public debt, bank debt, and non-bank private debt in emerging and developed financial markets”, *Banks and Bank Systems International Research Journal*, Volume 3, Issue 4.
12. M. A. Akhtat (1997)“Understanding Open Market Operation” Federal Reserve Bank of New York,.
13. Srinivasan Varadarajan (March 2011) “Leveraging People and Technology for Value Creation” Executive Director - Corporate Finance, Bharat Petroleum Corporation Limited, India.
14. Williams, Mike ed. (2002) *Organization for Economic Co-operation and Development Debt Management and Government Securities Markets in the 21st Century*.

Transparency in the Financial Reporting of Central Banks : *Rationale and Comparative Practices*

JAMALUDDIN AHMED*

Introduction

Central banks exist to achieve the policy objectives prescribed in their respective laws. These cover monetary policies and systemic stability targets in pursuit of broader macroeconomic objectives. Policy effectiveness, rather than efficiency of resource utilization or profitability, provides the basis for central bank accountability. While some laws may identify efficient resource utilization as a second tier objective, none specify profit maximization. In fact, some laws explicitly exclude measures of profit from central bank objectives. This absence of a profit objective is one of the features distinguishing central banks from commercial banks. Shareholders do not seek to maximize the return on capital invested in the bank. This lack of commercial incentives and the central bank's focus on policies requires alternative measures to determine dividend policy. With the convergence towards identifying price stability as the prime central bank function, and the related proscription on extending credit to government, most central banks are able to structure their balance sheets in such a way that, under normal economic conditions, the lack of a profitability objective is not an issue. Rather the issue is how to ensure that the central bank's dividend policy addresses the conflicting needs of a government's entitlement to central bank profits, the need for dividend policy to achieve at least a neutral stance in relation to monetary policy and the need to ensure an appropriate level of capital adequacy. Material changes in central bank accounting and reporting have followed international

* Author Jamaluddin Ahmed PhD FCA is a Director of Emerging Credit Rating Limited and a Vice-President of Bangladesh Economic Association.

acceptance of improved transparency and accountability accompanying the move to greater central bank independence. The production of financial statements using credible accounting standards has resulted in significant changes in the composition of central bank profits, raising new issues of dividend distribution.

The objective of this paper is to discuss developments in the measurement and reporting of central bank profits and their impact on the central bank's ability to maintain capital and pay dividends. Whilst acknowledging the need for central bank capital, the paper will not attempt a definitive discussion of the issues underlying the determination of what is an appropriate level of capital. Rather, after an acknowledgement of the need for a central bank to have a risk based, non negative, level of capital, the paper will review sources of central bank income and expenditure, developments in measuring and reporting its net income, and the issues that impact on the determination of income for the central bank to retain or distribute. For simplicity, the paper will use international standards in reference to appropriate national and international accounting standards framework.

Structure of the paper: this paper is divided into six sections, *Section-I* describe on the central bank capital and the circumstances conducive the negative capital and the impact of negative capital on the monetary policy, ways to improve independence and democratic accountability. Review of literature on capital adequacy of central bank. *Section II* explains on the income and expenditure of central bank, allocation of profit and losses, identification of the causes of losses, implication of losses, factors of particular losses, and relevance of specific losses, country experience of losses, recognition and legislative coverage. *Section III* details the accounting for central bank profits and dividend policies, balancing central bank and government needs for profit and cross country examples of central bank profits and dividend policies. *Section IV* provides the methodologies as to how to amalgamate central bank and fiscal deficits, economic impact of central bank activities and activities affecting central bank profit and loss account and balance sheet and continuing debate on central bank profit from its own operation. *Section V* presents on the position of financial transparency and compliance to International Financial Reporting System (IFRS) and International Accounting Standards. Also this section documents the cross country reference and arguments for and against application of IFRS and IAS in the financial reporting of central bank. *Section VI* records the summary, conclusion of the paper.

Section I: Central Bank Capital and Capital Adequacy

The issue of central bank (CB) capital and of rules for the distribution of CB profits to owners would appear, at first glance, to bear strong similarities to such questions for private corporations. After all, central banks and private firms are incorporated within a similar legal structure and utilize similar accounting principles. However, this resemblance in formal procedures hides several important differences. Unlike private corporations, CBs are set up to achieve aggregate policy objective(s) rather than to maximize profits. Unlike a private corporation, a negative net worth (or capital) at the CB does not imply that the bank will go bankrupt and cease to operate. Finally, the main owner of the CB is the government rather than private individuals, implying that any distribution of profits increases the spending power of government and that CB losses ultimately translate into revenue losses or extra expenditures for the central government.

Until the mid-1980s, most CBs were dominated by governments and functioned to a large extent as divisions of treasuries or ministries of finance. As such they were utilized for a variety of (often conflicting) purposes such as helping finance government expenditures, trying to stimulate economic activity and exports, and maintaining price stability and financial stability. As a consequence, the precise magnitude and sign of CB capital was a relatively mute issue. The last two decades have seen the emergence of a new consensus according to which: (1) the CB should focus mainly on assuring price stability even at the cost of substantial neglect of other objectives; (2) the bank should be free to set monetary policy instruments independently of other branches of government; (3) as in earlier times, the CB is still expected to use its policy instruments to safeguard the stability of the financial system, particularly during times of foreign exchange and other financial crises.

This paper accepts those three principles as desirable features of modern monetary policymaking institutions and focuses on two issues, the first of which is positive and the second normative. The positive issue concerns the implications of alternative levels of CB capital and of rules for the distribution of profits to governments for the extent to which the CB is able to set its monetary policy instruments without interference from the political establishment. When central banks functioned mainly as arms of the treasury, this question was irrelevant: CB independence (CBI) in the modern sense was mostly non-existent and central banks were not expected to be independent.

The normative issue is the potential tradeoff between democratic accountability (DA) and CB independence. This tradeoff comes into play when the occurrence

of sufficiently large economic or political shocks forces the CB to engage in policies that have substantial fiscal implications, such as the bailout of a large segment of the financial system. Since it involves a redistribution of resources, such an action allows a non-elected institution (the CB) to make fiscal policy decisions. This is questionable on the grounds of democratic accountability and raises important questions of institutional design and, given this design, the precise choice of a point along the tradeoff between DA and CBI.

When does central bank capital affect its independence: Unlike a private corporation, a CB is not liquidated when its capital becomes negative. In spite of this, most modern central banks hold positive amounts of capital as insurance against political interference. The reason is that when its capital is negative, it is more likely that the CB will depend on infusions of funds from the treasury, opening the door for various pressures on the bank to ease policy in order to contribute directly or indirectly to financing of the deficit and/or to a (temporary) higher level of economic activity. In such cases the treasury may, explicitly or implicitly, condition the recapitalization of the CB on certain policy actions.

When endowed with sufficient legal independence and positive levels of capital, it is quite likely that most contemporary CBs will be able to resist such pressures. However, if at the time those policies are required the bank already has a substantial amount of negative capital, the political establishment may well have the ability, and often the incentive, to stop, delay or severely limit such policy actions. This suggests that the relation between independence and the level of CB capital is likely to be discontinuous, in the sense that below a certain threshold of negative capital the CB will be seriously limited by political authorities, even if it enjoys a high level of legal independence. Above this threshold, the ability of the bank to conduct policy independently does not really depend, to a first approximation, upon the level of CB capital.

It follows that maintenance of a sufficiently high level of capital is basically (probably partially) an insurance against states of nature in which the bank's ability to resist the pressures of political authorities is weakened. Central bankers are aware of the possibility that negative levels of capital might jeopardize their ability to choose policies independently. Pronouncements by CB governors suggest that avoidance of such situations occasionally affects policy decisions even when CB capital is clearly in the positive range. For example, a speech in 2003 by the then governor of the Bank of Japan suggests that monetary policy in Japan was motivated, *inter alia*, by a desire to shield the bank's capital position from going into negative territory for reasons that are readily apparent from the quotation that follows:

Consider a case where, for whatever reason, a central bank's capital becomes depleted, and the bank requires financial support from the government. The central bank might either run into difficulties in conducting its policy or other business operations, or might cause the view to spread that it will, and eventually it will become difficult to maintain public confidence in the currency.' (Governor Fukui, 2003). Interestingly, Governor Fukui made this statement at a time in which conventional wisdom was that the monetary policy of the Bank of Japan was not sufficiently expansionary, partly because it was excessively concerned with avoidance of losses and the strength of its balance sheet.

Circumstances conducive to losses and negative capital at the CB: Sustained losses leading to negative net worth at the CB often arise following structural changes in the financial sector and/or as a consequence of changes in monetary regime. Both kinds of changes often occur following financial or exchange rate crises. This section describes alternative conjunctions of economic circumstances and policies that, if and when pursued, will almost inevitably result in negative capital at the central bank.

1. During periods of credibility buildup the CB conducts contractionary monetary policy in order to convince the public that it is serious about attaining and maintaining a low rate of inflation. Such stabilization of inflation can be supported by an explicit inflation target (as has been the case in the UK since 1992) or without it (as was the case in the USA in the early 1980s). In either case the CB must maintain high interest rates during the period of stabilization. Often, this leads to the CB paying high interest rates on its liabilities to attract deposits from banks and mop up liquidity. If most of the CB assets are in domestic currency, this does not necessarily lead to losses since the interest rate on CB assets is also high. This is the case of the Federal Reserve. However, if a substantial fraction of assets of the CB is in foreign currency-denominated assets that carry lower interest and the exchange rate is pegged, the average return on the bank's assets is lower than that which the bank pays on its liabilities – which leads to losses. When the period of stabilization stretches over several years, the negative differential between the average return on assets and the interest paid on liabilities can, unfortunately, move a comfortably positive stock of CB capital deeply into the red. Such cumulative losses, as a result of sustained attempts at stabilization, were experienced during the 1990s in Israel, and also in several former socialist economies at that time.

2. The CB net worth position is also weakened when it utilizes its resources in order to maintain a fixed peg or a narrow band in the face of market pressures for

adjustment but eventually abandons this policy and lets the exchange rate float. Such conjunction of policies tends to weaken the net worth position of the bank independently of whether the pressures are for devaluation or revaluation of the domestic currency. In the first case, the bank sells foreign currency in order to prevent devaluation. As a consequence, the bank's net assets (assets minus liabilities) in foreign currency go down. When the devaluation occurs, the bank either incurs losses if its net foreign currency-denominated assets are negative or enjoys smaller devaluation profits if net foreign assets are still positive. In either case the net worth position is weakened in comparison to a situation in which the bank did not try to stop the depreciation. An example is Mexico after the 1994 exchange rate attack. When the bank sterilizes capital inflows in order to prevent an appreciation of the currency but ultimately abandons this policy, the net worth position is weakened again. During the period of sterilization the bank's net asset position in domestically denominated assets goes down. Hence, when the appreciation occurs, the bank's net worth is a good deal lower than it would have been, had it not engaged in the sterilization of capital inflows.

3. Following banking and related financial crises, the CB often assumes the non-performing assets and obligations of financial institutions in order to prevent panics and maintain the stability of the financial system. This is often reinforced by political pressures. Such bailouts increase the risk of loss, and weaken the net worth position of the central bank. Non-performing loans resulting from past soft budget constraints were quite common in the 1990s in the former socialist countries and other developing economies. Fiscal bailouts of non-performing loans can be made explicitly through the budget or by absorbing them into the CB's balance sheet. When bailouts are substantial, the second method is likely to erode, as a byproduct, the instrument independent of the central bank.

The impact of negative CB capital on monetary policy: When, as a result of some combination of the reasons discussed in the previous section, CB capital becomes sufficiently negative, it is likely that the ability of the bank to conduct policies that lead to additional losses will be compromised. If, at the time this happens, the state of the economy calls for expansionary monetary policy, this is not a binding constraint since expansionary policy normally raises CB income through seignorage and increases in the bank's interest earning net assets. However, if in order to achieve an inflation target or for other reasons, contractionary policy is called upon, the likelihood that effective pressures will be exerted on the bank to desist from such policy becomes a serious possibility. One can easily imagine scenarios in which an increase in the policy rate by the bank will trigger calls in the legislative and/or executive branches of government to

stop the bank from conducting policies that ultimately raise the Treasury's net outlays. All else equal, and given current levels of CBI, such pressures are likely to be far less effective when central bank capital is well within the positive range.

The conjunction of negative CB capital with an absence of marketable government bonds in the CB balance sheet increases the likelihood that the bank will be seriously limited in its ability to conduct restrictive policies. In such cases contractionary monetary policy is usually conducted through reverse repurchase agreements operations or similar arrangements. Under such schemes, private banks are induced to place deposits with the CB through a high enough interest rate, making it more evident to lay legislators and others that the bank is engaging in loss-creating policies. Effective political coalitions against contractionary monetary policy are therefore likelier to form when the bank offers high interest on deposits at the bank, than when they take the form of open market sales.

The risk that negative capital at the CB will limit the bank's ability to conduct contractionary monetary policy is also greater in countries with narrow domestic capital markets. In such countries the supply of funds to government is relatively interest-inelastic. It might even be negligible. As a consequence, when a government needs to run deficits, it is more dependent on seignorage than governments of countries with wide capital markets (such as the USA and the UK). In the presence of negative CB capital, such governments are likely to oppose contractionary monetary policy more vigorously than the political establishments of countries with wide capital markets. Discussion in Stella (2005) suggests that, more often than not, CB losses leading to substantial negative net worth at the CB interfered with the ability to conduct restrictive policies and ultimately with the CB ability to maintain price stability. Examples discussed by Stella include, Peru, Bolivia, Uruguay, Paraguay, Costa Rica and Venezuela during the 1990s.

However, this does not necessarily imply that negative levels of CB capital *always* prevent the achievement of price stability. In spite of increasingly negative levels of CB capital, Chile successfully managed to reduce inflation over the last decade by means of inflation targeting. This remarkable performance was made possible through a sustained policy of budgetary surpluses on the part of government. In the presence of such surpluses, the risks to price stability resulting from negative CB capital are obviously negligible. The reason is that a main governmental incentive to apply pressures against restrictive monetary policy by the CB is non-existent in the presence of sustained surpluses. The Chilean case suggests that the negative levels of CB capital may have very different impacts on price stability, depending on the long-run stance of fiscal policy.

How to improve the independence democratic accountability tradeoff:

Macroeconomic theory usually treats fiscal and monetary policies as distinct from each other. Although this is a useful first order approximation, there are cases in which monetary policy actions have fiscal implications. Conversely, decisions about the type of exchange rate regime, which usually are under the authority of government and the treasury, affect the degree of instrument independence of the CB. What follows gives an example of monetary policy decisions with fiscal implications, and an elaboration of the link between the exchange rate regime and the degree of CB's instrument independence.

Since the Bank of Israel has no stock of marketable government securities, there is an agreement between the bank and the treasury, giving the bank the authority to issue and retire earmarked short-term government obligations solely for the purpose of conducting monetary policy. Although the proceeds from such issues cannot be used for the financing of budgetary deficits, restrictive monetary policy decisions by the bank will result automatically, given this arrangement, in increases in the size of government debt. In a CB that uses open market sales or reverse repos to implement restrictive monetary policy, the fiscal implications of restrictive policies, although less visible at first glance, are nonetheless present. They take the form of a smaller amount of seignorage paid to the government at the end of the year (when seignorage net of expenses is positive), or a larger negative capital that will ultimately have to be funded by the fiscal authority (when both seignorage net of expenses, and the central bank's capital, are at negative levels).

Next, we consider the impact of the exchange rate regime on the instrument independence of the CB. When the exchange rate is pegged (through a currency board or by some other means), the bank is forced to subjugate its interest rate policy to the fixed exchange rate objective. When the exchange rate is more flexible, as is the case under wide bands or fully flexible regimes, the bank is free to move the interest rate in order to achieve other objectives like stabilization of inflation around a target rate and stabilization of the output gap. A fixed peg that is ultimately abandoned, normally because of a governmental decision, worsens the CB's capital position. Decisions made by political authorities may, therefore, depending on the exchange rate regime, induce negative levels of CB capital.

The previous discussion suggests that monetary and fiscal policy decisions are more interwoven than textbook models would lead one to believe. In particular, both fiscal and monetary policy decisions affect the profits of the CB and its capital position. The existence of such interactions makes the choice of

institutions, designed to achieve a reasonable tradeoff between democratic accountability and CBI, particularly tricky.

The main issue can be stated as follows: Instrument independence on the part of the CB allows it (at least in some cases) to make decisions that have fiscal implications. This violates the principle of democratic accountability since CB officials are non-elected technocrats. On the other hand, decisions made by political authorities, with respect to matters such as the type of exchange rate regime or the financing of bailouts, affect the instrument independence of the CB through its balance sheet position. This can only violate the principle of CBI. There is therefore a tradeoff between those two principles.

This raises important institutional design questions about how to make this tradeoff less acute. Those questions have received little treatment in the economic literature. I have no definite institutional blueprints for their resolution. Instead we offer several practically oriented principles that should ameliorate this CBI - democratic accountability tradeoff.

1. In non-extreme circumstances let the CB alone decide about monetary policies, even if some of those decisions have fiscal implications.
2. When extreme circumstances, such as financial crises, make it necessary to enact monetary policies that have substantial fiscal implications, then there should be a jointly agreed decision by the central bank and the political authorities.
3. Delimitation of threshold levels of monetary policy with fiscal implications, beyond which government and the CB would be urged to reach a joint decision, should be formulated in advance. These thresholds should be set at levels that would make the probability of fiscal interference with monetary policy matters small. The precise circumstances and levels of the thresholds, above which a government would temporarily become involved in monetary decisions, generally involve both positive and normative considerations.
4. If, following a financial crisis or for other reasons, the government decides to rescue financial institutions, the implementation of such operations should not affect the net capital position of the CB. This outcome implies that such operations should appear as explicit items in the government's budget. Such an arrangement is desirable not only because it protects the instrument independence of the bank but also because of transparency and accountability considerations by politicians to the public that elected them. Fry et al. (1996) note that governments in many developing countries tend to burden the CB with such operations precisely because they try to avoid transparency and accountability. In their

language, governments 'are quite content to hide the fact that they are squeezing the goose that lays the golden eggs'.

5. More generally, the CB net worth should be shielded from the impact of decisions that are made by other authorities. For example, if the government decides on an exchange rate peg, and forces the CB to defend it, and later on abandons the peg, creating CB losses, those losses should surely be recapitalized.

How much capital should a CB have: This section proposed a number of principles designed to obtain a favorable tradeoff between CBI and democratic accountability, but did not address the more specific question about the desirable magnitude of central bank capital, given the existing institutions of each particular country. Countries differ in their political systems, economic shocks, exchange rate regimes, financial institutions and in other dimensions. Therefore, one answer does not fit all. This section brings up some qualitative factors influencing the choice of CB capital, for countries with specific economic and institutional features.

1. An important determinant of the desirable level of CB capital is the sizes of shocks to which monetary policy is expected to react. Other things being equal, larger variances of those shocks call for larger levels of capital, to achieve a given level of insurance, against losing the ability to conduct monetary policy independently.

2. The width of areas of responsibility of the CB is a second factor. The more numerous those areas, the larger the recommended level of capital. For example, CBs that do not manage foreign exchange reserves and/or are not involved in the supervision and regulation of the financial system can have lower levels of capital. Since in developing countries it is likely that the CB will have wider responsibilities, a corollary of this point is that, all other things being equal, the desirable level of CB capital should be higher in developing countries. Further, since the CB is also likely to have wider responsibilities in countries with relatively narrow capital markets, an additional corollary is that, all else equal, CB capital should be higher, in the countries where capital markets are less broad.

3. The greater the government's tendency to create deficits, the more important it is to protect the independence of the bank, and, therefore, the higher its level of capital should be. Similarly, the more politically unstable the government, the higher the importance of CBI and the higher the desirable level of CB capital gets.

4. The nature of other institutional arrangements governing the relationship between the government and the CB should also affect the desirable level of

capital. CB capital is only one component of a package of institutional arrangements governing the relation between government and the CB. Of special importance is the nature of the exchange rate regime. If institutional arrangements between the bank and the treasury are such that the bank is expected to be the sole defender of a fixed peg, it should have higher capital, than when the responsibility for defending the exchange rate lies wholly or in part with the treasury.

5. By affecting the probability of sizable losses, the structure of the bank's balance sheet by currency of denomination should also affect the desirable level of CB capital. Since they issue currency and hold the reserves of the banking system, the bulk of CB liabilities generally lie in domestic currency. However, there are substantial differences between central banks in the fraction of their assets that is denominated in foreign exchange. At one extreme of the spectrum is the USA in which the bulk of CB assets lie in domestic currency. At the other extreme are small open economies with fixed pegs, like Hong Kong, in which the bulk of CB assets are denominated in foreign exchange. Sims (2004), who refers to those two extreme types as F (for Fed) and E (central banks) respectively, notes that F is perfectly hedged in currency risk, while E assumes large currency risks. The larger the currency mismatches between the currency composition of assets and liabilities, the larger the level of CB capital needed to cushion against CB losses due to changes in the exchange rate. Consequently, central banks with larger fractions of foreign exchange-denominated assets should have higher capital. A comparison of the past levels of CB capital in the US, and Hong Kong, as representatives of extreme types of central banks, is consistent with the view that CBs actually follow this principle. Prior to the recent crisis, the Fed's capital was less than one quarter of one per cent of GDP, while the ratio of the capital of Hong Kong's monetary authority to its GDP was more than one hundred times greater than this.

6. The level of CB capital may also affect the credibility of the CB for being committed to maintaining a low rate of inflation. If individuals understand that a sufficiently negative level of a CB's capital impairs its ability to conduct policy independently, too low a level of CB's net capital may induce an increase in inflationary expectations and reduce credibility. This may occur even if the bank enjoys high legal independence. However, such a scenario need not necessarily take place if other factors suggest to the public that government policy at the time is likely to be conservative. For example if, as in Chile, government maintains regular budgetary surpluses, and is perceived to be generally tough on inflation, negative capital at the CB need not affect credibility. So when assessing how negative CB capital affects credibility, one should also consider the fiscal policy stance, related institutional arrangements, and the general state of the economy.

Should one be concerned about negative capital during extended depressions: The discussion in earlier section was geared towards avoiding situations in which, due to the accumulation of substantial losses, it is politically difficult for the bank to engage in further loss-creating policies, when such policies are called upon. Underlying the focus on avoidance of such scenarios is the belief that more often than not, when expansionary policies are called upon, they are not met by the same level of resistance from the political establishment as is the case for contractionary policies. However, during deep depressions conventional economic wisdom is that the CB should flood the economy with liquidity even at the cost of absorbing a substantial amount of bad debt. Friedman and Schwartz (1963) convincingly argue that the severity of the great depression in the USA would have been smaller if the Fed had been less concerned with safeguarding its net worth. Krugman (1998), Cargill (2005) and others have argued that, in the face of the severe recent depression in Japan, the Bank of Japan made similar policy errors partly because of an excessive concern with CB losses that could lead to negative levels of capital. In particular, Bernanke (2003) argued that the Bank of Japan held down the level of open market purchases to avoid potential capital losses as a consequence of rising interest rates after the depression was over. Does this imply that, in the face of a deep and extended depression, the CB should forget about the impact of negative capital on CBI? The answer is not a simple yes or no. On one hand, massive open market purchases in the face of a deep depression should not be inhibited. On the other, in its role as the authority in charge of long-run price stability the Bank of Japan's concerns about the impact of its capital on long run CBI was reasonable.

This is clearly one of the situations that call for consultations and co-operation between the CB and the treasury since large capital losses are to be incurred by the bank, if massive open market purchases are successful, ultimately have implications for the balance sheet of consolidated government as well as for CBI. Bernanke (2003) makes a creative suggestion that addresses both issues. He proposes a *quid pro quo*, in which the Ministry of Finance acts to immunize the Bank of Japan's balance sheet from interest rate risk, and in return the bank increases its purchases of government bonds. This opens the door for larger open market purchases while addressing the legitimate concerns of the Bank of Japan about its balance sheet position.

Central bank capital adequacy: Various economic literature portray a large number of papers dealing with the issue of central bank independence and surprisingly contrasts the limited attention that has been paid to analyses and determinants of central banks' *financial* autonomy. Only over the last few years

has the issue of central banks' financial autonomy attracted the interest of some scholars. There are many explanations for this new interest. *First*, there is a direct connection with the more general concept of central bank independence from the spheres of politics and industry, given that financial autonomy or central bank capital adequacy (CBCA) can be seen as an important precondition for pursuing and gaining institutional and instrument independence. *Second*, the low inflation levels and low interest rates of recent years have brought with them a significant decline in central banks' revenues and profitability and consequently in the level of central banks' capital. *Third*, over the last few years some central banks have incurred large losses, depleting their capital and in some cases bringing it into negative territories. *Fourth*, there is a potential risk that financial innovations, through the increasing use of e-money and other cashless payments, might cause a reduction in the demand for banknotes, hence reducing the seigniorage of central banks. *Finally*, the issue of insufficient resources of central banks and financial regulators might also be associated with recent financial scandals; in fact inadequate financial resources of regulators and supervisors might have brought forward insufficient financial monitoring and supervision jeopardizing financial stability and investor protection.

Despite such growing interest, most of the theoretical arguments and empirical findings presented in the literature have associated CBCA with the conduct of monetary policy without considering those institutional cases where a central bank or a monetary authority exists but is not responsible for the conduct of monetary policy. This is particularly true for those countries which do not have their own currency: typically the smallest countries. This situation also applies to those countries which – despite having the opportunity to issue their own currency – have chosen to adopt another country's currency as the predominant or exclusive legal tender (official dollarization/euroization). A further example consists of countries which are experiencing a de facto dollarization/euroization process in which the local currency remains the legal tender but financial and payment transactions are allowed to be denominated in a foreign currency. The regimes of currency boards and monetary unions are also two other cases in point. In the aforesaid countries, despite the lack of monetary policy, central banks and/or financial authorities can still retain several functions, including financial regulation and supervision. This is especially the case in small and less financially developed countries where giving supervisory powers to a central bank can be particularly advantageous, especially if public institutions and legal systems are weak, co-ordination among public sector agencies is troublesome and financially skilled human resources are scarce. In particular, small countries can achieve

significant economies of scope and scale if they choose to establish a single financial authority (Llewellyn, 1999).

These institutional settings, in which a sole authority exists but there is no domestic currency – and hence no monetary policy to be conducted – raise the issue of CBCA, or more generally the issue of financial autonomy, in a framework where the assignment of managing the monetary policy loses its meaning. In other words: Is CBCA still a relevant objective when the country does not run its own monetary policy? This chapter attempts to address this question by maintaining that central bank financial autonomy does indeed matter even in contexts in which the central bank carries out other economic functions; this is particularly true if it is responsible for financial regulation and supervision.

Literature on central bank capital adequacy: In economic literature the high number of studies on central bank independence surprisingly contrasts with the limited number of papers on the issue of CBCA. Only very recently has there been increasing discussion about whether CBCA should be seen as a relevant concept, and, if so, how much capital central banks should hold. Generally speaking, the issue of CBCA has been coupled with the attainment of central banks' macroeconomic objectives, primarily price stability and exchange rate policy. In fact, there is a link between the financial situation of a central bank, the possibility that it may become illiquid and the probability of abandoning the goal of price stability.

It can be argued that a financially weak central bank making repetitive losses will react through one – or a combination – of the following remedies: reserve money injection, financial repression, and debt issuance or through the very last alternative that implies the request of some form of central bank recapitalization. If the money injection is consistent with the macroeconomic and monetary equilibria, then no immediate difficulty arises, but, if not, then the central bank needs to react through some countervailing measures. A possible option is to impose direct costs on the banking sector through some kind of financial repression. For instance, this can be realized through high non-remunerated reserve requirements or equivalent measures, which eventually will cause unsustainable efficiency losses. Consequently, more market-friendly indirect measures requiring a voluntary action on the part of the public would be a more preferable solution. For example, the central bank could offer the public its liquid assets bearing a market rate in exchange for reserve money. This operation, however, will lead to future additional losses due to the reduction of the central bank's sources of revenues. Similarly, the central bank could issue its own

liabilities, which in turn will cause further operational expenses in the future. It has been argued that the sustainability of the central bank debt issuance should be a function of the same factors that determine the sustainability of the government debt (Stella 1997). However, theoretically and unlike the government, a central bank could always collect the needed funds by crediting the commercial banks' accounts at the central bank. But such a response would create excess liquidity in the system, making the interest rate fall and resulting in a too loose monetary policy that eventually will lead to an increase in the inflation level. At the end of the day, in one way or another, issuing debt certificates will force the central bank to accumulate an unsustainable debt burden creating excess liquidity, a loose monetary policy, high expectations of future money growth and therefore jeopardizing the goal of price stability.

The last available alternative for dealing with a central bank suffering from repetitive losses and negative net worth is strengthening its financial position through a lump-sum recapitalization or covering its losses on a periodic basis from the government budget. Of course this raises, on the one hand, the issue of the credibility of the government's promise to intervene in strengthening the central bank's financial position; and, on the other hand, this could undermine the institutional independence of the central bank, which should rely on the goodwill and availability of the government to undertake the needed actions entailed by the central bank law.

Another line of thought concerns the idea that financial vulnerability could impact on a central bank's effective independence (Martinez-Resano, 2004), which in turn might again reduce its capacity to attain and maintain price stability. In a similar way, Dalton and Dziobek (2005) maintain that a failure to address financial losses may jeopardize the central bank's credibility and eventually its independence. Following the same line of reasoning, Stella (2003) recognizes that a higher level of financial strength reduces the probability that a treasury rescue will be needed, consequently increasing the credibility of the central bank to successfully achieve price stability.

On the empirical side, the issue of financial autonomy and its practical consequences has received even less attention. Stella (2002, and 2005), using a wide sample of central banks over a period of three different years, investigates whether a proxy for central bank strength is correlated with the attainment of price stability. His results confirm the hypothesis that central banks with weak financial positions tend to be associated with higher inflation. Similarly, Ueda (2004) cites evidence from developing countries where higher levels of inflation occurred in

cases where central bank capital positions were weak. However, there are also examples of central banks with negative capital which have not suffered from credibility problems (the Bank of Chile and the Czech National Bank are two cases in point). Sometimes, especially when the negative net worth is brought about by valuation losses only, a central bank may work well, even with negative capital, which in turn could be considered neither a signal of potential illiquidity, nor a signal of insolvency or limited credibility. In sum, the empirical evidence can still be considered very limited and weak, showing only anecdotal evidence with mixed results, but, and this is what is relevant for our context, it always relates only to the effects of central banks' financial positions on their capacity for addressing the issue of price stability.

Central bank capital adequacy in countries without a monetary policy: As we have briefly reviewed in the previous section, the issue of CBCA has been mainly discussed in terms of the consequences of central bank financial strength in relation to its support of the credibility of monetary and exchange rate policies, which implies considering only those countries where the respective central banks have a domestic currency to manage. This seems perfectly logical, given that the theoretical basis that defines the central bank's activities is obviously money. However from a more pragmatic perspective, in many countries those institutions labeled as central banks or monetary and financial authorities often carry out many other different functions.

In the real world a central bank typically plays a combination of three main roles. First, it might have a macroeconomic function through the exercise of a discretionary monetary policy which affects the price level and, in some cases, through its exchange rate policy. Second, it might have the sector-level and microeconomic function of providing support and regulatory and supervisory services oriented towards maintaining the health of the banking and the financial sector. Third, the central bank often has a special relationship with the state and can carry out several other functions, including acting as its banker and fiscal agent, or its economic consultant.

Among these functions the first one is strictly linked to the presence of a national currency; without it, the issue of operating discretionary monetary and exchange rate policies disappears. Similarly, in the absence of a domestic currency even some sector-level functions are no longer relevant: for instance, providing assistance as the 'lender of last resort' is strongly constrained if the central bank is not able to create sufficient new liquidity (typically through new monetary base) to deal with a banking crisis. However, the remaining functions, and in

particular that of regulating and supervising the financial sector, maintain their significance even in scenarios where a country is adopting another country's currency. The question of central bank financial autonomy is therefore kept alive by the existence of these remaining functions. In other words, in such a context we should ask ourselves whether a central bank's sound financial situation is a necessary prerequisite for establishing the most appropriate institutional framework from which one can perform the remaining functions efficiently from a social and economic point of view.

As we know, the economic literature has identified three conditions (or market failures) requiring governmental intervention through some form of regulation. The first condition relates to the existence of possible natural monopolies, and is generally considered to bear little relevance in the case of financial service regulation. The second condition relates to the possible existence of externalities due to financial and banking crises; the potential negative consequences for the whole sector have been advocated to justify regulation in support of the system. Finally, the third condition involves information asymmetries between the seller of financial products (who has more information) and the investor. These three justifications for financial regulation are then used to highlight the main objectives of financial regulation. These can be summarized as: pursuing macroeconomic stability through various kinds of controls (over currencies, interest rates and assistance as a 'lender of last resort'), assuring financial sector stability through specific rules for financial intermediaries, and providing investor protection through transparency and information rules. With the exception of the first objective regarding macroeconomic stability – which, to make the various kinds of controls effective implies full control over the creation of the domestic currency – all the remaining financial regulation objectives are still equally relevant in a situation in which the central bank has no power to control the amount of money in circulation.

This section argues that even if the central bank does not conduct its own monetary policy but performs a set of other functions, a certain degree of financial autonomy is required for it to act effectively. This is above all true if the central bank is also the authority in charge of financial regulation and supervision. In order to analyze the relevance of CBCA in those countries where legal tenders are other countries' currencies, we have to discuss which factors affect central bank capital, and we have to investigate whether there is an optimal level of capital for central banks. All these questions have to be answered by highlighting the main differences between the central banks in charge of monetary and exchange rate policies and the central banks without these responsibilities. In the literature that

is available it is seen that capital needs have been coupled mainly with the existence of the domestic currency and the conduct of monetary policy together with the exchange rate control. However, the motivations for holding capital are wider, some of which are common to private companies whereas other pertain to central banks.

First of all there are motivations to hold capital that are typical for a central bank. As in the private sector, capital has to cover potential losses, but in the case of a central bank some of these potential losses can be incurred as a consequence of the central bank's institutional mandate. The typical mandate for a central bank comprises conducting the monetary and foreign exchange policies together with the maintenance of a secure payment system and a stable banking sector. Consequently, losses can be incurred in many ways: for instance, losses can be a consequence of the day-to-day management of the currency reserves, or brought about by sterilization operations, or can be a consequence of emergency liquidity assistance when the central bank has to grant concessional credit to rescue ailing institutions. These contingent liabilities tend to reduce both the transparency of central bank accounts and tend to make the assessment of a central bank's financial position more difficult (Blejer and Schumacher, 1998).

Despite these potential losses deriving from a central bank's institutional mandate, central banks should be considered very profitable institutions in view of their monopoly power. Strictly linked with their monopoly power, central banks can enjoy seigniorage arising both from the issue of the currency and from banks' funds held with the central bank. In fact, in the long run a central bank's profitability should be secure as long as the demand for banknotes is maintained and the central bank keeps monopoly power over money issues. In this case there is a sort of virtuous circle between price stability and financial autonomy because low inflation ensures adequate demand for money, and demand for money ensures seigniorage and hence financial independence, which in turn is a key factor for autonomy and reputation – necessary conditions to achieve price stability.

Secondly, as with the case of private banks, a new central bank needs capital to fund the start-up costs of the new institution. Thirdly, capital also has to generate continuing operating income to secure the long-term financing of the central bank's operating costs. In this respect adequate capitalization is a key factor to ensure income to cover any kind of future costs. Finally, the amount of capital also

provides a signal to stakeholders about how well the institution is being managed, although this signal differs from those of private companies because central banks sometimes may incur losses for legitimate policy reasons. In any case, if the public considers negative capital as indicating that the central bank is poorly run, it may erode the bank's general reputation (Vaez-Zadeh, 1991). Moreover, approaching the government frequently would compromise the actual and perceived autonomy of the central bank. In short, central bank autonomy can easily be eroded unless it is supported by an adequate financial strength.

The above-mentioned factors accounting for the demand for capital by central banks are different when a country has no domestic currency or it has decided to adopt another country's currency. Following table highlights the main determinants of central bank capital in cases both with or without a domestic currency. In the case of central banks without a domestic currency, the identification and the relevance of potential liabilities and risks faced by central banks is considerably simpler. But even in this case the question is still one of defining properly both the relevant overall assets or resources of central banks and their potential liabilities in the future. In any case the issue can be dealt with in a similar way by looking at the central bank capital as a function of the following variables: the level and type of risks faced; past, present and future profitability, and, finally, the financial arrangements regulating the relationship between the

Factors affecting central bank capital

Central banks with domestic currency	Central banks without domestic currency
Seigniorage arising from the issue of currency (+)	Not applicable
Seigniorage arising from banks' funds held with the central bank (+)	Negligible
Profit/losses generated from monetary policy and forex operations (+/-)	Not applicable
Losses when providing emergency liquidity assistance in case of banking crisis (-)	Negligible
Generation of net revenues (+/-)	Generation of net revenues (+/-)
Distribution of profits to shareholders (-)	Distribution of profits to shareholders (-)
Tax payment (-)	Tax payment (-)
Capital injections (+)	Capital injections (+)

central bank and the government (profit sharing rules, obligations of the national treasury in case of need, and fiscal treatment).

Central bank risks are related to several aspects, among which are the number of central bank functions; the level of development of the financial sector and the prospects for adverse events affecting its financial stability; the exchange rate regime; and the level of inflation. Consequently, as far as risk assessment is concerned, we should expect that potential risks should be lower for central banks without a domestic currency given that there is no contingency for monetary and exchange rate policies and banking sector crises. However, some possible situations where central banks could be called on to deploy their resources are not applicable. These situations include requests for support to defend the exchange rate, or interventions through sterilization operations to keep the monetary aggregates under control, or even to inject new liquidity to rescue ailing banks. On the other hand, in order to perform its refinancing function in case of a banking crisis, we would expect a central bank without a domestic currency to hold more capital, provided that it cannot create additional liquidity by issuing a new monetary base. Moreover, since in such a situation the central bank would be unable to create additional liquidity, commercial banks are required to retain more capital since they would be unable to access the lender of last resort facility. However, even without monetary and exchange rate policies, a central bank might face the prospect of financial losses on initiatives and policy actions that are warranted on public interest grounds (for instance, initiatives to rescue ailing institutions, or initiatives for the payment systems, or for the setting up of a credit register, etc). In these cases there is a risk that they might be reluctant to act unless they have adequate financial resources to absorb such additional expenses. There are also significant differences as far as the profitability level and financial arrangements are concerned. In the absence of a domestic currency, the central bank has no monopoly power over money creation, and hence no seignorage to exploit. In this case the central bank has more limited sources of income. Without seignorage the central bank has to rely only on government funding, return from its own capital and, if any, commissions or fees from regulated sectors. In terms of the relevant sources of income, there is a much greater role for the capital to serve as a means for generating operating income, and a greater need for adequate financial arrangements to protect it.

In short, when central banks cannot rely on the management of the domestic currency, an adequate level of capital (certainly not one of negative value) becomes a key variable for both operating effectively and for avoiding approaching the government too often, which in turn might affect the actual and

the perceived level of central bank autonomy. But how much equity does a central bank need? Again to answer this question we should consider whether the country has or does not have its own domestic currency. For central banks without a domestic currency, a simple rule might calculate the amount of capital by considering the goal of covering operating costs – assuming a certain level for the interest rate and assuming that the central bank cannot rely on seignorage income. More generally, a central bank should have adequate financial resources to enable it to cover both operating costs as well as potential losses arising from the carrying out of its mandate. This in turn implies considering which areas of responsibility the central bank has. In this respect some general qualitative considerations can be put forward. In general, the more numerous the areas of responsibility given to the central bank, the larger the recommended level of capital should be. For instance, central banks that manage foreign exchange reserves should have higher levels of capital. Similarly, central banks that run monetary policies should have, other things being equal, more capital too; in particular, the larger the magnitudes and the variance of shocks that monetary policy is expected to react to, the larger should be the amount of capital at the disposal of the central bank. The size of the country might also be considered, since in very small countries it is more common to find simple institutional arrangements with only one monetary and financial authority. In these cases it is likely that the central bank will have wider responsibilities. Furthermore, the issue of capital, adequate financial resources and financial autonomy could be even more relevant in small countries if there are substantial fixed costs and scale economies in operating a fully fledged central bank or financial regulator. Consequently, the operating expenditures of central banks in small countries cannot be expected to match, as a ratio to a chosen scale variable (GDP, personnel or currency), to those of larger countries. For small countries this could be considered as an argument in favor of simpler institutional arrangements in terms of both monetary and exchange rate regimes and a framework for authorities. Similarly, this could be viewed as a pointer towards the need for sharing the burden of sustaining the central bank's finances with others like the government and financial intermediaries, although in this case a high level of transparency and accountability would clearly be called for.

Another general consideration concerns the nature of the institutional arrangements by defining the relationship between the government and the central bank, provided that the amount of central bank capital is only one aspect of a system of institutional arrangements between the two institutions. In practice, the nature and extent of a central bank's financial autonomy is shaped by its relationship with the government and how this relationship is reflected in the

structure of possible arrangements for financing central bank activities and for sharing risks, and also in the rules governing the distribution of its profits and losses. For instance, alternative financing arrangements could entail direct transfers from the treasury to the central bank, making its financing similar to that of other government agencies and hence reducing the need for central bank capital. Of course in these cases pre-agreed mechanisms and rules should be in place to avoid compromising central bank financial autonomy. Risk treatment and risk bearing could also be affected. Risky balance sheet items or contingent liabilities could be held by the government. For instance, the government could take over some quasi-fiscal activities from the central bank. Similarly, the government could take the responsibility for providing financial support to banks in difficulties. Finally, given that central banks are often in a position to generate revenues, it is important to assess the rules and conventions governing its profit distributions.

Central bank capital adequacy and accountability: An essential counterpart of having central bank financial autonomy, and even more with respect to general central bank independence, is accountability. The advantages of delegating power to an autonomous regulatory authority must be weighed against the costs of the so-called bureaucratic drift: namely the ability of an agency to enact outcomes that differ from the policies preferred by those who originally delegated power and who have been democratically elected. Delegation poses potential risks to the extent that it involves handing authority to unelected bureaucrats who may pursue policies that serve narrow and private goals rather than the interests of the public at large. Put another way, even agency autonomy could provide bureaucrats with a degree of discretion that could be used to pursue goals other than those objectives and purposes for which the agency was originally established. Paraphrasing Dodd and Schott, central banks and financial regulators might be considered, in many respects, a sort of prodigal child: although born of legislature's intent, they might take on a life of their own, maturing to a point where their muscles could be turned against their creator (Dodd and Schott 1979). But accountability measures should contribute not only to minimizing any abuse of power, but should also ensure that the central bank manages its financial resources efficiently.

A proper financial management framework and close external oversight over the central bank's financial resources can represent crucial factors for entrusting the central bank with an adequate capital base. For this reason, it is important that the banks have transparent financial procedures, effective internal audits and strong ex-post financial accountability mechanisms to provide a full accounting for the

funds entrusted to the central banks. Regular reports detailing the central bank's financial performance, the trends of its operating costs and commenting more generally on its operational efficiency, its risk exposures, and the like, are examples of such ex-post financial accountability. It is more difficult to design proper ex-ante financial accountability measures (cash budgets, strict rules for expense and cost allocation) since there is a risk that they could be used to undermine its financial autonomy and flexibility. In this respect the role of the central bank board is crucial for ensuring that the central bank is efficiently managed while acting as a prudent steward of its financial resources. Explicit and clear rules for the allocation of the central bank's profits can also help to generate confidence in the bank on the part of other institutions and the public as well.

Moreover, proper accountability measures are also crucial for making the central bank autonomy work. Sound business practices and clear and transparent procedures are important for the credibility and reputation of the central bank and the maintenance of its autonomy. In this regard, some recent papers have also shown how greater transparency in central bank operating procedures contributes positively to building a better reputation. However the conclusions found in economic works that discuss the pros and cons of opaqueness and transparency are again fully focused on the conduct of monetary policy. When they provide explanations for secrecy, or when they advocate openness, they always discuss how information disclosure eventually affects monetary policy effectiveness without paying attention to the issue of transparency with respect to the other functions of a central bank. However, transparency is a multifaceted concept and some of its aspects are certainly relevant for a financial regulator as well. For instance, elements like transparency about policy objectives (political transparency), disclosure of economic data (economic transparency), or about internal policy deliberations (procedural transparency), statements about policy decisions and future actions (policy transparency) are concepts fully applicable to all central bank functions. As in the case of results obtained in the field of monetary control, we might therefore maintain more generally that greater transparency should be beneficial for building a central bank's reputation – the main central bank asset in all its activities.

In fact, transparency and accountability may help a central bank's management to become more autonomous through two main channels. *First*, high accountability entails sharing more information with others which in turn can contribute to developing a public consensus around the central bank's policies. *Second*, transparency and accountability should also help both in shielding the institution from external interference – making more difficult for outsiders to exercise

pressure –and making it more difficult and costly for insiders to satisfy outsiders’ requests. Similarly, the fewer checks and balances there are the easier and less costly it is for the political authorities to undermine central bank autonomy. This is particularly true and relevant for young central banks and small countries, given the relationship between central bank autonomy on one hand and the prevailing political culture and institutional checks and balances on the other. Compared to larger countries, small countries are usually characterized by less transparency in political processes, fewer political checks and balances, a minor role by the media, and a closer government–business nexus. If these features are combined with the results of some recent empirical studies showing the key relevance of broader political and institutional conditions for the actual degree of autonomy, it is easy to argue that in small countries greater attention should be dedicated towards the foundation of the appropriate institutional conditions that will ensure effective and real central bank autonomy.

The issues of financial accountability – namely the fact that the central bank has to satisfy certain standards of financial management – are, in essence, no different from those encountered in the principal–agent literature. However, they pose greater challenges when accountability refers to a public and institutional setting. In fact, when accountability problems arise in a private context, they involve a homogeneous group of principals and agents, typically between shareholders and company managers. This can be alleviated by both contractual constraints (for example, the terms and conditions of contracts) and market constraints (for example, competition for corporate control and the threat of takeovers). The opposite is true in a public setting, such as autonomous financial authorities, where a diverse set of interests exists, including that of politicians, financial intermediaries, debtors and investors. Furthermore, accountability is more difficult to monitor, especially in a context without a monetary policy and therefore without explicit targets for the inflation rate. Whereas performance is easily measurable in a private company’s financial statements, this is not so for a central bank. For the latter, performance should be measured by assessing the degree to which it has achieved its various institutional objectives. An additional problem in a public context is the fact that there is no market for central bank functions, and hence no market discipline to alleviate principal–agent problems. Finally, these difficulties are exacerbated by the special need for confidentiality inherent in supervisory work within the financial sector.

Summary: In the recent economic literature the notion of CBCA has been discussed in relation to the conduct of monetary policy. However, there are countries which do not have the problem of managing their own monetary policy,

but still have a central bank or a financial authority performing a variety of functions. The number of these countries is on the rise, and not only includes the smallest nations which adopt other countries' currencies, but also those with 'extreme' monetary regimes such as dollarization, currency boards or monetary unions. These institutional settings raise the question of CBCA in a framework where there is no monetary policy to run.

This section has argued that even when a central bank does not conduct its own monetary policy but performs a set of other functions, and – above all – is also the financial authority in charge of financial regulation and supervision, a certain degree of capital is required for it to act effectively, achieve its final objectives and minimize the risk of interference by external factors (both political and industry-level pressures). Such factors could negatively impact the reputation of the regulatory agency, and a damaged reputation will eventually cause investors to defer or revise their investment decisions. The end result of such a scenario would be a hampered financial sector.

The section has also discussed the factors that affect CBCA, highlighting the main differences between those of central banks in charge of monetary policy and central banks without this particular responsibility, showing why even for a central bank without a monetary policy an adequate level of capital remains a key factor in order to operate both effectively and autonomously. Finally, the chapter has analyzed the complementary relationship existing between CBCA and financial accountability, focusing on how the relevance of CBCA and accountability changes in a context in which the central bank does not run its monetary policy, but is in charge of regulating and supervising the financial sector. The conclusion is that in these situations, despite the presence of more binding constraints, the necessity for CBCA could become even more compelling. This is undoubtedly so if financial sector growth is to remain a key final objective of such countries' economic policies. Ideally, a central bank should maintain sufficient capital to absorb any losses arising from the discharge of its functions and enable it to maintain a non negative capital position. Determining the level of capital requires a central bank to evaluate the risks it faces both in terms of the size of these losses and the probability of their occurrence and then adjust the level of capital to cover these losses. The issues surrounding the establishment of a risk based capital for central banks are complex and difficult. This difficulty is reflected in the fact that central banks generally do not have such a capital adequacy framework. However, robust capital adequacy frameworks have a dynamic element that enables the adjustment of capital to reflect changes in anticipated risk levels, however defined.

The paper adopts a conceptual position that, over the medium term, a central bank needs to maintain a risk-based level of capital adequacy, which as a minimum should be non negative. This allows a zero capital situation, which may be appropriate in specific situations. The basis for aggregate non negative capital levels lies in issues of central bank independence, policy efficacy, reputation integrity and fiscal transparency that has been elaborated by ed Peter Stella, (1997), *Do Central Banks Need Capital*, IMF Working Paper, for a discussion on the effects of negative equity on central bank independence and policy efficacy.

As central bank capital adequacy derives from its functions, the level of economic development, stability of the financial systems, and the prospects for adverse events affecting the financial sectors, the exchange rates, and the level of inflation, there is no definitive answer as to what constitutes capital adequacy. Nor are there clear methodologies developed for determining such a level. A further complication arises from the risks of policy efficacy impairment resulting from too dynamic a response to adjusting levels of capital. Negative capital not only limits central bank independence, it represents a de facto, non transparent, interest free, credit to government. While the inflationary effect of old stocks of negative equity have already passed through into the economy, any increase will have an expansionary effect on the money supply with a deleterious effect on the efficacy of central bank monetary or exchange rate policy. By maintaining a matching fiscal surplus the government can offset this, but history is not repleted with examples of governments moving to redress the capital deficiencies when fiscal positions weaken.

Central banks derive capital from three sources. *First:* authorized capital which is also known as statutory capital is specified in the central bank law. *Second:* retained earnings covering those profits that have not been distributed as dividends or assigned to revaluation reserves. Hence, they will include balances in the retained earnings account and all non revaluation reserves, such as general or special reserves. *Third:* revaluation reserves. Conceptually, revaluation reserves consist of unrealized revaluations for assets and liabilities. These revaluations may be assigned directly to the reserves or else recognized in the income statement before being transferred to the reserves. In some central banks, system limitations, or policy decisions, result in these revaluation reserves accumulating realized as well as unrealized gains and losses. Generally, this is a sub optimal situation as it confuses the purpose of the revaluation reserve.

In this discussion, capital refers to the net capital position, which is the sum of these three. Authorized capital is usually prescribed in central bank legislation,

perhaps with a statutory requirement for recapitalization in the event of reported capital dropping below zero or the level of authorized capital. Issues of transparency, independence and financial sustainability require that governments to execute such recapitalization using marketable bonds or other real assets, a requirement reinforced by developments in accounting standards that require the disclosure of the fair value of all assets. Conceptually, a timely and automatic recapitalization mechanism could enable a central bank to operate with zero capital, even in a high-risk environment, though the integrity of any such mechanism rests on a government's willingness to assume the fiscal burdens involved and thus it is a problematic assumption in many situations. This tends to make it difficult to meet requirements for risk-based changes in capital by adjusting authorized capital. Consequently, banks adjust capital to cover risks through retaining changes in the value of their assets or by retaining earnings from operations. This paper is concerned about the recognition, reporting and disposition of these latter two elements, as evolution in accounting standards have changed the composition of measured profit, creating some difficulties for central banks, particularly in those situations where the central bank law prescribes procedures for calculating profits and distributable dividends. The issue is to ensure central banks are able to measure profit in compliance with their accounting framework but avoid adverse effects through inappropriate distribution of dividends.

Section II: Central Bank Profit and Loss

Sources of income: Before discussing the technical issues relating to the calculation of profit and dividends, it is appropriate to review the sources of central bank income and the major types of expenditure they undertake as this will provide a basis for understanding a government's expectations of dividends from central bank operations. The main sources of central bank income arise from the administration of delegated government monopoly rights in the issue of circulating currency, monetary policy and financial system stability. Each of these functions offers the central bank the opportunity to generate income through the creation of zero or low cost liabilities, the proceeds of which can be invested in interest generating assets. Of these, the most profitable are the issue of circulating currency and the existence of the commercial banks' unremunerated bank reserves. Even when the bank remunerates reserves, this is usually at below market rates, thus enabling the central bank to profitably reinvest them. The seigniorage profits from the currency in circulation investments usually constitute

the *single greatest source of revenue* for a central bank though realization of this may not occur where government direction obliges the bank to undertake directed or discounted lending, or the proceeds are required to cover losses in other functions. The second major source of earnings is interest receipts from the discharge of central bank functions, including monetary policy operations, management of foreign exchange reserves and the provision of liquidity to the financial and payment systems.

Acting as a government agent, or principal, in relation to the international financial institutions, the central bank may pick up a range of discounted liabilities that it is able to reinvest at market rates. Exercise of SDR repurchase rights is an example of such arrangements, where the bank invests these below market SDR liabilities in market remunerated foreign exchange assets. As the central bank's functions often result in it holding an unmatched set of assets and liabilities, opportunities exist for large valuation gains to accrue for the bank through interest and exchange rate movements, which poses particular problems for central banks as, under the new accounting frameworks, most of these revaluation gains are recognized before they are realized. This creates specific problems for banks when calculating distributable dividends. Compounding the issue is both the scale of some of these revaluation movements and the fact that central bank policy may be the author of the price movements, especially in the area of interest rates on domestic securities. Accruing large revaluation gains because of one's own policy actions exposes the bank to criticisms of managing to maximize its income, rather than policy objectives. The *final source of central bank revenue* lies in fees and miscellaneous income derived from other activities such as bank supervision, collectors' currency and payment and banking services. For most central banks these are immaterial, particularly once netted against the expenses of providing the services and so will not be featured in the discussion.

Application of Income: The main central bank expenses are usually interest charges incurred through the discharge of its functions or through acting as the government's borrowing agent. In the absence of opportunities to reinvest idle liquidity, the costs of implementing monetary policy may result in expenses significantly greater than the income for the function. The same is true for some exchange rate policy régimes. In these situations, the central bank looks to transfer income from its profitable functions to cover these costs, something not possible if the bank has already expended the profits from monopoly operations on other activities. Another area of regular central bank expenditure is its standard operational costs, both cash and accrued. The largest single operational cash cost

is usually wages while accrued costs will include both depreciation and the creation of write downs for non performing loans.

Funding for this is usually met through the fees income or interest rate spread for each function and does not require transfers of income between functions, though the scale of loan write downs in the event of a financial crisis is an exception. The most unpredictable demands on central bank income arise from losses incurred from price and exchange rate movements of unhedged bank assets and liabilities and the costs arising from commercial bank failure and financial system crisis. This is not a universal situation as some central banks are in a position to hedge their exchange rate positions or fully collateralize their banking system exposures. The scale of central bank losses is a function of the factors discussed earlier in the paper and will affect different central banks to varying degrees but they remain the greatest cause of central bank capital deficiency and the main reason for the central bank to maintain appropriate levels of reserves.

Allocating profits between the CB and government: Ramsey's 1927 approach to optimal taxation determines a set of tax rates and of seignorage that minimize welfare losses of a representative individual, for a given total revenue for the State. This implies that seignorage should never be used, and neither should other taxes, beyond the point at which the marginal distortions of each type of tax are equalized. This point of view seems to suggest that government and/or the treasury should be allowed to determine monetary policy along with other types of tax. However dynamic inconsistency (short horizon) problems mean that politicians' actions display an inefficient inflation bias (Kydland and Prescott (1977); Barro and Gordon (1983)). Further, leaving the discretion over seignorage in a vague state when the government injects electoral considerations and political instability into monetary policy. This implies that governments are unlikely to manage seignorage in line with the Ramsey principle (which could entail no inflation). Since the inflation tax can be imposed without any legislation and is less visible than other taxes, it is likely to be overused by political authorities. Current conventional wisdom therefore recommends rules rather than discretion in the allocation of seignorage between the CB and the government.

As a consequence of secular growth and the associated increase in the demand for money, central banks accumulate positive amounts of seignorage which are normally substantially higher than the operating expenses of the bank. Those funds ultimately belong to society and could be used to finance part of government expenditures but, due to reasons discussed above, should be governed by transparent rules rather than by governmental discretion. Today, most countries

recognize the wisdom of this approach and have fixed rules for the allocation of profits between the CB and the government. However, those rules occasionally leave some room for ex-post negotiations between the government and the CB, and are not always very transparent. In some cases they open the door for evasion of deficit limits. There is little doubt that clear rules for the allocation of CB profits between the government and the CB constitute a good practice benchmark in normal times. However, such rules should also contain contingencies for cases in which, following exceptional circumstances, CB capital becomes negative. In the absence of such contingencies, the rules should be sufficiently flexible to allow the bank to rebuild its capital to the desirable level within a reasonable period of time.

This could be done by allowing the bank to retain a larger fraction of its profits, after a period of substantial losses. Implementation of such capital rebuilding procedures appears to be particularly important when the negative capital at the bank largely originates from policy decisions taken by the government in areas that are not under the direct authority of the CB. Examples include decisions to defend a fixed peg or to bail out financial institutions through the CB. In the absence of such capital-rebuilding mechanisms, government would have the ability to severely reduce the actual independence of the bank through the negative capital ‘back door’ even if the legal independence of the bank was high. The argument is sometimes made that the CB should not worry about the effect that negative capital has on its independence since it can always print money to replenish capital. However this argument disregards the fact that such policy may conflict with the policy objectives facing the bank at the time. In particular, an attempt to rebuild negative CB capital by relying on money creation may conflict with policy measures needed to achieve an inflation target. It would appear that other methods are preferable.

It is impossible to anticipate every contingency. Yet an *ex ante* specification of the mechanisms through which CB capital is to be rebuilt in case of need (subject to feasibility constraints) is better than *ex post* negotiations between the government and the CB. Clearly specified and transparent ex-ante principles regarding the allocation of profits between the CB and the government, in the event that CB capital is seriously depleted, safeguard the central bank’s independence. They also enhance the credibility of the commitment to price stability on the part of both the government and the CB.

Central Bank Losses: Under normal circumstances, a central bank should be able to operate at a profit with a core level of earnings derived from seigniorage.

Losses have, however, arisen in several central banks from a range of activities including: open market operations; sterilization of foreign currency inflows; domestic and foreign investments, credit, and guarantees; costs associated with financial sector restructuring; direct or implicit interest subsidies; and non-core activities of a fiscal or quasi-fiscal nature. Failure to address ongoing losses, or any ensuing negative net worth, will interfere with monetary management and may jeopardize a central bank's independence and credibility. Transparency and accounting standards require net losses to be recorded as such in the income statement, charged against capital, and any resulting negative net worth to be properly disclosed in the equity section of the balance sheet. Net losses should not be presented in the balance sheet as assets unless they have been formally covered by the government.

Where central bank losses give rise to negative net worth, IMF recommended practice is for the government to recapitalize the bank by an injection of either cash or government securities, through a transparent budgetary appropriation. The following section addresses some general principles and practices for handling central bank losses. Subsequent sections provide further detail on the specific circumstances of recent cases; other factors that may influence central bank profits and losses; accounting principles for the treatment of losses; and legislative practices for covering central bank losses.

Implication of Losses for Central Bank Policy and Transparency: Central bank losses can arise in two ways, namely when: (a) operating expenses exceed operating income, and result in net operating losses; and (b) when net valuation losses from the revaluation of assets and liabilities and any impairment losses exceed operating income. A central bank incurring a net operating loss is, effectively, creating liquidity since it is transferring more cash to external entities than it is receiving. Accordingly, when a central bank operates with such losses, and especially when these are significant and ongoing, central bank policy can be affected and the losses may in fact impair the effectiveness of monetary or exchange rate policy. Net losses that arise from large revaluations may be recognized in the accounts but since actual losses have not been realized, they do not have the same liquidity effect as operating losses. But they must, nevertheless, be recognized in the accounts as soon as they are identified. The treatment is analogous to a bank charging impairment losses against income and the result is the same. Once losses are recognized, amounts must be set aside in the future from income to restore the desirable level of net worth. This action must precede any decisions concerning the distribution of profits to shareholders. Ignoring such losses in the hope that they may be reversed should not be an option for a central

bank, in part, because of its leadership role for the financial sector, the prime conduit of its policy actions.

To maintain transparency, and in line with accounting standards, net losses should be recorded on the face of the income statement, or deducted against the capital and reserves, thereby reducing central bank net worth. In extreme one-off situations, such as when major valuation losses occur, or in ongoing cases, losses can result in negative net worth for a central bank. ³ Negative net worth signals to the public that central bank losses have completely eroded the bank's capital, and must be accompanied by action to remedy the situation.

From an accounting standards viewpoint, and notwithstanding central bank practices in some countries, net losses should not be shown as a deferred or unfunded asset in the balance sheet of a central bank. This is because such treatment does not mirror the underlying economic reality for the central bank, nor does it meet the asset recognition criteria established in accounting standards. In this latter regard, an asset should only be recognized on the balance sheet once action has been taken to cover the losses or negative net worth. The impact of losses on central bank operations and the need to properly cover them is now recognized in the laws of many countries through provisions for government support in case of major central bank losses. Usually, this support takes the form of a budgetary appropriation by the central government in either cash or government securities to recapitalize the central bank.

In circumstances where the government is unable to successfully appropriate the necessary budgetary funds for the recapitalization, the central bank should be prepared to disclose its negative net worth to the public, along with actions that may be taken to restore net worth over time. Such disclosure provides a transparent view of the true financial condition of the central bank (including negative net worth). It also avoids creating an impression that the management of the central bank is either unwilling or unable to confront the problems that have given rise to the losses. Finally it serves to put the financial sector and the community generally on notice that the central bank must adopt a stringent and prudent approach to any further creation of credit or extension of central bank financial support.

Causes of central bank losses: Central bank losses recorded by countries in Africa, Europe, Latin America, and the Asia-Pacific region during the 1980s and 1990s reflected many factors, including operating and valuation losses, and subsidies. In many instances, losses were incurred in connection with activities

which go much beyond conventional central banking functions. Specific causes includes: the transfer of government or private sector debt to the central bank at an appreciated exchange rate; acquisition of nonperforming assets through development banking activities or from troubled financial institutions; devaluation of the domestic currency when foreign liabilities exceed foreign assets; losses on domestic securities or foreign currencies in the bank's portfolio; improper pricing of contingent liabilities such as foreign exchange guarantees; interest rate subsidies on loans to preferred sectors, institutions, or individuals; subsidies to exporters; assumption of the exchange risk in on-lending funds borrowed abroad; foreign exchange transactions at subsidized non-market rates; operational expenses associated with open market operations; and uncontrolled administrative outlays and transfers by the central bank.

In many cases, the accumulated losses became quite substantial before they were addressed, and represented a significant proportion of GDP. Also, it highlights the threat that unresolved central bank losses can pose to a central bank's ability to pursue an independent monetary policy and to fulfill its role in stabilizing the country's currency and domestic price level.

Some important lessons that came from these experiences are:

- overburdening of a central bank with tasks that go beyond monetary and exchange rate policy responsibilities should be avoided;
- the government should assume responsibility for the quasi-fiscal losses of the central bank; (a) accumulated losses must be resolved; and (b) steps must be taken to remove or limit the potential for future losses.

The latter two require actions to address the causes of losses, and also to recapitalize the central bank, most often through the formalization of the central bank's claims on the government and the conversion of such claims into debt instruments with an appropriate return.

Some factors of particular relevance: Causes of central bank losses that are of particular relevance for the IMF's work are allowances for loan losses and bank restructuring costs; the impact of exchange rate devaluation on countries' obligations to the IMF; and the exclusion of certain items from the determination of net profits.

Loan loss allowances and bank restructuring costs: Central banks in many countries have provided finance and credit that extended beyond the usual range of short term, collateralized, central bank standing facilities. Such extended facilities included central bank financing associated with the provision of

financial support during a crisis, implicit or explicit deposit guarantee schemes, or with bank restructuring arrangements. They had also included financing provided to entities beyond the group of financial institutions that are normally regarded as recipients of central bank credit facilities. This can occur where, for example, a central bank undertakes commercial or directed credit operations involving public or private enterprises, or where the central bank provides guarantees to support borrowings by other entities.

Extended credit arrangements expose central banks to a broader range of commercial risks, including risk of default or inadequacy of collateral, than those typically found in central bank portfolios. Where such operations occur, central banks must carefully evaluate the extent to which claims on debtors may be impaired and establish adequate loan loss allowances to cover possible losses in the same manner as would any commercial organization undertaking similar operations.

Bank restructuring costs may contribute to central bank losses in several ways: from write-offs of loans provided to banks that are subsequently placed into liquidation; from loss of interest when loans provided to banks are transferred to another agency at principal value only, i.e., excluding any accrued interest; from acquisition of low-income-earning assets— including the transfer of insolvent banks to the central bank and central bank take up of long-term low coupon government bonds; or as a result of additional operating costs absorbed by the central bank in implementing or managing a restructuring plans. The realization of guarantees provided to weak banks would have similar effects.

IMF currency valuation adjustments: In accordance with the Articles of Agreement of the IMF, each member undertakes to maintain the value of the Fund's holdings of that member's currency in terms of the SDR. Such holdings include funds held in the IMF No. 1 and No. 2 accounts at each member's central bank, and the amount of any securities issued to the Fund either by the central bank or other fiscal agent. Securities usually represent the main means by which a member exchanges its own currency with the IMF for access to foreign currency under an IMF facility. Where the securities become a part of the central bank balance sheet, the annual currency valuation adjustment will initially be recognized as a component of all exchange rate revaluations. Where central banks hold an equivalent amount of foreign exchange, revaluation gains and losses could be expected to be offsetting. Where, however, the foreign exchange has been drawn down and used by, say, the government, subsequent revaluations can expose a central bank to large negative valuation adjustments in times of a

depreciating national currency. Such valuation adjustments are usually “paid” once a year through the issue of a further security or promissory note to the IMF. This requires an accounting entry in the books of the fiscal agent, normally the central bank or the ministry of finance, to reflect the valuation loss, depending on the institutional responsibility in each country for such payments. Where this responsibility falls on the central bank, it is important that the effects of the currency valuation adjustment are properly reflected in the bank’s financial statements and clearly explained in the notes to the financial statements.

Exclusion of items from net profit determination: In one country, legislative provisions have excluded valuation losses, and certain interest rate costs associated commercial bank deposits at the central bank, from the profit and loss accounts of the central bank concerned. As a result, while the bank’s profit and loss account recorded net profits, debit balances representing the valuation of losses and interest costs that have accumulated in a separate account was shown as an asset in the bank’s balance sheet. This approach overstates net profit and, accordingly, available amounts for distribution are not a recommended practice.

Specific Loss Experiences: The following Table provides an overview of loss experiences of central banks in a number of countries in the 1990s. This section

<i>Country</i>	<i>Year of loss</i>	<i>Loss in millions of national currency</i>	<i>Loss as a percentage of prior year central bank net worth</i>	<i>Loss as a percentage of central government expenditures</i>	<i>Loss covered by</i>
Brazil	1997	1,875 (real)	52	1.5	Government
Chile	1997	756,560 (peso)	570	11.3	Central bank
Czech Republic	1996	8,653 (koruna)	32	1.8	Central bank
Hungary	1996	51,600 (forint)	108	1.8	Government
Korea	1994	73,331 (won)	7	0.1	Central bank
Thailand	1997	67,613 (baht)	147	7.7	Central bank

Sources: Central bank annual reports and Internet sites; IMF, International Financial Statistics, various issues.

presents an examination of some specific aspects for each country, including the main factors behind the losses, how the losses were covered, and how they were reported in central bank financial statements.

Brazil: Banco Central do Brazil's (BCB) losses for the year ended December 31, 1997, largely reflected the effect of interest differentials between the cost of domestic liabilities (including securities issued by BCB for monetary policy purposes) and the relatively low return on the bank's holdings of foreign currency assets. The losses were recognized subsequently in a balance sheet account "Result to be Offset," where they were held until such time as they could be offset by positive results in future fiscal years. The balance of the account (i.e., accumulated losses) at end-December 1997 was R\$ 9.6 billion. Although the losses have not been securitized as a claim on the government, the balance of the Offset Account earns interest paid by the government at a rate based on the overnight interbank market rate. Since January 1997, this interest has been credited to a separate provision account that is used to offset the total of accumulated losses. The losses and their treatment are disclosed in an Appendix to BCB's Annual Report, which is also available on the bank's Internet site.

Chile: Losses recorded by the Banco Central de Chile (BCC) in 1997 reflected the mismatch between domestic and international interest rates from the use of BCC paper to sterilize foreign inflows, and an ongoing effect of reduced earnings stemming from BCC's involvement in a scheme to recapitalize the banking system in the late 1980s. In the case of sterilization activities, losses came about because BCC's earnings from foreign exchange assets were considerably below the cost of securities issued to absorb the liquidity impact of the foreign inflows. In the recapitalization exercise, the BCC injected cash into commercial banks through a take up of subordinated debt equivalent to the face value of banks' nonperforming loans. Subsequently, a debt for equity swap also saw the BCC hold equity positions in banks, in preparation for a privatization of the banks concerned. The low level of earnings attached to the subordinated debt and equity holdings⁸ has affected the ability of BCC operating income to absorb the costs of sterilization and since 1992, the BCC has recorded successive net losses. In addition, BCC was also accumulating unrealized losses on changes in the value of its equity positions in commercial banks. BCC net losses have been charged against its equity. In 1997, these losses resulted in negative net worth, which was disclosed in the bank's 1997 annual report.

Czech Republic: Czech National Bank's (CNB) losses for the year ended December 31, 1996, reflected losses on financial transactions undertaken as part

of the bank's monetary operations to sterilize the effects of foreign capital inflows, during a period in which a fixed exchange rate regime operated in the Czech Republic. (This regime was replaced, in 1997, by a floating regime as part of a range of measures adopted by the Czech Government to restore the pace of economic reform.) The losses were included as a negative item against CNB capital and reserves, but did not result in negative net worth for the bank. (The Central Bank Law does not contain any provisions for the government to cover CNB losses.) In 1997, CNB profits were in excess of CZK 10.7 billion, and these were allocated to cover the 1996 losses and also to increase the bank's reserve funds. It should also be noted that the 1997 result was determined after the Czech National Bank charged some CZK 30.4 million (equivalent to almost three times the resulting net profit of CZK 10.7 million) against income to fund specific and general loan loss provisions for losses recognized during 1997. Details of the 1996 net loss and 1997 loan loss allowances were reported in the CNB's Annual Reports, and more recent figures are also available from its Internet site.

Hungary: The National Bank of Hungary's (NBH) losses in 1996 reflected two contributing factors. The first was associated with increased foreign expenses associated with domestic liabilities and repurchase operations used to sterilize foreign currency inflows. During 1996, the NBH continuously bought foreign exchange, thereby increasing the foreign issue of the bank. The second factor derives from the NBH's role as the foreign borrowing agent for Hungary. In this role, the NBH accumulated significant foreign exchange valuation losses on its net foreign currency liabilities that were recorded as a non-interest-bearing claim on the government in the NBH balance sheet. Although there was a process for gradual securitization of this claim into an interest-bearing claim on the government, the non-interest bearing component accounted for almost 30 percent of total assets at end-December 1996, which correspondingly limited the scope for NBH revenues to cover increases in domestic interest expenses, particularly those associated with sterilization operations. The losses of 1996 were covered by a budgetary allocation from the government which resulted in a small net profit available for distribution and payment of taxes. During 1997, legislative changes were introduced which saw the transformation of the remaining noninterest-bearing claim into an interest-bearing foreign exchange claim recognized by the government. This transformation also had the effect of covering the NBH's previous net foreign exchange liability position, thereby reducing the possibility of further foreign exchange valuation losses. The losses and their remedies were fully disclosed in the NBH's 1996 and 1997 Annual Reports, which can also be accessed through the bank's Internet site.

Korea: The Bank of Korea (BOK) incurred relatively small net losses in 1993 and 1994, largely as a result of negative interest margins between central bank securities issued and counterpart foreign currency assets. The losses were recorded as a negative item against BOK capital and reserves in 1993 and 1994, but did not result in negative net worth for the bank. Profitable operations returned in 1995 and 1996, and in the latter year, the bank allocated around two thirds of net profits to the government. Summary data on BOK assets, liabilities, capital, and profits and losses can be obtained from the bank's Internet site.

Thailand: During 1997, the Bank of Thailand's (BOT) General Department incurred substantial foreign exchange losses of around B 170 billion through both market operations and end-year revaluation of foreign currency liabilities and assets. The market losses arose as the General Department engaged in foreign currency spot and swap transactions and in its market interventions in the period leading up to the floating of the baht. A valuation loss ensued when the Department's net foreign currency liability position was revalued at end-December 1997 exchange rates, which were considerably below the rates prevailing at the beginning of the year.

Of the total losses of B 170 billion, some B 104 billion was recognized in the Profit and Loss account, and B 66 billion was recorded as deferred unrealized losses in other assets on the balance sheet. The B 104 billion losses charged against income resulted in a net loss of B 68 billion. This was subsequently charged against the capital and reserves of the General Department, producing a negative net worth equivalent to about 3 percent of the total assets of the General Department. The remaining deferred unrealized losses recorded on the balance sheet were to be amortized over a four-year period.

Legislative provisions of the Currency Act and the Bank of Thailand Act at the time required BOT to maintain entirely separate accounts for its General Department and the Issue Department. Consequently, the bank was not able to offset General Department losses against profits of the Issue Department for 1997. The bank did, however, disclose in its 1997 Annual Report that Issue Department profits would have been adequate to cover the losses but for the legislative requirements. Subsequently, the government issued the Emergency Decree in 2002, allowing a one-time transfer of assets from a Special Reserve Account, which is part of the Issue Department's Account, to eliminate accumulated losses.

Accounting Principles for the treatment of Central Bank Losses: From the above specific cases, a range of accounting responses to central bank losses is evident. Not all of these, however, are fully consistent with generally accepted

accounting practices for recognizing and recording losses, or with IMF recommended practice. There are two main elements of relevance here. The first concerns recognition and treatment of actual losses, and the second concerns treatment of any subsequent earnings that may flow from a resolution or coverage of losses.

Recognition of losses: It is imperative that any losses are reflected in the financial accounts as soon as they are first discovered. This principle applies to central banks just the same as it would to any other organization. Accounting standards require that all losses resulting from operations, or from diminution in asset values below historical cost, be first recognized in the income statement. Supporting this, for example, the conceptual framework for International Financial Reporting Standards does not permit losses to be recognized or accumulated as an asset on the balance sheet, because such losses do not meet the recognition criteria for balance sheet assets. Once a loss is recorded in the income statement it must then be charged against capital and reserves. When the losses result in negative net worth, this must be shown as a negative item in the equity section of the balance sheet until such times as action is taken to cover the losses, either through recapitalization or other financial structuring of the organization.

Application of these general principles to central banks is evident in some of the cases above, for example, where losses have been charged against capital and reserves or where the government has covered the losses with a budgetary outlay or through the issuance of securities to the central bank. Only when the government has actually acknowledged its coverage of losses through an issue of securities (which is equivalent to recapitalization), or where the central bank law provides for the “automatic” issuance of such securities, can a corresponding central bank asset be recognized.

Other cases involving the recording of losses as an asset or a deferred asset when, for example, a government is unable to cover losses, would not meet the International Standard definition of assets. This definition requires that an item can only be recognized as an asset when it is probable that the item will give rise to a future flow of economic benefits, and that it can be reliably measured. While losses can be reliably measured, they would fail the probability test in the absence of an acknowledgement, or action, by the government to cover the losses. All the bank has at such a point is a deficiency of assets that it hopes to replace with a subsequent claim on the government. Until such time as that claim is accepted, the loss must be reflected as a negative element of equity. Where losses result in negative net worth for a central bank, the practice recommended by the IMF is

that losses be covered by the issue of government securities bearing interest at market-related rates.

Recognition of earnings flowing from coverage of losses: Accounting standards require that any interest payments received on securities issued by the government to cover central bank losses be recognized as income and recorded as such in the income statement. They should not be credited directly to a balance sheet account. Once a profit has been determined, such profits may then be allocated toward redemption or amortization of assets created to cover the losses. In this regard, a feature of central bank law in some countries is that when government securities have been issued to cover past central bank losses, any future profits are first allocated to the redemption of such securities. Related to this is the more general accounting principle that all payments and receipts that are in the nature of interest must be recognized in the income statement for the determination of net profits. Failure to abide by the specified rules results in financial statements that are not comparable with those of other organizations, and which also lack transparency in terms of presenting the true position and results of central bank operations.

Legislative Practices for Coverage of Central Bank Losses: Model central bank law as recommended by the IMF includes provisions for coverage of central bank losses through two main features. These features are found in the central bank laws of many countries. The first feature provides for central banks to maintain general and other reserves which are available to cover operational losses and other risks facing a central bank. This requirement serves to establish the basic financial soundness of a central bank. The level of reserves may be set as a multiple of capital or, as has been the case more recently, as a percentage of the monetary liabilities of the central bank. The second feature applies to situations where a central bank has negative net worth. This can occur when the value of a central bank's assets falls below the level of its liabilities and unimpaired capital as a result of losses. In this case, the law would require the government to issue to the central bank securities that bear interest at market-related rates. This process restores the solvency of a central bank. Furthermore, the requirement that the securities earn interest also serves to provide a level of core earnings to cover normal operating expenses, thereby reducing the scope for further operating losses.

Implications and Remedies of Central Bank Losses: Indeed, the notion of a loss seems so alien to the nature of central banking that its emergence on the books of a central bank may give the impression of a serious breakdown in financial discipline and raise doubts about the soundness of the entire financial

system, and even the economy as a whole. Such an impression may not be fully justified, however. It is not necessarily a lack of financial discipline by the central bank that leads to losses; they often represent a hidden form of fiscal deficit and, depending on how they are treated, they do not necessarily spell disaster.

A loss, in principle, a possible outcome of central banking operations can arise even in connection with the most basic of all central banking functions: currency issue. A loss will occur when the rate charged by the central bank on its loans is not sufficiently high to cover the printing, minting, and administrative costs of currency issue. More generally, losses could arise from a multitude of factors, and, in practice, many central banks have incurred persistent losses, for example, the Bank of Jamaica and the central banks of Argentina, Brazil, Chile, Gambia, Ghana, the Philippines, and Turkey.

In some countries, central banks have found themselves unprepared to deal with the losses, reflecting, in part, the inadequacies of the central banking laws. Indeed, many central banking laws do not incorporate adequate provisions regarding the financing of central bank losses. Even where the provisions of the law are adequate, the practice in countries where the central bank has experienced losses has been to ignore them until their size becomes a significant macroeconomic and political issue.

This complacency in dealing with central bank losses could reflect the improbability of such losses in developed countries and a view that a central bank cannot become insolvent. According to this view, central banks, unlike other banks, can have a persistently negative net worth, so that their losses need not be funded. The statement could be interpreted to mean that central bank losses are not important because they can be financed through the creation of additional losses.

This section considers this proposition and concludes that central bank losses do matter, as they influence economic aggregates both directly and through their impact on monetary management. The sources from which central bank losses originate are reviewed in the next section. This is followed by a discussion of the problems posed by the losses and a few suggestions for preventing their emergence. Conclusions of the paper are summarized in the last section.

Sources of Central Bank Losses: In a discussion of the origins of central bank losses, it would be useful to distinguish current losses from capital losses. Current losses arise from imbalances in revenues and expenditures and capital losses result from differential changes in the value of assets and liabilities. Current losses

(or gains)-whether realized or accrued-are always calculated into the financial results of the central bank, but certain capital losses are not. For example, a capital loss arising from an increase in net foreign liabilities due to a change in the exchange rate is usually excluded from the computation of annual profits and losses. It is attributed to a valuation account, which is an item in the balance sheet. This approach allows the central bank's net worth and its reserves to remain intact as a result of such a loss until it is realized. As in any kind of business activity, central bank current losses occur when earnings from assets are lower than the cost of operations. This observation can be translated into a relationship between the spread between average return on earning assets and the average charge on remunerable liabilities, the nonearning assets and the base money. To prevent losses, at any level of capital, the spread has to be larger, the larger are the nonearning assets and the smaller is the base money. In some countries interest is paid on all or part of financial institutions' deposits at the central bank, which are included in the base money. Strictly speaking, the relationship mentioned in the text holds for that part of the base money on which no interest is paid. This distinction is ignored in the paper. In other words, to prevent losses, the ratio of base money to nonearning assets would have to increase as the spread is reduced. This can be seen from the balance sheet relationships. Losses could also be financed through inflation, but in that case the net worth will not remain persistently negative.

The statement should not be interpreted as recommending that the central bank operate primarily to avoid losses. Even if it could control the factors that affect its losses, it should not behave as a profit maximizing or cost-minimizing enterprise. By manipulating its spread, the base money, and nonearning assets, the central bank may reduce its losses, but at the same time, it may trigger undesirable changes in interest rates throughout the financial system, generate more inflation, or cause a depletion of foreign exchange reserves. Such developments are usually contrary to the objectives of economic policy, and their cost should be taken into account when formulating any policy to contain the losses of the central bank. This qualification notwithstanding, some of the factors that constrain the ability of the central bank to avert current losses are reviewed below.

Influencing the Spread: It is obvious that no central bank can exercise full control on the components of average spread, but it is fair to say that the central banks can exercise more control on the return on their assets than on the charges paid on their liabilities. The charges on foreign liabilities are determined by developments in foreign financial markets and by the rate of change in the exchange rate; the latter determines the variations in domestic currency value of these

liabilities. The charges on domestic liabilities are determined to a large extent in the absence of any coercion for holding financial instruments issued by the central bank-by public demand for such instruments. The central bank can usually manipulate the amount of such instruments in order to achieve the price it wants; however, the possibility becomes less probable as the size of its domestic debt grows.

The ability of the central bank to influence the return on its assets is, therefore, crucial to averting losses. The scope for such control is typically constrained by such factors as administrative restrictions on interest rates charged by the central bank. Such restrictions typically include an arbitrarily fixed discount rate, an obligation to provide subsidized loans to priority sectors, and low interest loans to the government. The latter is a common problem in many developing countries.

Control of the Base Money: The central bank's ability to vary the base money in order to prevent losses could be constrained by its monetary policy objectives. For example, following a period of rapid monetary expansion, it may become necessary to withdraw large amounts of liquidity from the system. In the process, the central bank's income may fall, while its expenditure could rise, possibly resulting in overall losses. The decline in the central bank's income would result from reduction in credit granted by the central bank, reflecting its contractionary stance. The increase in expenditure would reflect the rise in interest payments by the central bank, which would come about irrespective of whether absorption is carried out through the sale of the central bank's own financial instruments or through the sale of government securities.

The above discussion points to the fiscal nature of central bank losses and to the inseparability of the central bank's activities from budgetary operations. For example, the sale of treasury bills from the central bank's own portfolio decreases its earning assets and, therefore, its income. If new treasury bills are issued for this purpose, the proceeds of the sale have to be deposited in the government's account at the central bank for the contractionary impact to be realized. The central bank may have to pay interest on these deposits to neutralize the adverse impact of the sale of new treasury bills on budgetary interest costs, and, thereby, on the budgetary deficit. The central bank's expenditure would increase and adversely affect its financial results.

Sources of Nonearning Assets: Activities that increase the nonearning assets of the central bank contribute to current losses. The sources of nonearning assets are usually non-interest-bearing government loans and securities held by the central bank, and its so-called quasi-fiscal activities carried out at the request of the

government to support economic policies. These activities generally refer to central bank functions that are not directly related to the objective of safeguarding the value of the currency. They include such functions as domestic debt management, foreign reserves and exchange rate management, prudential supervision and deposit insurance, financial sector development, economic development, and improvement of income distribution. For example, the takeover of nonperforming loans of bankrupt institutions as part of the supervisory functions of the central bank (as was the case in Chile and Uruguay) could contribute to the growth of nonearning assets of the central bank.

Foreign Exchange Operations: The above discussion of cash flow losses ignores the impact of what may be called trading activities of the central bank. These operations, especially those conducted in foreign currencies, could be a source of substantial losses for the central bank. In many countries, exchange control regulations give the central bank a virtual monopoly on foreign exchange operations. Exporters are required to surrender their foreign exchange receipts to the central bank-which is in turn obliged to purchase them-and the public can only purchase foreign exchange from the central bank. This monopoly position can be potentially profitable for the central bank as it can purchase foreign exchange from exporters at lower prices than it sells to importers. Exchange rate fluctuations, however, can erode such benefits and make the task of managing the foreign reserve, of the country expensive for the central bank. The costs are higher if the central bank is also entrusted with the responsibility of defending the exchange rate. Many central banks also engage in forward or rations in foreign exchange and borrow abroad in support of this policy, further exposing themselves to risk of capital losses arising from exchange rate variations.

Capital Losses: Capital losses usually originate from such factors as the impact of changes in the exchange rate on the foreign assets and liabilities of the central bank; the effect of fluctuations in foreign exchange parities on a diversified portfolio of foreign assets and liabilities held by the central bank; granting of exchange rate guarantee that are realized; rescue of troubled institutions by the central bank involving the purchase of their bad assets at inflated prices; and, generally, granting of loans and advances that turn out to be uncollectible. The most common sources of such losses for central banks in developing countries relate to their role in foreign exchange management. In implementing this role, many central banks accumulate large foreign liabilities, making them vulnerable to exchange rate fluctuations; Jamaica, Argentina, and Turkey provide good examples of this problem. The Bank of Jamaica has accumulated substantial net foreign liabilities in order to support the Government's exchange rate policy.

These liabilities have made the Bank of Jamaica vulnerable to exchange rate movements, and the large devaluations of the Jamaican dollar during 1983-85 resulted in substantial losses for the bank. At the end of March 1989, the bank's nonearning assets, which represent the counterpart of its losses, amounted to 78 percent of its assets.

In Argentina, the foreign assets of the central bank are sold to the Government in exchange for a government security denominated in foreign currency. The operation does not affect the central bank's net foreign assets as they appear in the balance sheet but does increase nonearning assets and reduce the central bank's income. This is because no interest is usually paid by the Government on its securities held by the central bank, nor can these securities be redeemed in foreign currency when they mature. The potential loss is not reflected in the accounts of the central bank. A capital loss could also be associated with the exchange rate guarantees or insurance schemes offered by the central bank that fix the debt service in terms of domestic currency. In Turkey, for example, the central bank's foreign exchange insurance scheme led to substantial losses during 1984-88. Under the scheme, the central bank on-lent funds borrowed abroad to domestic borrowers at interest rates that were substantially below the average rate of depreciation of the Turkish lira, thereby providing a large subsidy to them.

Impact of Losses: The losses of the central bank are likely to have an impact on its prestige and authority and may also influence macroeconomic developments. The perception that it may not be financially sound, however simplistic the view, could erode its authority to supervise the financial system and limit its ability to use moral suasion as an instrument of policy. Its independence in managing its internal affairs may be diluted by, for example, pressures to make the central bank's administrative budget subject to approval by the government or the legislature, as a way to limit its losses. Except in such extreme cases, the erosion of the central bank's authority would be difficult to measure. The losses would have a more tangible impact on economic aggregates and on monetary management. The macroeconomic effects could come about both directly-through the effects of the losses on monetary expansion-and indirectly-through their impact on the efficiency of monetary management.

The expenditure of the central bank constitutes an injection of liquidity into the economy and its revenues, a withdrawal of liquidity. This statement holds for the central bank's operations in both domestic and foreign currency, but the impact of foreign currency operations on domestic liquidity may take time to materialize. Whenever foreign exchange resources used for a particular transaction are

obtained from, or flow to, the domestic economy, the impact of the transaction on domestic liquidity will occur immediately. If, however, the central bank uses foreign exchange resources from its own stock, or borrows abroad, for a transaction, the operation will not impact on domestic liquidity or be felt at the time of the transaction. Nevertheless, even in this case, a monetary impact can occur over time if the use of foreign exchange for that transaction creates or widens excess demand for foreign exchange, forcing the public to hold more reserve money than desired, thereby putting pressure on the exchange rate and interest rates.

From a macroeconomic point of view, losses of the central bank are a problem only if they endanger attainment of monetary targets. As the losses represent an injection of liquidity, the central bank may have to sterilize their impact partially or entirely in order to achieve money growth objectives. This would be the case if, in any period, losses lead to more rapid growth in the base money than desired, making it necessary for the central bank to issue interest-bearing liabilities, such as central bank certificates of deposit, to absorb the additional liquidity in the system. This type of sterilization embodies a risk that future losses may grow exponentially. The point is further examined in Appendix 1. This para could be written in a much better way. The vicious circle of rising losses and rising remunerated liabilities would be accompanied by increases in interest rates in each round. This would be necessary to reduce private demand and encourage the holding of certificates of deposit by the private sector. The prospect can be avoided as long as losses of the central bank are compensated by surpluses in other parts of the public sector. Surpluses may not be able to match the growing losses, however, and interest rates would have to rise, eventually leading to a reduction in profitability, investment, and growth.

Problems Posed for Monetary Management: Losses of the central bank, especially if they are large relative to the monetary base, could erode the ability of the central bank to conduct monetary management efficiently, further compounding the adverse macroeconomic effects mentioned above. The experience of countries such as Jamaica indicates that persistent losses of the central bank could lead to inconsistent use of monetary policy instruments. Growing losses create an environment in which the central bank would face the continuous task of sterilizing the monetary impact of its losses by absorbing liquidity from the financial institutions. To a large extent, this could be done through open market operations, but-as was the case in Jamaica-it may become necessary to reinforce the operations by raising the cost of access by financial institutions to the central bank's facilities. The Bank of Jamaica-which had

accumulated substantial domestic interest-bearing liabilities (certificates of deposit) in order to contain monetary growth-raised the penalty rate on its liquidity support facility to 60 percent a year in 1989 and currently penalizes redemption of securities at very high rates. These measures made the management of day-to-day fluctuations in liquidity more difficult for the banking system and impeded the development of the money market. They were not, however, adequate to reduce liquidity to the desired level so that the Bank of Jamaica had to continue issuance of its own certificates of deposit.

At the same time as the central bank's domestic remunerable liabilities grow, so do pressures for expansionary monetary policy as a way to reduce losses, which would conflict with the objective of reducing liquidity in the system. Through an expansionary policy, the central bank can increase the proportion of non-remunerated debt in its liabilities portfolio, thereby reducing its losses. Thus, central bank losses embody an inherent bias toward generating inflationary surprises. Central bank losses are likely to complicate monetary management whether the central bank relies on market-oriented indirect instruments of monetary control or on direct instruments, such as bank specific credit ceilings and administratively fixed interest rates. Under the indirect approach, as the losses lead to progressively higher interest rates and increase their volatility, interest rate management and financial programming become more complex. Interest rate volatility will also impede the development of the money market. These problems may eventually force the central bank to depart from its indirect approach, at the cost of distorting interest rates and impeding efficient resource allocation.

If the central bank relies primarily on direct instruments of monetary control, it can finance its losses through base money creation and then sterilize the impact by tightening the ceilings appropriately. The resulting excess reserve will lead to lower deposit rates, higher lending rates, or both, and pressures will intensify for evading the ceilings. To prevent this, the central bank may have to pay interest on the banking system deposits it holds, or increase its reserve requirements. The former will further increase its losses; the latter could have well-known undesirable effects on the financial system.

Possible Remedies: A conclusion of the discussion of the previous sections is that central bank losses are usually a substitute for larger fiscal deficits, and their impact is the same as that associated with monetization of budgetary deficits. Therefore, just as it would be necessary to contain the budget deficit to the levels that can be financed in a manner consistent with monetary targets, and just as this may require transfer of resources from the public to the government, the losses of

central bank may have to be compensated through transfers from the public to the central bank. Against this background, a two-step approach to resolving the problem of the losses should be adopted. The first step would be aimed at eliminating the existing nonearning assets and improperly priced off-balance sheet items. The second would consist of putting in place procedures to avert emergence of losses due to increases in remunerated liabilities and assumption of nonearning and high-risk assets and exposures.

Dealing with Existing Nonearning Assets: The nonearning assets already on the balance sheet of the central bank should be eliminated by a transfer of negotiable treasury bills and longer-term government securities to the central bank in the amount of the latter in the form of nonearning assets. It would be preferable if the transfer of these securities were intermediated through the private sector. This would ensure that the returns on these assets are market related and that the securities will be marketable—a characteristic that is important to preserve the integrity of the central bank's accounts. The mechanism could be for the government to raise cash by issuing securities through auctions or other appropriate selling techniques. The cash is then transferred to the central bank, and the latter will reduce its valuation account or other nonearning assets (or advances to the government, if past losses have been imputed to such an account) as well as its liabilities in the form of currency. The central bank can then sterilize the transaction by purchasing government securities on the secondary market as needed for monetary policy purposes.

In case this procedure cannot be implemented owing to the thinness of the secondary market for government securities relative to the size of the requisite transfer, negotiable securities should be transferred directly to the central bank, but the interest rates they carry should be market related. They can be set at a level consistent with the weighted average interest rate obtained from the latest treasury bill auction, if an auction mechanism is in effect. Otherwise, they should reflect international interest rates adjusted for expected rate of depreciation of domestic currency. Many central banking laws would have to be amended to specifically permit and call for such transfers. Only a few of the central banking laws examined envisaged the possibility that the reserves of the central bank would not be sufficient to cover its losses, thus requiring a transfer from the government. Among these, only two require cash payments by the government (Jamaica and Solomon Islands), which is the only procedure which would guarantee a reduction in nonearning assets (canceled against a reduction in currency liabilities).¹ Others make the government responsible for compensating the central bank without specifying the mechanism (Japan, Nepal, Oman, the United Arab Emirates), or, as

in Belize, require imputing the losses to a government advance account. In France, the law allows deduction of past central bank losses in calculating current year's net profits for distribution. In Somalia and Yemen, the law obliges the central bank to subsequently repay the amounts paid by the government to finance the losses. Neither of these operations would guarantee the elimination of nonearning assets.

Preventing Future Losses: The second step in addressing the problem of central bank losses consists of putting in place procedures that would help prevent the emergence of annual losses. A general principle in this regard is that, in its financial activities, the central bank should behave as much as possible like a well-functioning private institution. This does not necessarily mean that it should behave as a profit maximizing organization but that it should adequately cover its risks and adopt, as much as possible, a market-oriented approach to its operations.

Amalgamation of Central Bank Losses and Budgetary Deficits: The most important component of the above procedures is to rationalize the financial relationship between the government and the central bank. This can be done by recognizing the fiscal nature of central bank losses by amalgamating them with the outcome of the government budget, thereby explicitly requiring government policies to cover the losses. This procedure would impose a strong degree of budgetary discipline, as the government would have to choose an appropriate tax-spending mix to keep its debt on a non-explosive path. The separation of the government budget deficit from the central bank's profits and losses does not alter the fact that, as noted by Fry (1990, pp. 13-14), what government saves today as a result of the expenditure incurred by the central bank, it will lose in the future through reduced transfers of central bank profits to the treasury.

Amalgamation has a further benefit in that it may reduce the incentive for the central bank to occasionally use such monetary policy instruments as the reserve requirement, for the sole purpose of reducing losses. For example, the presence of losses on the accounts of the central bank may create the impression that the primary beneficiaries of the losses are the main customers of the central bank, that is, the financial institutions. This could increase pressure to solve the problem of losses by taxing the financial sector-through, for example, an increase in reserve requirements.

Apart from the likely disruption of monetary management, such a policy would have other disadvantages. First, a one-time increase in the reserve requirement is unlikely to be sufficient to avert future losses since the bulk of the expenditure reduction due to a higher reserve ratio only occurs once, at the time of the

increase. Further increases of similar proportions would be necessary in following years. Second, the cost of higher reserve requirements would place a heavy burden on intermediation, with detrimental consequences for savings mobilization, investment, and economic growth. Third, an increase in reserve requirements-which would allow the central bank to issue a larger volume of base money to support a given volume of deposits-for the sole purpose of reducing central bank losses, could disrupt monetary management. For the amalgamation of the losses into the budget to be more than a simple accounting arrangement, two additional procedures should be put in place. First, at the time of the preparation of the budget, central bank losses should be included in the projected deficit. The magnitude of the combined deficit has to be judged on the basis of the implication of its financing for overall credit expansion and, if relevant, for domestic and foreign debt-service payment. If the deficit is deemed to be too large on these grounds the tax-spending mix may have to be changed to reduce the deficit. Second, in case the configuration of the budget is such that the losses of the central bank are to be compensated by surpluses generated in other parts the public sector for the deficit target not to be exceeded, these surpluses should be deposited in the accounts of these agencies at the central bank as they are realized. In this way the requisite sterilization would occur and there would be no need for further measures by the central bank. If the surpluses are left elsewhere in the financial system, they would raise the banking system's liquidity and could lead to further un-programmed credit expansion.

Complementary Measures: Whether or not central bank losses are incorporated into the budgetary deficit, specific procedures need to be put in place to rationalize the financial relationship of the government with the central bank. These procedures will be needed even more if amalgamation is not carried out. As a minimum, they should include the following. *First*, although in practice it would make little difference whether the government receives low interest loans from the central bank or a share of its profits, it would be preferable for the central bank to charge market-related interest on its loans to the government. This would be beneficial from the point of view of maintaining the transparency and integrity of central bank accounts and in order to be able to ensure that the subsidy involved in central bank lending to the government would not result in overall losses for the central bank. The central bank should also rely on the securities issued by the government in conducting open market operations. This would help incorporate the cost of monetary policy implementation directly into the fiscal budget. *Second*, in general, the central bank should not be a conduit for channeling financial resources to the priority sectors below market prices. Such subsidization is best done through

the budget, as in this way the cost of subsidies become transparent and their growth can be monitored clearly. If the central bank has to carry out such activities, it could impute the risk and the subsidy involved in its quasi-fiscal activities to its prudential reserves, thereby reducing its transfers to the government. The proper measure of these costs is the amount that would have to be paid to the private sector to carry out the function. This will help the central bank to maintain its financial integrity. In some countries, like Brazil, the government does make a provision for subsidies provided indirectly through the central bank. Typically, however, the amounts set aside have been inadequate. *Third*, the central bank should not borrow abroad except for short-term balance of payments purposes, and the government should assume the entire exchange rate risk involved in all foreign borrowing by the central bank. Central banks borrow abroad practically always in fulfillment of their role to preserve the value of the currency. In this sense, they are incurring obligations in support of government policy. Even short-term borrowing for balance of payments purposes is usually undertaken in support of a policy of exchange rate stabilization; an objective that is imposed on the central bank by government policy. In these cases, clearly, the government should bear any exchange risks involved. The obligation of the government in this regard does not derive from the fact that there may be a subsidy involved in 'on-lending' of foreign resources to the government by the central bank. If the central bank on-lends the funds borrowed abroad to the government at a market rate, no subsidy is involved. The government should still be responsible, however, for any losses suffered by the central bank as a result of borrowing abroad. Such a loss would come about if actual devaluation exceeds expectations. This is because, in that case, the premium for devaluation expectations incorporated in the interest rate paid by the government on its credit from the central bank would not be sufficient to cover the entire cost to the central bank. A foreign exchange risk is associated not only with transactions in foreign exchange, but with all the lending activities of the central bank. This is because, at any given level of demand for cash balances, any credit extended by the central bank will eventually create an equivalent demand for foreign exchange that-at an unchanged supply of foreign exchange-will put pressure on the exchange rate. If the exchange rate is then adjusted, the risk materializes. If it is not allowed to adjust, the additional demand will lead to an equivalent decline in the country's net international reserves, which in many countries are uniquely held by the central bank. Thus, a foreign exchange cost is involved in both cases.

The central bank should be allowed to impute such risks-which are inherent in all its lending operations-to the interest rates it charges. Even if allowed to do so, however, the central bank's interest rate policy may at times dictate otherwise. For

example, if monetary management is based on interest rate targeting, it may not be possible for the central bank to adjust the discount rate in order to take account of all the risks involved in its lending operations. In these circumstances, the likelihood of registering a loss increases, and the central bank should be compensated if a loss is actually realized.

Fourth, the central bank should set aside reserves against potential losses. Some central bank acts give the central bank discretion to set aside profits for this purpose. Thus the onus is placed on central bank management to have the foresight to provide adequately for eventual losses. Some central bank laws allow a (reserve) valuation account on the liabilities side of the balance sheet as a reserve valuation losses arising from changes in the exchange rate. This account reflects net gains from valuation changes that are not distributed but set aside as reserve against future losses from exchange rate changes. When a valuation loss due to a change in the exchange rate occurs, the amount of the loss is deducted from the balance of the valuation account. In case the balance of this account is insufficient to cover the loss, these laws require a transfer of government securities to the central bank in the amount of the deficiency. In most cases, however, the law specifies that these securities should not be negotiable nor bear interest. Therefore, the transfer of these securities does not reduce the nonearning assets of the central bank, nor does it make it more probable that funds would be available when the foreign liability becomes payable.

An alternative but similar approach is to credit the gains from valuation into an interest-bearing blocked government account at the central bank and settle valuation losses by debiting this account. In case the credit balance is not sufficient to cover the losses, the government could transfer interest-bearing securities to the central bank. This would allow for a prudent distribution of the gains from valuation in the form of interest paid to the treasury and prevent the creation of nonearning assets. Reserves are also necessary against contingent liabilities, such as foreign exchange guarantees. Under conventional accounting procedures no such provisions are made. There are differing points of view regarding the soundness of this practice. Supporters argue that provisions will reduce the net return on assets, while in fact the guarantee may never be realized. They point to the difficulty of deciding the amount of such provisions that have to be based on an evaluation of future gains and losses from exchange changes. Critics point out, however, that this argument can apply equally to any kind of provisioning against future risk. Moreover, central banks do not usually charge an adequate premium or fee to cover the actuarial value of their liabilities should the guarantee become due. Thus, if the guarantee becomes binding, the central bank will incur an additional expense.

Timing of Transfers to the Central Bank: Should the central bank be compensated for losses at the time of their accrual (or at the time of a valuation change) or when the loss is realized? Certainly, earlier payment will help assure the transparency and integrity of the central bank balance sheet-which is a public document. In general, however, the timing of compensation should be determined in a manner consistent with the budgetary cash flow requirements.

Compensation of the losses at the time of accrual will help soften the impact of the transfer on the budget. To see this, assume that the payment is in the form of an interest-bearing security. If the transfer of the security takes place at the time of accrual of the loss, its amount will be equal to the size of the loss. The government will have to pay interest on the security in regular intervals in an amount of, say, A , until the security matures. This additional interest earned by the central bank in the intervening period will be forgone if the transfer takes place at the time of the realization of the loss. The amount of the transfer at the time of realization will then have to be larger by a multiple of A . Thus, while the government will pay no interest in the period between the accrual and realization, a larger interest payment than A will be required from that point onward, reflecting the larger transfer that should be made. In order to further ease budgetary cash flow problems, the transfer of central bank profits to the government could also be made more frequently than on an annual basis; however, it would also be most prudent to transfer only realized profits. Regular preparation of profit-and-loss accounts on a cash basis to complement the usual system of accrual accounting would be needed. This would help prevent an overestimation of the profits to be transferred to the treasury, which may raise government expenditure and be expansionary.

Summary: A central bank is supposed to make profits because of the seigniorage involved in currency issue. However, many central banks make losses because the involved in trying to preserve the value of the currency, and in supporting government policy through quasi-fiscal activities, outweigh seigniorage.

This paper has argued that central bank losses cannot be ignored: They can undermine monetary management, slow down financial market development, and set back the attainment of such economic objectives as price stability and economic growth. In these regards, the impact of central bank losses is similar to that of the monetization of growing fiscal deficits. Therefore, their fiscal nature should be recognized and they should be incorporated into the government budget either directly, or-if this is not possible-by effectively assuring such an outcome through appropriate reforms of central banking laws. At the same time, and especially if amalgamation is not possible, steps should be taken to remove any

non earning assets from the books of the central bank through transfer of earning assets from the government, and to rationalize the financial relationship between the government and the central bank. The latter would imply allowing the central bank to charge market-related interest rates on all its loans, including those to the government. This would mean that it should take the risk of exchange rate changes into account in setting its lending rates, to the extent allowed by monetary policy considerations. It should also rely on securities issued by the government in conducting monetary policy.

Central Bank Losses and Economic Convergence: Under *standard* circumstances a central bank should operate with profit, numerous central banks have faced substantial losses that have led over time to an accumulation of negative capital. This has naturally raised the issue of whether a central bank can successfully conduct its monetary policy even with a negative level of its own capital. The aim of this section is to provide a practical framework for assessing the ability of a central bank to keep its balance sheet sustainable without having to default on its policy objectives given the current level of its own capital and the economic prospects. It builds on Holub (2001b), Bindseil et al. (2004), and Ize (2005). While the basic rules that govern central bank financing are derived in those articles, the present paper avoids some simplifications of the central bank's balance sheet and the short cuts used in the macroeconomic context that may constrain the use of those earlier papers for practical analyses of a central bank's own capital. In particular, the present paper discusses in more detail the consequences of economic convergence for the evolution of the central bank's balance sheet. Economic convergence typically includes some combination of GDP catch-up from an initially low level along with price level convergence, which means real exchange rate appreciation a high – but gradually decreasing – risk premium on domestic assets, some progress with disinflation, relatively fast growth of currency in circulation supported by fast GDP growth, and increasing monetization of the economy. All these factors have implications for the central bank's financial performance, but the present paper stresses above all the important role played by the risk premium and equilibrium real exchange rate appreciation. It also provides both a closed-form comparative-static analysis and numerical solutions of the future evolution of the central bank's own capital, exploiting some complementarities of the two approaches.

The economic literature has long discussed the sources of central bank losses and their possible remedies. While the quasi-fiscal origins of the losses and the potential need for central bank re-capitalization were explored by Fry (1993), Mackenzie and Stella (1996), and Dalton and Dziobek (1999), there is also a

literature which focuses on losses related to high foreign exchange reserves. It includes Holub (2001a) and Higgins and Klitgaard (2004). Interestingly, Hawkins (2003) mentioned sterilized foreign exchange interventions as a special case of loss-making quasi-fiscal activities. Exchange rate losses were also discussed by Stella and Lönnberg (2008) and Stella (2008).

In dealing with the formal link between the central bank's balance sheet and its macroeconomic context it adds to a stream of the literature represented mainly by Holub (2001b), Bindseil et al. (2004), and Ize (2005). Bindseil et al. (2004) introduced a theoretically useful formal framework consisting in a simplified central bank balance sheet and a simple macroeconomic model based on the Wicksellian relationship between inflation and interest rates, and provided simulations of central bank capital. However, some of their model assumptions were too strong from a practical perspective. Especially for open economies, a non-zero risk premium or systematic changes in the real exchange rate may play a significant role, but the model of Bindseil et al. (2004) does not deal explicitly with those phenomena. Holub (2001b) and Ize (2005) in their analyses give a prominent role to the risk premium as a key determinant of central bank profits. Both papers provide an analytical exposition of central bank capital and its convergence to steady-state values. In doing so, they highlight the importance of the difference between the domestic interest rate and the growth rate of currency in circulation, as well as the level of central bank profits with zero own capital ("core profits" in the terminology of Ize, 2005). However, significant simplifications are still present in these models. First, they do not explicitly deal with the real exchange rate trend, which is a salient feature of many converging economies. On the contrary, Ize (2005) assumes that in the long run the relative version of purchasing power parity holds and, consequently, the risk premium is calculated as the difference between domestic and foreign real interest rates. Second, the possibility that the real growth of currency holdings exceeds the real interest rate is excluded in Ize (2005). Nevertheless, in a converging economy, appreciation of the real exchange rate may cause the real interest rate to fall below the foreign real interest rate, but the monetization of the economy may be rising at the same time.

Besides modeling issues, the emergence of the losses and negative own capital of some central banks has stimulated a debate of what policy implications this may have. Already, Fry (2003) has articulated the possibility of inflation control being abandoned in reaction to the worsening of a central bank's balance sheet. More recent contributions dealing with the link between sustainability of the central bank's financial situation and its ability to perform its policy goals include Holub

(2001b), Sims (2003), Bindseil et al. (2004), Ize (2005), Stella (2005), and Stella and Lönnberg (2008). Bindseil et al. (2004) focused on credibility issues and argued that a loss making central bank is simply not believed to ignore its balance sheet while conducting monetary policy. Moreover, they raised the possibility that after a period of protracted losses, the public may begin to worry that the central bank will lose its right to issue legal tender. Stella and Lönnberg (2008) coined the term “policy insolvency” to describe situations in which a central bank’s policy decisions are affected by its financial condition. Ize (2005) develops the concept of “core capital,” i.e., the minimum capital needed by a central bank to ensure the credibility of its inflation target. Core capital is a function of the central bank’s operating expenditures and the carrying cost of its international reserves. In addition to core capital, a policy variable called “core inflation” is introduced. It links core capital and the central bank’s credibility. “Core inflation” may be adjusted to keep the central bank’s capital in positive values.

However, Ize (2005) does not discuss the possibility of changes in foreign exchange reserves, even though their ratio to currency in circulation is in fact treated as another potential policy variable that does not endogenously evolve. However, the inflation risk might be overemphasized by the model of Bindseil et al. (2004) and Ize (2005). They assume stability of the public’s demand for currency, but higher inflation induced by the central bank to improve its finances would lead to currency substitution and thus limit the central bank’s incentive to resort to such a solution.

Building mainly on Holub (2001b), Bindseil et al. (2004), and Ize (2005), the discussion can be refined in several aspects. First, we introduce a coherent open-economy framework and economic convergence issues into the analysis. *First*: these bring the links between the real exchange rate, domestic and foreign real interest rates, and the risk premium into the game. *Second*, we work explicitly with monetary income, which allows for a structured discussion of factors influencing the central bank’s balance sheet. *Third*, we add the sensitivity of money demand to inflation to the analysis. Fourth, we relax the assumption of a strictly exogenous, policy-determined ratio of foreign exchange reserves to currency in circulation. This is done by splitting the foreign exchange reserves into autonomous and discretionary parts. The autonomous part depends on the relationship between the return on the reserves and the growth of currency in circulation, whereas the discretionary part depends on the central bank’s decision to make interventions in the foreign exchange market. This split facilitates modeling of the foreign exchange reserves ratio as another policy variable in addition to “core inflation,” by means of which the central bank may adjust its

profitability. Moreover, the autonomous development of the reserves ratio allows us to discuss if such an adjustment is achievable over time in a passive manner, or if it requires some active balance-sheet restructuring actions by the central bank. We intend to provide a realistic and pragmatic approach that can be used for analyses and dynamic simulations of the central bank balance sheet given its current structure and a reasonably reliable long-term economic outlook. Such simulations should show whether active adjustment of the balance-sheet structure is necessary. In effect, they may help the central bank to adopt a proper communication strategy and thus deal with the credibility challenges arising from its negative capital.

Issues Impacting Central Bank Reporting: Central governments, having delegated the operation of potentially profitable monopoly rights to the central bank are legitimately looking for their share of profits arising from the exercise of these functions. However, this expectation is complicated by problems arising from defining what constitutes profit of these monopoly activities, in what form these profits exist and the level of cross subsidization to cover loss making central bank activities. While few central banks explicitly set out to report income by function the cross subsidization that occurs between functions has an impact on the bank's ability to pay dividends.

The old *Bank of England model maintained* separate balance sheets for the issue department in an attempt to demonstrate that assets of appropriate quality backed the currency on issue. Such separations allowed the assignment of specific income streams to functions but this practice has declined under modern accounting and reporting practices. Hence, there is generally not a clear relationship presented between the earnings from monopoly functions and the profit available for dividends, which can produce tensions between central banks and their governments. Without a profit maximizing objective, central banks achieve accountability through mechanisms such as annual reports or appearing before legislative or executive committees of the government, which have traditionally discounted the need for detailed financial reporting in favor of narratives covering performance in achieving policy objectives. Historically, central bank financial reporting adapted a multiplicity of frameworks and modified accounting standards. Financial statements tended to be briefer and less transparent than their commercial counterparts, with a presumption of the need for secrecy as a key to policy effectiveness resulting in minimal disclosures. In many cases, legislation defined the reporting mechanism and a formulaic prescription for profit and dividend calculations, an arrangement still extant in many laws. Many central banks adopted conservative valuation criteria enabling the creation of significant

hidden reserves, sufficient to fund all but the most critical losses. If recognized at all, banks took unrealized revaluations directly to reserves so to avoid inclusion in any measure of profit or dividend calculation. Financial sector crisis costs or exchange rate losses were covered by banks' official reserves, hidden reserves and finally by the issue of recapitalization bonds. Alternatively, banks capitalized them, reporting them as intangible assets, which they would amortize at a future date as a return to profitability allowed.

The move to greater central bank independence produced the need for greater accountability, with a demand for improved financial statement transparency. For example, Chairman Alan Greenspan of the Federal Reserve Board, at the Tercentenary Symposium of the Bank of England in 1994, reflected on the case for transparency for central banks in the following insightful manner:

*".... if we are going to have independent central banks then implicit in that independence is accountability. You cannot in a democratic society have an institution which is fully or partly dissociated from the electoral process and which has powers that central banks inherently have. So the question really amounts to how does one position the central bank with respect to the issue of disclosure and accountability which are related questions. The position that we [the Federal Reserve] take is that the burden of proof is against the central bank: that is, we have to demonstrate that either delayed disclosure or non-disclosure is a policy which is required for us to implement our statutory goals. We have struggled with this, and have concluded that we should make available to the electorate what it is we think, why we are doing what we are doing and in a general way under what conditions we would behave differently." (pp. 252-253, Forest Capie, Charles Goodhart, Stanley Fischer and Norbert Schnadt, *The Future of Central Banking*, Cambridge University Press, 1994).*

Supporting this was the international recognition of the value of improved transparency in enhancing both policy efficacy¹⁰ and financial sector stability. The Fund's own Transparency Code advises central banks to prepare audited financial statements under internationally recognized frameworks.

Section III: Accounting for Central Bank Profits

In response to these developments, central banks began adopting international standards applicable to commercial financial entities. The accountability, credibility and transparency arguments in favor of reporting in accordance with such standards means central banks face decreasing scope to avoid compliance. This is not necessarily a bad thing and the paper is not advocating the creation of specific central bank accounting standards. Amongst those who report publicly, the notable exception is the ECB who has developed its own set of standards for the European System of Central Banks (ESCB). Even here, the divergence from IAS is limited, with the main difference being the ESCB's deferral of recognition of valuation changes until their realization.

While the freedom to develop their own central bank reporting standards is possible for an organization of the ECB's international standing, it is not one generally available to the rest of the world's central banks. Nor is it necessarily appropriate. While central bank functions differ from those of other banks, and while their objectives are policy rather than profit based, they remain exposed to the same economic and financial realities that drive the changes in asset and liability values for commercial entities. As such, it seems appropriate that central banks should report under the same framework as other commercial entities. This means that the measure of profit produced by this framework may diverge from the historic assumptions of legislators and politicians, as profit now includes elements of capital maintenance as well as the operational proceeds from central bank activities.

The focus of international standards on recognition of the 'economic value' rather than the 'cash flow' effect of an entity's operations produced significant changes in the calculation and composition of central bank profit. Financial reporting now focuses on changes in the central banks' economic resources, making profit a measure of the changes in economic value occurring between reporting dates rather than just a measure of operational earnings. This complexity in profit composition can result in a significant divergence between what banks recognize as profit and what is available for distribution as dividends.

Accrual accounting: The first significant accounting policy change affecting central banks was the move from cash to an accrual basis of accounting. Accrual accounting recognizes income and expenses at the time that the entity legally or technically incurs them, not at the time that there is an exchange of resources. The most obvious consequence of this is a better matching of income and related expenses to produce a more accurate measure of net income. In normal

circumstances, this tends to produce a smoothing of earnings between periods but can produce some subsidiary issues. An example of such is the recognition of income on non performing assets, particularly government debt. In some situations, central banks accrued interest on government debt while never receiving any real resources to match the accrual. This enabled the central bank to report an accounting profit that it distributed to the government as dividends without, real assets to back them. The resulting increase in government liquidity had monetary consequences that conflicted with central bank policy objectives. Fortunately, accounting standards offer mechanisms to recognize such impaired performance and enables the bank to stop accruing income that is not received, though such a decision is not without political difficulties in the situation of government debt.

Adoption of fair value: Perhaps of greater significance for central banks was the move of international standards to adopt fair value as a measurement basis for financial instruments in place of conservative asset valuation standards, consistent with the trend towards reporting economic substance. Historically, central banks were able to report assets and liabilities at cost price both in terms of the price of the asset and, in the case of foreign assets and liabilities, the exchange rate of the transaction. This allowed deferring recognition of any changes in value and the associated profits and losses until disposal of the asset or liability. The move to fair value means net profit now contains greater elements of recognized but unrealized profits. Initially, banks could address the requirement for fair value disclosure through the notes to the financial statements, leaving historic values in the financial statements. Alternatively, banks bypassed the income statement and took the valuation changes directly to equity in the form of revaluation reserves. In many cases, reserves accumulated both realized and unrealized revaluation gains creating a significant buffer to capital losses.

Increasingly, accounting standards proscribed such treatment. In 1993 the revised IAS 21 *The Effect of Changes in Foreign Exchange Rates* required all foreign exchange gains and losses, realized and unrealized, to be recognized in the income statement. In 2001, the new IAS 39 *Financial Instruments: Recognition and Measurement* introduced a much broader use of fair value for assets and liabilities, with a stricter requirement for all related gains and losses, realized and unrealized, to be reported in the income statement. While the ability to report using historic cost and to take revaluations directly to equity remains the opportunity to avoid reporting unrealized changes in asset and liability values in the income statement is declining. The ability to report some financial assets at “cost” is very important for central banks in certain circumstances. In particular, those central banks who

received undated, zero coupon, government bonds as part of recapitalization for losses would find that the adoption of fair value for these instruments would produce very low values that would trigger another round of bond issues from the government, which when fair valued would generate continuing reissues in perpetuity. Under IAS 39, entities may report loans and receivables, and assets classified as held to maturity at amortized cost. Residual financial assets classed as available for sale, while required to be valued at fair value may have unrealized valuation elements reported directly in revaluation reserves in equity.

For central banks, the effect has been to increase the potential volatility of reported earnings, particularly in situations of material mismatches in balance sheet structure, a common feature of central banks given their specific responsibilities for foreign reserves management. The result can be a significant timing mismatch between the recognition and realization of central bank profits, raising the risk of a reversal of the recognition before realization occurs. This risk cautions against the distribution of unrealized profits as dividends and advises the creation of appropriate buffers to enable the central bank to meet future losses. Complicating the issue is the evolution of international standards to ensure that the income statement reports only the changes in value arising from activities and events between the two most recent reporting periods. Proposed changes to IAS 8 *Net Profit or Loss for the Period, Fundamental Errors and Changes in Accounting Policies* will require that the effects of the prior periods arising from fundamental errors or from changes in accounting policies can no longer be included in current period profit and loss but must be recognized directly in the opening balance of retained earnings. In situations where these produce a gain for the entity, this is not a material issue, but in a loss situation this can result in an erosion of a bank's capital. Conceptually, a central bank faces a situation where it may report a current period profit and pay out dividends whilst simultaneously facing a significant reduction in equity as a result of adjustments arising from fundamental errors or changes in accounting policies. The challenge facing central banks is to recognize and report income in a transparent and credible manner so that their financial statements provide measures for both their stewardship of public resources and functional efficiency, while at the same time dividing profit into dividend and capital maintenance components.

Dividend Policies for Central Banks: While accounting standards have much to say about the calculation of net profit, they specifically disassociate themselves from issues of dividend calculation. An International Accounting Standards Committee discussion paper on Accounting for Financial Assets and Liabilities noted: *“that it is fundamental that an enterprise's income distribution/dividend policy....should be distinguished from income measurement. It is not appropriate,*

for example,.. to delay income recognition until cash is received, in order to reduce income to an amount that directors believe may be prudently distributed to owners.”

As dividends are a residual element, after ensuring that appropriate capital and reserves exist to cover a bank's risks, any discussion on dividend determination needs to accept, as a minimum, a non negative capital position, over time, for central banks. A failure to accept this negates many concerns on dividend policy as it becomes perfectly acceptable for banks to accumulate negative equity through unrestricted dividend distribution or unremunerated operating losses. Hence, dividend policy should focus on ensuring the central bank maintains sufficient capital to maintain its non negative capital position.

While the divergence between profits and distributable dividends is a feature common to commercial entities, the unique nature of central bank functions means that this divergence between recognized and realized profits may be more material. Much of the unrealized profit may not be backed by the liquid assets required to enable its distribution without eroding the bank's liquidity and solvency, or generating adverse monetary policy benefits.

To maintain central bank capital adequacy, it is important for dividend policies to protect central bank capital by ensuring dividends are backed by liquid assets. Simultaneously, it is important for central banks to ensure that their dividend policies do not conflict with monetary policy objectives or exacerbate the business cycle. Complications arise for those central banks obliged to pay income tax on their earnings, a practice not recommended by the IMF, and by the need to pay dividends by installment, in anticipation of final earnings. A range of exogenous factors determines the effects on central bank capital of these practices and while it is not possible to say categorically that they are bad, neither represents preferred practice, especially for transition and emerging economies.

Protecting unrealized elements of profit: Concerns for monetary policy neutrality and capital adequacy creates an approach which excludes all unrealized elements from the calculation of dividends. The concerns have two causes. The bank is concerned that it will have insufficient liquid assets to cover the unrealized distributions, which will result in a monetization of the dividends. Also, there is a concern that the unrealized profits will reverse with an interest rate or exchange rate correction, nullifying distributed gains and adversely impacting capital. To exclude unrealized elements the bank would start with the *Net cash flows from operations* in the Statement of Cash flows as the closest proxy to realized earnings and proceed to determination of dividend distribution from there. This would

exclude all unrealized elements regardless of source, including accruals, price and exchange rate movements.

Complicating the issue is the desire to avoid the accumulation of negative reserves through the retention of unrealized losses. Banks avoid this by netting any unrealized losses, for which no offsetting reserves exist, against realized profits refining the dividend base to be realized profits net of unrealized losses in excess of unrealized reserves. Capital adequacy concerns drive this asymmetry of treatment of unrealized gains and losses. As the foreign exchange revaluation gains and losses are usually the material unrealized elements, an alternative approach is to transfer just the unrealized foreign exchange revaluation gains to a revaluation reserve as a first step to determining dividends. While unrealized domestic price revaluations of financial and real assets as well as unrealized profit elements of accruals contribute to the pool, these items are not usually material and so are usually ignored as revaluation reversals are not sufficient to threaten capital and the bank usually retains sufficient liquid assets to cover any distributions.

Ensuring sufficient reserves to maintain capital: Even allowing for the creation of full reserves for all unrealized revaluation gains, a central bank may still face issues of having sufficient reserves to maintain capital. The paper has already described situations where fundamental errors and changes in accounting policy may result in charges against equity. Other risks exist. Properly configured revaluation reserves collect only unrealized gains. In times of crisis, exchange rate movements or policy costs of maintaining exchange rate positions may generate both realized and unrealized operating losses in excess of these reserves. The accounting for this is to recognize all the losses in the income statement, but then offset them against appropriate revaluation reserves until the reserves reach a zero balance. Before determining dividends, the bank charges any outstanding unrealized losses against income. These losses may be so great as to produce an overall net loss, which will need to be covered by bank capital, beyond any revaluation reserves.

International standards only allow for the recognition of losses that have occurred. This is particularly relevant for loans or liquidity provided to the financial sector or under quasi-fiscal activities. When calculating profits, standards allow the creation of provisions for recognized but yet to be realized losses. These can be charged against income and reduce net profit. What standards do not allow is the recognition of losses that may occur in the future but which are still uncertain or unquantifiable. As experience demonstrates, for central banks these losses can be

sudden and very large making it prudent for central banks to create an appropriate level of reserves to cover these events. These reserves need to come from realized profits, as unrealized revaluation reserves exist to cover losses from other price movements. As discussed, the determination of an appropriate level of reserves is problematic and capital adequacy policy for central banks suggests that we are still in the early days of developing appropriate mechanisms for objective determination of such reserves.

Avoiding policy conflicts in dividend distributions: For central banks, the issue of realized and unrealized profits has important monetary policy implications. Realization of central bank profits represents a transfer of real resources from the economy to the central bank resulting in a contraction in the money base. Unrealized profits are still awaiting this transfer of resources so their distribution as dividends provides the government with an expansion of resources for which no corresponding contraction has occurred. This produces an expansionary outcome, which may conflict with the central banks monetary policy objectives. Economically, realized profits represent the transfer of real resources and are a legitimate component of fiscal revenues. The distribution of unrealized profits is equivalent to unsterilized lending to government, something often prohibited in central bank legislation. Extending this argument to other elements of capital, it is possible to view any central bank negative capital as unsterilized lending to government thereby reinforcing the argument of the desirability for central banks to maintain non negative equity.

Another potential conflict exists when dividend policy is pro cyclical rather than counter cyclical. In a strict simple rules based policy, a formula prescribes dividends. Using such an approach to ensure sufficient reserves to cover losses, in times of economic crisis the central bank will increase allocations of profits to reserves to cover the expected increase in losses. Given that the bank will apply this approach to a profit already reduced by increased loan loss recognition, the result is reduced dividends to government at a time when the bank is probably loosening monetary policy. The reduction in government liquidity potentially adds to the economic contraction that monetary policy is seeking to avoid. The converse is true in boom conditions. Hence, while it is appropriate to have a risk based capital adequacy framework, there is some merit in allowing central banks a contingent role and some discretion to accumulate reserves on a counter cyclical basis, providing minimum risks are covered. Given that no one has perfect foresight, it is necessary to include an accountability mechanism in any discretionary dividend scheme.

Timing of dividends: As banks pay dividends from realized profits calculated at the end of the financial year, it is not advisable to require the payment of interim dividends based on this anticipated result during the year as such practices risk an erosion of capital through over distribution of profits. Even a policy of basing interim dividends on realized profits contains flaws as end of year adjustments may produce unrealized losses that erode realized profits. Hence, interim dividends only become defensible where the account system produces full accruals and valuation adjustments on a monthly basis, an unusual situation.

Treatment of net losses: In the event of operations producing net losses, the bank needs to cover these from its reserves and retained earnings. Generally, banks do not consider dividends in a loss situation, as the dividend formula is a function of the level of profit. The bank allocates components of losses across the appropriate reserves and retained earnings with any excess resulting in a debit balance in the retained earnings account. In the situation of losses resulting in negative capital, the bank will need to look to the recapitalization, or loss covering, arrangements in its law.

Balancing Central Bank and Government Needs for Profits: Having defined the pool of distributable income as realized profits net of unrealized losses for which no offsetting reserves exist, the task is to determine the split between creating reserves and distributing dividends. As a residual element, dividends are what remain after meeting appropriate allocations to reserves. A draft Fund paper has summarized the methods for determining profit distribution into nine categories of: No target, Fixed nominal target, Fixed real target, capital indexed Residual profit fund, Proportion of total assets target, Proportion of selected assets target, Proportion of liabilities target, Proportion of external indicators “Value-at-risk” indicators. A further dividend distribution arrangement, not found in central bank laws, is the distribution as a preordained amount stipulated in the fiscal budget overriding both the provisions of the central bank law or the likely actual earnings of the bank. While nominally described as dividends, such distributions have the substantive characteristics of interest free credit to government or capital repatriation, especially in the situation where they exceed realized profits. Most of the distribution mechanisms specified in central bank law recognize the need for the banks to maintain a capital buffer to cover future shocks.

The formulaic nature of these profits and the lack of mature models for calculating the appropriate level of capital and reserves are to be maintained by central banks. While there is no perfect answer in determining overall capital levels, it is

important for central banks to realize that governments have a legitimate claim to excess central bank profits. Realized profits are a valuable fiscal resource and reduce government borrowing costs. Excess capital at the bank carries an opportunity cost for the government and is fiscally inefficient. Examples exist of central banks accumulating inappropriately large levels of reserves, which while insulating the central banks imposes fiscal costs on the government.

Resulting conflicts between the government and the central bank are as threatening to central bank independence as capital deficiency situations. The ultimate objective is for a central bank to be able to build a model to justify its overall level of capital. The basis of this must be a match between its assigned functions and the level of financial risks each carries. As risk is dynamic, it is reasonable to expect the level of required capital to change in response to changes in central bank functions, and the state of the economy and financial system. Managing this fluctuation should be through a counter cyclical variation of reserve levels, rather than frequent alterations in the level of authorized capital that require amendment to the central bank law.

Advocating discretion for the central bank to adjust the level of its overall capital in response to changes in risk exposures raises some interesting challenges for law makers. Given the risk averse nature of most central bank boards and governors, there is likely to be an asymmetry in the willingness to raise and lower capital, an asymmetry reinforced by bureaucratic incentives to enhance the central bank's prestige and reputation through expanding the balance sheet. This results in a bias towards capital accretion, which can result in fiscally sub optimal levels of central bank capital. Hence, in giving the central bank the important right to retain profits to adjust capital on a risk weighted basis the law should provide an appropriate accountability mechanism that requires the bank, through either the board or the governor, to justify its capital adjustment decisions. Various mechanisms exist for this and include an ex-ante agreement of an appropriate capital adequacy model, a requirement for a publication of the capital adequacy framework as part of the annual report or appearance before a government committee to justify reserves allocation decisions. Several important points attach to this position.

The first is the need for central banks to justify the level of required capital. Adoption of commercial banks' capital adequacy models will not be appropriate as central banks face a significantly different risk profile than their commercial counterparts. However, a bank may start with the commercial bank framework and adjust it for its own risk profile. For most banks, risk models will be approximate rather than definitive, which will leave scopes for argument around the margin as to the quantum of proposed provisions in a review process.

The second issue is to ensure that any dividend-capital retention policy is consistent with the overall model of central bank independence and accountability. A review process that can prevent effective management of capital adequacy offers an Achilles' heel to limit bank independence by enabling a capital dilution. The need to integrate capital adequacy and dividend policy with overall independence and accountability frameworks precludes the ability to define a specific set of rules for any review of central banks' capital adequacy. However, the principle remains for an appropriate risk based capital adequacy model that will recognize both the various components of central bank profit as measured under IAS and the legitimate claims of shareholders on central bank dividends.

Examples of profit recognition and dividend policy clauses in central bank laws

This section discusses examples of current central bank laws that illustrate treatment of the issues discussed.

Measuring Profits

Nepal: Law on Nepal Rastra Bank adopted March 2002

Article 90: The Bank shall maintain at all times accounts and records adequate to reflect its operations and financial condition in accordance with International Accounting Standards.

Commentary: This plain language example demonstrates how the specification of an appropriate accounting framework can provide a dynamic mechanism for defining what shall be included when measuring profit. Adopting a widely recognized framework aids the transparency of central bank disclosures and provides the flexibility to adapt to evolution in accounting standards. The ability to define an independent accounting framework rests on the assumption that central banks' profits are fundamentally the same as those of other entities. While this is not universally accepted, this paper maintains that the differences are less in the measures of profits than in the definition of dividends. Offsetting any difficulties in central bank profit definition supposedly caused by the adoption of international standards is the material increase in transparency and credibility that the adoption of such standards provides central bank financial statements. However as discussed, it does create the need for a more thorough definition of the process of calculating dividends and transfers to reserves. A central bank requires an alternative definition of profit measurement in the situation where it is decided that national standards or IAS do not provide an appropriate measure. The desire to abandon an internationally recognized reporting framework needs to be balanced against the credibility a central bank gains from adopting such a framework.

Excluding Unrealized gains Australia: Reserve Bank Act, Act No. 4 of 1959, last amended 2000. Part IV—Central banking

30 Profits: (2) If the net profit of the Bank for a year is calculated on a basis that requires the inclusion of unrealized gains on assets during the year, the amount to which subsection (1) applies is to be worked out as follows: (a) deduct from the net profit an amount equal to the total of all amounts of unrealized gains included in the net profit; and (b) if an asset in respect of which unrealized gains were included in the net profit for a previous year or years is realized during the year—add to the amount remaining after applying paragraph (a) the total amount of those unrealized gains.

Commentary: This is one of the few examples of a central bank law that specifically requires the exclusion of unrealized gains from profits before calculating dividends. There are many examples of the law requiring the exclusion of unrealized elements from the calculation of profit, but such proscriptions then makes it difficult for the law to define a flexible and internationally acceptable reporting framework. It is important to note that the law's requirements covers unrealized gains and losses from all sources, which for central banks are principally exchange rate movements and price movements on securities.

Allocating Profits: The following two sections give alternative approaches to maintaining a dynamic level of capital.

Australia: Reserve Bank Act, Act No. 4 of 1959, last amended 2000. Part IV—Central banking

30 Profits: (1) Subject to subsection (2), the net profits of the Bank in each year shall be dealt with as follows:

(aa) such amount as the Treasurer, after consultation with the Reserve Bank Board, determines is to be set aside for contingencies; and (a) such amount as the Treasurer, after consultation with the Reserve Bank Board, determines shall be placed to the credit of the Reserve Bank Reserve Fund; and (b) the remainder shall be paid to the Commonwealth.

Commentary. The Australian model provides Board discretion, limited by accountability to the Treasurer, as the basis for determining the level of allocation to reserves before determining dividends. The law prescribes no limit on capital, nor the framework for determining risk based capital levels. Instead, the law depends on the presumption that both the Board and the Treasurer are aware of

their respective roles and share a common understanding of the importance of a strong, independent central bank. The Treasurer has the right of veto in the face of excessive reserves accumulation by the Board, whilst the Board has the medium of public accountability to counter any attempt at capital dilution by the Treasurer. It is important to bear in mind that such discretion on the part of the Board is founded on the strong presumption of the parties' appreciation of their respective roles plus the existence of effective accountability mechanisms.

Bosnia Herzegovina: provides a more rule constrained model of dynamic capital maintenance:

Law of Bosnia And Herzegovina on the Central Bank of Bosnia And Herzegovina, May 29, 1997

Article 27. Allocation of net profit of the Central Bank: If the central bank has a net profit for any financial year, the net profit shall be allocated by the Governing Board and used in the following order of priority: a) an allocation from net profit shall be made to the capital account of the Central Bank in such amount as shall be required to increase the authorized capital of the Central Bank to a level equivalent to five percent of the aggregate amount of monetary liabilities (as defined by Article 31) shown in the accounts of the Central Bank for the end of that financial year; b) an allocation from net profit shall be made to the General Reserve maintained by the Central Bank in such amount as shall be required to increase the amount of the General Reserve to a level equivalent to the amount of the authorized capital of the Central Bank; the General Reserve may only be used to offset losses of the Central Bank; c) an allocation from net profit shall be made by unanimous decision of the Governing Board to special reserves for specific purposes established by the Central

Bank; and d) any residual net profit remaining after the preceding allocations shall be allocated in accordance with the following: the preceding allocations from net profit shall be deemed to have been made entirely from net operating revenues, except that, if no operating revenues are included in net profit or after the preceding allocations have exhausted net operating revenues included in net profit, such allocations shall be deemed to have been made from net unrealized valuation gains; residual net operating revenues if any shall be distributed to the appropriate fiscal authorities identified by the Parliamentary Assembly of Bosnia and Herzegovina in accordance to paragraph 2 of Article 25 of this Law within four months after the end of the financial year, and residual net unrealized valuation gains if any shall be allocated to a Valuation Reserve Account maintained on the balance sheet of the Central Bank.

Commentary: This law identifies a hierarchy of reserve allocation, which leaves dividends as a residual amount. The law divides net income into operating and unrealized foreign exchange revaluation elements. From operating income, the bank will make the allocations to capital and reserves as specified in articles 27 a, b, c of the law. Dividends to the government will consist of any residual operating income. The bank will allocate any unrealized revaluation gains to revaluation reserves except where there is a shortage of operating income to complete the specified capital and reserve allocations. The specification of a dynamic level of authorized capital is unusual as authorized capital is usually a specified amount and the reserves are flexible. The law tends to be counter cyclical as the central bank liabilities are likely to expand in the growth phase of the business cycle and the board is given limited discretion in the creation of special reserves.

Allocation of net losses: The law specifies an initial amount of authorized capital (article 25) to ensure sufficient startup capital for the bank. It is important that any central bank has sufficient startup capital both to ensure its initial solvency and also to prevent undue delays before it is able to start paying dividends to the government. The specification of a dynamic level of authorized capital is related to the trigger level for any government recapitalization obligations (article 29). The law should prescribe for the offset of losses against appropriate reserves and retained earnings and, where required, for the recapitalization of the Bank. Again, Bosnia Herzegovina provides a good example on the treatment of losses.

Bosnia Herzegovina. Law of Bosnia And Herzegovina on the Central Bank of Bosnia And Herzegovina, May 29, 1997 **Article 28. Allocation of net loss of the Central Bank:** If the Central Bank incurs a net loss for any financial year, the net loss shall be allocated as follows: a) if the net loss is composed of net operating losses and net unrealized valuation losses, the amount of net operating losses shall be charged to the general reserve or to capital in that order, and the amount of net unrealized valuation losses shall be allocated to the Valuation Reserve Account or, to the extent that the balance of the Valuation Reserve Account would be negative as a result of such allocation, to the general reserve or to capital in that order; b) if the net loss is the sum of net operating revenues and greater net unrealized valuation losses, the loss shall be allocated to the Valuation Reserve Account or, to the extent that the balance of the Valuation Reserve Account would be negative as a result of such allocation, to the general reserve or to capital in that order; or c) if the net loss is the sum of a net operating loss and smaller net unrealized valuation gains, the loss shall be charged to the general reserve or to capital in that order.

Accounts, Capital, Profit, Dividend and Tax of Bangladesh Central Bank

4. (1) The **capital of the Bank shall be Taka three crores**. (2) The entire capital of the Bank shall stand vested in and allotted to, the Government. (3) The capital of the Bank may, subject to the approval of the Government, be increased by a resolution of the Board, and any capital so increased shall be subscribed for by the Government in such form and manner as may be determined by the Government. (4) On the appointed day all the shares of the State Bank held in Bangladesh which have not already vested in the Government by or under any other law for the time being in force, shall by virtue of this Order, be deemed to have been vested in, and allotted to, the Government free from any trust, mortgage, charge, lien, interest, or other encumbrance whatsoever. (5) The Government shall pay such compensation in respect of the shares vested in the Government under clause (4) as may be determined by it and such compensation shall be distributed among the shareholders of the State Bank in Bangladesh in the manner as may be determined by the Government: Provided that the total compensation payable under this clause shall not exceed the total paid up value of the shares held by the shareholders, among whom such compensation is to be distributed.

59. Securities of the value of Taka three crores may be allocated for the purpose by the Government and shall be held by the Bank as the Reserve Fund.

64. After making provision for bad and doubtful debts, depreciation in assets, contributions to staff superannuation fund and for all other matter for which provision is to be made by or under the Order or which are usually provided for by bankers, **the balance of the profits shall be paid to the Government**.

65. (1) Not less than **two Auditors** shall be appointed and their remuneration fixed by the Government. (2) The Auditors shall hold office for such term not exceeding one year as the Government may fix while appointing them, and shall be eligible for re - appointment.

66. Without prejudice to anything contained in Article 65 the Government may at any time appoint the Comptroller and Auditor-General or such Auditors as it deems fit to examine and report upon the accounts of the Bank.

67. (1) Every Auditor shall be supplied with a copy of the annual balance sheet and it shall be his duty to examine the same together with the accounts and vouchers relating thereto; and every auditor shall have a list delivered to him of all books kept by the Bank, and shall at all reasonable time have access to books, accounts and other documents of the Bank, and may, at the expense of the Bank,

if appointed under Article 65 or at the expense of the Government if appointed under Article 66, employ Accountants or other persons to assist him in investigating such accounts and may, in relation to such accounts, examine any Director or Officer of the Bank. (2) The Auditors shall make a report to the Government upon the annual balance sheet and accounts, and in every such report they shall state whether in their opinion the balance sheet is a full and fair balance sheet containing all necessary particulars and properly drawn up so as to exhibit a true and correct view of the state of affairs of the Bank, and, in case they have called for any explanation or information from the Board, whether it has been given and whether it is satisfactory.

Summary: From a position that central banks should maintain, over time, a risk-based, non negative, level of capital, central banks need to construct their law to enable it to ensure this through the maintenance of sufficient reserves to protect against losses. Banks need to achieve this while addressing the government's legitimate rights to central bank profits and without impairing monetary policy efficacy. The evolution in the measurement and composition of central bank profit, and bank's move to adopt more transparent reporting frameworks means that previous formulaic allocations of profit to dividends and reserves are becoming problematic in ensuring the maintenance of central bank capital.

Central bank law should specify the central bank's accounting and reporting framework, which will subsume the calculation of profit. Such an approach is more efficient than specifying the elements of profit calculation as it allows evolution of the measurement and reporting framework to reflect developments in accounting frameworks. The evolution of international standards, including the growth of fair value measurement, has resulted in greater volatility in measured profit, along with an increase in the unrealized elements in its composition. These developments significantly affect dividend policy. As a minimum, central banks should ensure that they base the pool for calculating dividends on realized profits, net of unrealized losses not covered by reserves, delaying distribution of unrealized gains until realization. Dividends will be a residual item after appropriate allocations to reserves. Banks will calculate such reserves on a model of risk-based capital adequacy enabling a dynamic adjustment of capital in a manner that does not conflict with monetary policy objectives. Mechanisms for determining the allocation to reserves will be consistent with the central bank's overall accountability and independence configuration. The law will also provide mechanisms for the allocation of net losses and bank recapitalization in the event of extreme crisis.

Section IV: Amalgamating Central Bank and Fiscal Deficits

Central banks, as a general rule, operate outside the direct control of central governments. Behind this separation are usually historical and institutional factors. Although it is clear why the operational activities of central banks are carried out in a separate institution, it is less clear why the determination of policy is similarly separate. While the degree of real policy independence varies widely across central banks, the reason behind the persistence of at least a show of independence could be a recognition that monetary policies should be insulated from the vagaries of politics. Nevertheless, this does not logically preclude an accounting amalgamation for analytical purposes such as is proposed here.

Fiscal deficits, as conventionally defined on a cash basis, measure the difference between total government cash outlays, including interest outlays but excluding amortization payments on the outstanding stock of public debt, and total cash receipts, including tax and nontax revenue and grants but excluding borrowing proceeds. In this manner, fiscal deficits reflect the gap to be covered by *net* government borrowing, including direct borrowing from the central bank (Tanzi, Blejer, and Teijeiro (see Chapter 9, p. 178).

Central bank losses should be incorporated in measures of the fiscal deficit; however, not all central bank activities affect the profit-and loss account. Those other central bank quasi-fiscal activities whose impact is not already included in the central bank profit-and-loss statement should be examined by the analyst to determine whether they should also be incorporated. Perhaps most prominent among these latter activities is central bank quasi-fiscal lending. It is not proposed, however, that central bank accounting be done on a cash basis, that is, on the same basis as the fiscal accounts. Therefore, it should be recognized that the resultant deficit measure is likely to be a combination of cash and noncash elements.

The question of what precisely constitutes a central bank has been a controversial one. Indeed, central banking is often described by its practitioners as an art rather than a science, and the functions of central banks have evolved over time. The following list, derived from de Kock (1974), enumerates activities that would generally be accepted as properly within the jurisdiction of a central bank:

1. The regulation of currency, in accordance with the requirements of business and the general public, for which purpose the bank receives a full or partial monopoly of the note issue.

2. The provision of credit facilities, in a variety of forms, to commercial banks, discount houses, etc., in its capacity as the bankers' bank, and the acceptance of the responsibility of lender of last resort.³
3. The control of credit in accordance with the needs of business and the economy, and in order to carry out the broad monetary policy adopted by the government.
4. Bank supervision and regulation.
5. The performance of banking and agency services for the government.
6. Custodian of the commercial banks' cash reserves.
7. The custody and management of the nation's international reserves.
8. The settlement of clearance balances between banks, and the provision of facilities for the transfer of funds between important centers.

These activities fall into two groups: those that central banks perform either as the direct result of a government-granted monopoly or a fulfillment of government policy (numbers 1-4) and those that are essentially banking services (numbers 5-8). The economic impact of the first group is rather more complex than that of the second. The second group has clear-cut inputs and outputs, and could, in principle, be done by the private sector. In providing banking services, the central bank is essentially the same as any other public enterprise. This implies that the financial results of these activities should have the same impact as those of other public enterprises in the budget. As shown below, provided the central bank makes a profit, this will be the case, in the profit-and-loss account and the effect of central bank activities on its overall balance sheet follows.

Profit and Loss Account (Revenue): Almost all central banks have a monopoly in issuing currency and creating reserves-this right almost defines a central bank.⁵ As the cost of production of notes and coin is much less than their exchange value, the central bank captures the difference, seigniorage, during the money creation process. The same is true of the creation of reserves, a virtually costless procedure. To quote Meyers (1985, p. 27): Like monarchs of old, the Federal Reserve makes money by making money. It does this first by purchasing Federal Reserve Notes at the cost of production (less than 3 cents per note) and by issuing the notes at par. These non-interest-bearing IOUs (Federal Reserve Notes) are then exchanged for interest-bearing assets (government securities).

The interest on these securities in most cases provides a substantial part of a central bank's income. In countries where central banks are allowed to lend directly to the private or public sector, or both, interest on these loans is often an important component of income.

In many cases, the central bank requires commercial banks to hold reserves equal to prescribed fractions of their deposits at the central bank (often at a below-market interest rate). These can then be reinvested in government bonds, or used to finance other central bank activities, such as rediscounting, providing a further source of income. Many of the sources of revenue mentioned above fall under the rubric, "inflation tax." Although central banks are rarely charged with the maximization of revenue from this tax, in many developing countries the ease of collecting this type of tax has led it to become a major source of government finance. While it is well understood that the revenue obtained from the tax depends on the elasticity of the tax base, for example, see Auernheimer (1974), it is often the case that central banks appear to have exceeded the revenue-maximizing rate of inflation. (For an interesting discussion of why this might happen, see Khan and Knight (1982).

Another method by which the central bank may generate substantial income is through the administration of a multiple exchange rate system, where the central bank profits from the monopoly purchase and sale of foreign exchange. This is analogous to an export-import tax scheme in a country with a unified exchange rate or a tax on the sale and purchase of foreign exchange. Depending on the accounting conventions in the country, the revenue obtained from such operations may be transferred to the treasury directly or be added to central bank revenue. If it is transferred, gross government tax revenue would not be understated whereas, in the latter, tax revenue would be understated and, if the profits come to the treasury as central bank profits, non tax revenue would be overstated.

Aside from these sources of income, central banks receive income from other activities, including fees for acting as fiscal agents to the government/ charges for check clearing, and miscellaneous receipts, such as rents. A further potential source of revenue (or loss) is the effect of exchange rate changes on the value of the foreign assets held by the central bank.⁸ Such valuation changes, however, are usually excluded from the computation of profits and losses of the central bank; instead, changes on the asset side of the central bank's balance sheet are matched by changes in a revaluation account on the liabilities side. This is discussed further below.

Expenditure: Central bank expenditures can be divided into three categories. *First* are the general administrative expenditures on wages and salaries, benefits, equipment, and premises. *Second* are interest payments on deposits of commercial banks at the central bank and any other central bank borrowings. *Third*, and most difficult to analyze, are quasi-fiscal expenditures-expenditures on activities that are

additional to the central bank's monetary and exchange system responsibilities. These can take many forms: common examples are the provision of subsidized credit (either directly or indirectly through a rediscount scheme) to priority sectors, notably exporters and agriculture; contributions to development funds; expenses arising in connection with bailouts of ailing banks or industries; and exchange rate subsidies on particular types of transactions, such as debt-service payments or essential imports. The dividing line between quasi-fiscal and monetary operations, however, is often not easy to draw. For example, central bank rediscounting of bonds is generally considered a monetary activity (see also the discussion below, under "Economic Impact of Central Bank Activities"); however, it often takes place at subsidized interest rates, giving it a quasi-fiscal dimension.

As noted in the case of central bank revenue, the way in which *quasi fiscal expenditures are captured in the accounts is often unclear.* In most cases any subsidy will remain implicit; for example, the cost of granting loans at below-market interest rates is typically not calculated. Losses incurred in bailing out ailing industries may be reflected in an overvaluation of the central bank's assets rather than a reduction in operational surplus. *(Although it should be noted that, in some cases, central banks are required to exclude bad or doubtful debts from the computation of net profits. In addition, if reserves are increased by an appropriate amount, the surplus for distribution would be reduced.)* Other items may remain off-balance sheet, for example, exchange rate or loan guarantees. The provision of foreign exchange at an overvalued exchange rate can also be considered an implicit subsidy. Under a unified exchange rate, this will only generate a loss if the balance of payments is in deficit. If the balance of payments is in surplus, the central bank will make a profit.

Distribution of Profits or Losses: In almost all countries, the governing central bank law regulates the distribution of net profits among three beneficiaries: *central bank reserves, the government, and-if the central bank is only partially owned by the government-dividends to shareholders.* For example, in Belgium, *profits can also be distributed to the bank's personnel; in Switzerland, profits are distributed to the cantons as well as to the federal government.* Among the three, in recognition of the *financial autonomy* of the central bank, priority is usually given to central bank reserves. Thus, for instance, in some cases *the law prescribes that all net profits will go to the government once the reserve fund reaches a certain level;* in others, that a varying percentage of net profits go to each, *depending on the ratio of net profits to the bank's capital.* In some cases the moneys transferred to the government must be used in a particular way, usually to service or retire the national debt.

Although a proportion of net profits transferred to the government is often substantial, a potential asymmetry exists in that a net loss would not in general result in a transfer from the government (as might be the case, for example, in a public enterprise) but would instead be met by a reduction in reserves. A further point is that, unlike commercial banks, *there is no reason why a central bank cannot continually make losses and have a persistently negative net worth.* Therefore, unlike other public sector entities, central bank losses need not be “funded.”

John Exter’s Wisdom: John Exter who *drafted the Central Bank’s law wanted to prevent these profits from being used by the Government because it will create a new cycle of monetary expansion.* Thus, he made any profit transfer to the government conditional upon the Bank’s first meeting various other priorities such as building up of capital and absorbing previous losses. If the Bank desires to make any profit transfer, it should do so, according to the law, after meeting these priorities and having properly appraised the Minister of Finance of the consequences of such a profit transfer. In that manner, unlike the other public organizations, the Government does not get the first priority for the profits of the Central Bank. However, the Government has the right to claim the profits made by the Central Bank on its investment of foreign assets, since the Bank does so on behalf of the Government. The underlying reasoning is that, if the Central Bank does not manage the country’s foreign reserves, the Government will have to do it by itself and it can then appropriate such incomes for its budgetary expenses.

Overall Balance Sheet of the Central Bank: The overall balance sheet shows the composition of the bank’s assets and liabilities. The liabilities of the central bank typically include the note issue, deposits by the government (in the central bank’s role as fiscal agent), deposits by the private sector (usually owing to legal regulation or the central bank’s role as the banks’ banker), and loans raised by the central bank (which can be in foreign currency). On the asset side, the central bank may hold a variety of assets. Resulting from its monetary activities-intervention or rediscounting-it may hold government or private sector bonds and foreign exchange. It may extend credit to the government, to finance the government deficit. And finally, it may undertake quasi-fiscal activities, including the extension of credit to the private sector. To make the accounts balance, the difference between the bank’s assets and liabilities is shown on the liability side of the balance sheet. This item which is broadly equivalent to “other items net” in the central bank monetary accounts-has three important components. *First*, it includes the revaluation account that reflects valuation changes in the net foreign assets of the central bank. *Second*, it includes the net worth of the central bank,

the accumulation of its profits, plus interest, over time. And *third*, it includes the central bank's original capital, physical assets (such as buildings), and reserves.

Economic Impact of Central Bank Activities: In this section the economic effects of central bank activities and how they differ from those of central government activities are reviewed. Since-almost by definition-quasi-fiscal activities have the same impact as equivalent government activities, the focus will be on what have been defined as monetary activities. As outlined earlier, monetary activities can be divided into two groups: *first*, provision of banking services to the government and private sector, and *second*, explicitly monetary operations, which largely involve changes in the central bank's asset portfolio. *The first group* of activities can be discussed simply, since in performing them the central bank is very similar to a public enterprise. The bank provides services for the public and private sectors, for which it receives fees. Its expenditures and revenues have exactly the same effect as those of any other public enterprise and should be treated accordingly. *The second group*, which includes revenue from *seigniorage*, open market operations, and lending to the private sector through, for instance, the discount window, has somewhat more complex economic effects. The most straightforward is the revenue from *seigniorage*. This revenue transfers real resources from the private sector to the central bank, reducing private aggregate demand. In addition to their role in the generation of *seigniorage*, intervention and rediscounting raise another question. Intervention through open market operations involves the central bank either buying or selling securities in exchange for base money, usually to influence the path of the money supply or interest rates. Rediscounting involves the temporary extension of resources to the private financial sector to allow it to overcome temporary liquidity shortages without sharp movements in interest rates.

Seigniorage equals to the Profit of Creating Money. Since the cost of production for fiat money is very little, the face value of the currency can be much larger than its cost of production. For instance, it costs 6 cents to print a United States Federal Reserve note, regardless of its denomination. Hence, the printer of paper currency profits by creating more money. The value of money over its cost of production is called *seigniorage*. There is some *seigniorage* in producing commodity monies as well; otherwise no one would allocate resources to its production, but the profit is not nearly as great as it is for paper currency, since commodity money does have intrinsic value. Sometimes, governments increase their *seigniorage* profits by *debasement* their coins with cheaper metals. However, there must be some *seigniorage* for creating money for it to continue circulating as money; otherwise the coins would be taken out of circulation and melted for its metal. For instance, in 1792, the Continental Congress's first coinage act minted both gold and silver

coins. However, the amount of gold in the coins was more valuable as bullion than it was as coins, so little gold was sold to the mint for coinage. And the silver dollars at that time could be exchanged for Spanish dollars at face value. Since the Spanish dollars had more silver, it was profitable to exchange the American silver dollars for the Spanish dollars, which were then melted down and sold to the mint.

Italian Central Bank To Pay Back Illegal Profits From Seignorage – Judge (7 Oct2005): A Justice of the peace in the southern Italian town Lecce has decided that the Italian Central Bank's practice to retain the seignorage on paper money for its own profit is illegal and that the money should be turned over to its rightful owners - the citizens of Italy. The amount in question is a total of 5 billion Euro for Italian Lira paper-money issued in the time period from 1996 to 2003. After 2003, the issue of paper money became part of the European Central Bank's mandate. Seignorage is the difference between the cost of producing banknotes and the nominal value of the notes. The legal case was sustained by the Italian consumers association ADUSBEF, which deals especially with consumer implications of banking, financial and postal services as well as insurances. Elio Lannutti, the president of the association says that while the case is for one individual only, it opens a way for restitution of all the money illegally put into its own coffers by the Italian Central Bank, which is owned by Italian commercial banks. Lannutti says "we would like the money to go to the victims of financial cracks" adding that the government fund for that purpose is woefully lacking behind. A bill to be introduced into the Italian Parliament is being prepared according to Giorgio Benvenuto of the DS center-left party.

In his sentence, the Justice of the Peace, Cosimo Rochira, explains the historical roots of seignorage: "When money was made of gold or silver, citizens could go to the mint with ingots of metal and get them transformed into coins. The sovereign, guaranteeing the value of these coins, got to keep a certain percentage of the metal, and that was called seignorage." An expert opinion filed in the case says that the profit from money, which the Central Bank puts into circulation should rightfully go to the State, not to groups of private investors - the commercial banks - which are the shareholders of the Central Bank. The powers of the sovereign of old are today vested in the government and the people, not banks and insurance companies. In consequence, the judge ordered the Central Bank to pay the plaintiff 'his share' of the illegallly obtained profits from seignorage - 87 Euro. Multiplying that amount by around 58 million, the number of Italian citizens, the liability for the Central Bank could be a whopping five billion Euro. Payment is not automatic, however, so the consumers association is planning further cases with hundreds more citizens asking their share - until a general repayment scheme can be worked out. Attorneys for the Central Bank

have opposed the case, calling the demands “unfounded”. There was no immediate comment from the Central Bank’s press office.

Both intervention and rediscounting can result in the extension of credit to the private sector. An important question is whether this credit extension is similar to, for example, a government loan to a particular industry (which would be considered as net lending) or whether it is qualitatively different. It is argued here that a distinction can be drawn, based on three differences: motive, availability, and the prospects for repayment.¹⁴ Open market operations are aimed at achieving a particular monetary result. There is no intention to provide reserves to any particular sector of the economy, and the central bank does not attempt to distinguish the ultimate receiver of liquidity. Rediscount policy, however, does provide reserves to specific private sector entities. Its purpose is money management: credit is provided (subject, in many cases, to various regulations) to whichever banks require it. In general, there is no attempt to channel the funds to any particular end use (although certain activities—for example, speculation in foreign exchange—may be discouraged). Finally, assets acquired through rediscounting are likely to be serviced and ultimately repaid. Lending by government is, however, usually made for a specific policy purpose and directed toward particular enterprises that usually could not raise loans on the same conditions from the private sector. Such lending, therefore, involves at least implicitly an element of subsidy and may ultimately not be fully repaid.

There are really two elements to this argument. The first is that government net lending cannot be treated as if it creates an asset and liability of equal but opposite magnitude, and because of this it is conventional to include it in government expenditure. The second is that government expenditure should measure, in some sense, the gross volume of resources the government directs toward public policy purposes. In this vein, intervention and rediscounting are not equivalent to government net lending or government expenditure in the sense that they do not direct resources to any particular sector for public policy purposes. These central bank monetary operations are much more like simple switches in assets that do not affect government net worth. For these reasons, open market operations and rediscounting should not be considered equivalent to government net lending. Such central bank operations are undertaken for the purpose of overall management of monetary conditions and should simply be considered as (mutually offsetting) portfolio adjustments.

Amalgamating the Accounts of the Central Bank and Central Government:

In this section some of the theoretical and practical issues involved in

amalgamating the accounts of the central bank and central government to produce a deficit measure consistent with the principles underlying the conventional deficit measure are considered. The analysis is divided into three parts, each covering different types of activities. The *first* covers activities that affect only the profit-and-loss account of the bank; the *second*, activities that affect the bank's balance sheet; and the *third*, three activities that are worthy of special attention: direct lending to government, exchange guarantees, and the implications of different accounting conventions in government and central banks.

Activities Affecting the Profit and Loss Account: Central bank activities that affect solely the profit-and-loss account of the central bank include the banking services side of monetary activities and certain quasi-fiscal activities, for instance, subsidized credit refinancing for exporters, which is unwound over a short period. If the central bank makes a profit and provided that the amount the central bank transfers to its reserves is not excessive (reserves policy is discussed further below), the net operating surplus of the bank will accrue to the government and reduce the deficit. Therefore, the net result of these activities is effectively already included in a conventionally measured deficit. This analysis implicitly assumes that central banks remit 100 percent of marginal profit (when the bank is making a profit) and zero percent of the marginal loss (when it is making a loss). It may be, however, in a particular country, that the marginal rate of transfer of central bank profits is less than 100 percent. In such cases, even were the central bank making profits, the transfer of a quasi-fiscal activity between the government and central bank would not be completely neutral. This potential qualification is ignored in what follows.

It would thus seem that, for measuring the fiscal deficit, no distortion will arise if the central bank performs banking services, or if it undertakes quasi-fiscal activities of a kind such that the entire impact is felt on the central bank's, profit-and-loss account in the year in question. Two points should be made, however. First, leaving such activities in the central bank accounts will understate the gross level of government expenditures and revenues, frequently taken as a proxy for the level of government intermediation in the economy. Second, as noted above, the cost of quasi-fiscal activities undertaken by the central bank is rarely transparent. There are analogous problems with certain central government activities, for example, measuring the *net* value of public asset sales—that is, the gross sales proceeds minus the value of the asset sold.

For instance, in providing subsidized credit, the central bank effectively accepts a lower rate of return on its assets, rather than provide a subsidy directly. Isolating

quasi-fiscal activities in the central bank accounts would make these costs more transparent, thus aiding scrutiny of the activities by the authorities.

To conclude this section, two further questions are discussed- central bank reserve policy, and what happens when central banks make losses. Earlier the role of the central bank's reserve policy in determining the residual transfer to government was noted. Obviously, if the central bank increases its transfer of profits to the government by reducing its transfers to reserves-and therefore its net worth-then government revenue can be higher, and the conventional fiscal deficits will be lower. Consequently, in interpreting the fiscal deficit, it is important to be sure that the central bank reserve policy is appropriate or at least will not be manipulated. Clearly, the central banks' auditors can potentially play a useful role in determining whether reserve transfers are adequate.

Subject to an appropriate reserve policy, developments in the central bank's profit-and-loss account are fully transmitted to the government accounts since the residual profit is transferred to the government. The question arises, however, as to *what happens when the central bank makes a loss, no profits are transferred, and the loss is covered by balance sheet operations-for instance, a reduction in reserves, or printing money, with an equivalent reduction in central bank net worth*. In this case, central bank losses are not fully transferred to the fiscal deficit and an asymmetry exists. To deal with this problem, symmetry must be restored. If central bank net profits go to the government, then central bank net losses should result in a transfer from the government. Thus, the impact of the entire central bank loss should be included in the government accounts, for instance, by a transfer from government, thereby increasing the fiscal deficit.¹⁹ Should there be no change in financing arrangements, then two corresponding effects on the central bank accounts will occur. On the liabilities side, there will be no reduction in net worth, as the losses are borne in full by the government. On the assets side, central bank credit to government will increase by the amount of the losses, ensuring that the balance sheet continues to balance. This procedure illustrates the philosophy underlying the approach used in this chapter. The central bank is considered to be a basically sound institution, which will not make losses on its core operations. It can, however, be asked to undertake loss-making operations by the government. The impact of these operations must be unscrambled from the accounts in such a way as to allow the full cost to fall on the government budget, leaving a financially sound central bank. There are some circumstances, however, where central banks apparently undertaking only monetary operations can run deficits.

Activities Affecting the Central Bank's Balance Sheet: This subsection is concerned with activities whose costs do not immediately (or fully) fall on the profit-and-loss account, but are instead reflected in a change in the composition of the central bank's assets and liabilities. Examples are central bank loans to commercial banks or industry that are financed by changes in high-powered money or by central bank borrowing. Some theoretical considerations are needed at this point. The economic cost of an activity can be considered as the amount that would have to be paid to the private sector to undertake the activity in question. Thus, for example, the cost of net lending to the private sector is the sum that would have to be paid to a private commercial bank to undertake the lending itself" and would, in theory, be equal to the expected discounted future loss arising from the loan, adjusted for risk. Thus, to maintain its financial integrity, when undertaking a quasi-fiscal activity, the central bank would ideally increase its reserves sufficiently to cover that cost, effectively reducing its profit transfer to government and increasing the fiscal deficit by the same amount. If it did this, the fiscal deficit would fully reflect the cost of the quasi-fiscal activities undertaken by the central bank in the sense of their impact on net worth.

Two problems arise, however. First, in practice, there is no easy way to measure the ex ante economic cost under uncertainty. Second, even if a suitable technique was available, such a treatment would be inconsistent with that of the cash deficit definition presented above, where, for instance, net lending is included in full in government expenditure. The cash deficit reflects the financing requirement of the government, rather than the change in its net worth. For consistency, therefore, central bank lending to the private sector must be treated in a similar way. Merely incorporating all central bank lending to the private sector into the fiscal deficit would ignore an important distinction, however. Central banks can hold private sector assets as a quasi-fiscal activity, involving, for instance, a direct loan to a particular private sector entity and as part of their normal "monetary" activities, including rediscounting and intervention. If all changes in central banks' holdings of private sector assets were treated as net lending, these two activities would be treated as having similar economic effects. As argued in the previous section, normally, intervention for monetary purposes should not result in an increase in a consolidated deficit measure, financed by the issue of high-powered money. Rather, it would seem appropriate for both the purchase of the private sector debt instrument and the sale of high-powered money to be regarded as financing items, and cancel each other out.

To preserve the aforementioned distinction among types of central bank lending, the ideal solution would be to transfer quasi-fiscal lending from the central bank to the

government accounts, with a counterbalancing change in net credit to government from the central bank. For consistency, one would also remove the corresponding interest payments on these assets from the profit-and-loss account-although, for calculating the fiscal deficit, this is again not necessary if the net revenues from it will effectively be transferred to the government. Another potential source of changes in the central bank's balance sheet is changes in the value of its foreign exchange holdings due to changes in the exchange rate. In such a case, changes in exchange rates will usually cause changes in the domestic currency counterpart of net foreign assets, resulting in an unrealized profit (or loss). This valuation change could be treated in any of three ways: as central bank income, as an increase in central bank reserves, or it could be effectively frozen in a revaluation account.

In almost all cases, unrealized valuation changes are excluded from central bank income, on the grounds that the valuation changes attract no new resources into the country and do not decrease claims on resources by those inside the country. The expansionary effects of government expenditure "financed" by such unrealized profits are similar to those of expenditure financed by central bank credit. Thus, *unrealized valuation changes should not be considered as revenue enhancing or reducing, as they would be if they were included in central bank profits*. The impact then will generally fall on the central bank balance sheet. *If it were added to reserves, however, it would bias the reserves figures. Therefore, valuation changes are most appropriately excluded from reserves, as well as net income, and frozen in a revaluation account.*

Should the unrealized gains become realized, a different situation would exist. Compared with the situation that would have obtained with no revaluation gain, purchasing power in the private economy is reduced by the amount of the valuation gain, and thus expenditure "financed" by realized gains is similar to expenditure financed from revenue. *If the central bank's accountants took note of the capital gain, it would be hypothecated to reserves: thus, other transfers from income to reserves would be correspondingly reduced, and transfers to the government would increase, reducing the, fiscal deficit.* In some cases, the central bank does not keep track of capital gains and losses that are due to the sale of previously purchased foreign exchange. Rather than shifting the accounting entry from revaluation account to profit account, no change is made. In practice, this means the gain is never effectively realized. Nevertheless, it is a true gain, as the liabilities of the consolidated central bank or government are lower after the gain than otherwise would be the case. One ad hoc way around this accounting problem would be to attribute valuation gains or losses to central bank income over a period of several years.

An important question here is the rate of interest on central bank lending to government. If the interest rate is low, or even zero, the cost of financing the government deficit will be understated. To force the government to recognize explicitly the costs of financing its deficit, it would be more appropriate to charge market-related interest rates. However, if central bank profits are transferred to the treasury, this would not of itself discourage the government from borrowing more from the central bank, if it is prepared to ignore the monetary consequences, as higher interest costs would be matched by higher revenues. If the volume of government borrowing leads to a rate of monetary base expansion greater than that desired by the central bank, the bank may be forced to take costly measures to reduce liquidity growth. This may involve selling interest-bearing stabilization bonds or paying market-related interest rates on excess reserves of the banking system. In cases where interest rates are quite high, interest on required reserves might also become necessary to avoid undue bank taxation and potential disintermediation.

In essence, the government is using the central bank to finance its deficit and, in effect, the interest paid by the central bank on reserves and stabilization bonds is equivalent, in an economic sense, to interest paid on government debt. In this case the central bank is motivated by monetary reasons but the result is a quasi-fiscal operation. If the central bank makes a profit, the interest paid on these bonds correspondingly reduces the transfer to government. Consequently, the interest costs do increase the fiscal deficit. Though some central banks are prohibited from direct lending to the central government, the central bank may acquire government debt in the market and thereby achieve much the same result as direct lending. Central banks may also increase the market demand for government debt by allowing it to be held by banks to satisfy reserve or liquidity requirements, thereby reducing the interest rate the government needs to pay to sell it. Thus, manipulations of reserve or liquidity requirements, as well as open market operations involving government securities, may have implications for the central government deficit even though they might be considered “purely monetary” operations.

A similar potential for reducing recorded government expenditures arises with purchases of foreign exchange by the government through the central bank. Subsidized exchange rates may be given for selected government purchases and debt service. In cases where the operating conventions mentioned above serve to reduce nontax revenue received from the central bank, the gross expenditure and revenue flows of the central government are understated although the overall deficit remains unchanged. In cases where central banks are running deficits,

however, in addition to influencing the gross flows, the central government deficit is reduced. It is clear that in such cases government deficit figures must be treated with some caution.

Central Bank Exchange Rate Guarantees: Unlike most other central bank activities, guarantees have no immediate effect on either the profit-and-loss account or the balance sheet. Nevertheless, in many cases, notably in Latin America, they have eventually resulted in very large losses. A foreign exchange rate guarantee is a form of insurance contract. For a specified premium, the insured obtains a guarantee of foreign exchange at a certain price on a given date. If a premium is charged that is above the actuarial value of the contract, then the insurer stands to make a profit in return for reducing the insured's risk. Of course, if a lower premium is charged, and many guarantees were offered for free, an ex ante subsidy is provided. In many cases in Latin America, exchange rate guarantees were offered as a way to facilitate foreign borrowing by domestic residents. These guarantees fixed the debt service in domestic currency terms, thereby reducing the risk to the creditor that the debtor would default solely on account of a real exchange rate depreciation. Had the central bank acquired the foreign currency counterpart of such borrowings, it could have diversified its own risk by holding external foreign assets. Because much of the borrowing was tied to imports, and also for other reasons, central banks did not keep foreign exchange backing for their guarantees. (Inasmuch as these might be considered contingent liabilities, one would not expect that full backing is necessary.)

In cases where firms borrow abroad and seek an exchange rate guarantee, they are usually attempting to insure themselves against the real exchange rate depreciation that might result from a large nominal depreciation. This is a larger problem for the firm the lower is the proportion of the firm's earnings derived from goods priced in world markets. Unfortunately for the central bank, the demand for such guarantees increases when there are expectations of a devaluation; at such times, guarantees are quite risky. At the same time, however, if the firm is borrowing abroad, this can be expected to alleviate pressure on the central bank to supply foreign exchange in the short run. As the demand for guarantees increases, especially as firms roll over non-guaranteed debt, the bank's foreign exchange exposure increases. With the growth of guarantees, the incentive not to adjust the nominal exchange rate increases, as this would inevitably involve substantial losses for the central bank. Large losses resulted in cases where the central bank, usually because of a rapid rate of base money creation, could not maintain the rate, devalued, and the guarantees were called. From the perspective of the central bank's balance sheet, when a guaranteed debt-service payment is

made, the value of its foreign assets falls by an amount equal to the foreign currency payment multiplied by the new exchange rate, which is greater than the amount of base money used by the private sector to purchase foreign exchange.²⁵ Thus, foreign assets fall by a larger amount than base money and the difference is a reduction in the net worth of the bank.

What are the economic impacts of such a policy: And here we are speaking of the *policy* rather than a particular realization. In any insurance scheme there is the potential for the insurer to take losses from time to time. This is true even if the fundamental policy is profitable. In most cases, though, the central bank traded guarantees for access to foreign exchange at favorable rates and, therefore, did not charge premiums related to the cost of the service it was providing. Assessing the expected present value of gains and losses of such a policy is very difficult. It also raises the question to what extent contingent liabilities should be measured and included in the accounts. Unfunded social security schemes and government guarantees of public sector enterprise or private debt are other examples of off-balance sheet items that may represent very important claims on future government resources.

A current debate in commercial banking practice and regulation in the developed countries is to what extent reserves should be held against contingent liabilities (thereby reducing the net return on total assets). The difficulty is that the liability can only be expressed in expected value terms-it is in the indefinite future and is most probably not accounted for in the current budget or perhaps even in the budget planning horizon. Such liabilities can be quite important, however. The adoption of an actuarially unsound program, that is, where the premiums charged are not enough to cover the expected future payments, may have more of an ultimate impact on the future tax burden of the private sector than any change in the current budget. Ideally, the central bank accountant could measure the expected gains and losses, attribute the budgetary cost to the adoption of the policy rather than to a particular realization, and thereby develop a correct measure of the ex ante subsidy. A similar issue arises in the context of government-provided bank deposit insurance. Here the public-good aspect of preventing bank runs must be weighed against the potential moral hazard problem. Unfortunately, central banks do not usually relate premiums to the value of the guarantee as they are often under severe pressure to obtain foreign exchange and are willing to extend these guarantees probably with the knowledge that a debt rescheduling would be necessary should the guarantees be called upon.

How should this situation be treated. As a practical matter a calculation of the fiscal impact of an issuance of contingent liabilities is very difficult. However, while it may be that there is no alternative to calculating losses as they are realized and financed (the bank could borrow the difference between the domestic currency value of the foreign exchange payments it would have to make and the value it receives from the government or private sector), one should remain cognizant that when the loss is realized, a contingent liability is extinguished. This points out a principle that is important to recognize. To measure the impact of guarantees on aggregate demand, one must return to the adoption of the policy and determine the ex ante subsidy. For it was the ex ante subsidy that affected economic decision making. Therefore, although the correct focus should properly be on the policy of exchange guarantees and, in an expected value sense, this is the potentially debt-creating activity, there seem to be no practical alternatives to including losses from guaranteed payments in the public sector deficit as they are realized.

Of course, in many cases, the central bank does not freely offer guarantees. In the context of a debt rescheduling, it has been the case that governments or central banks were forced to assume the external transfer portion of private sector debt even when it was not guaranteed by the government. In such cases, the central bank is virtually forced to take a loss if the exchange rate guarantee is at an overvalued rate. The future losses generated by such an agreement should be viewed as part of the cost of a debt rescheduling and, therefore, should be part of a deficit measure, especially if the direct impact on the *government's* deficit is to reduce debt-service payments. The main issue with respect to exchange rate guarantees is the treatment of contingent liabilities in circumstances when they are likely to become realized. This is akin to the situation with public enterprise debt. If the enterprise is operating efficiently and borrowing to finance profitable expansion, a government guarantee is less likely to be a problem than if the borrower is a loss-making enterprise that is a drain on the government budget. It is uncharacteristic for governments to charge insurance premiums to firms in such cases that reflect true economic costs. Therefore, a guarantee may create a loss in expected value terms, and yet not be realized until some time later. Government net lending is treated as expenditure in the deficit definition used in this chapter while government loan guarantees are not. At times this distinction appears arbitrary. Government practice in granting loan guarantees is such that it generally validates this distinction.

Accounting Conventions in Government and Central Banks: The conventional government deficit concept as presented here is based on a cash-accounting system. Cash accounting is both useful and practical for government.

It is useful in that it will be consistent with the deficit financing in any given period. It is practical because government is often unaware of its accruing receipts (for example, tax receipts due) and expenditures. It should be noted, however, that conventional fiscal deficits are not based entirely on the cash concept. This arises, on the one hand, from non cash accounting in the central government where expenditures are typically recorded on a checks issued basis, which creates a problem of adjustment to the monetary figures-check float-and on the other, by the fact that public sector entities, including the central bank, presumably base their payments or receipts to government on the basis of their accounting surplus or deficit, which may not be on a cash basis. Central bank accounting systems typically follow the normal business practice of being on an accrual basis. This practice allows an easier calculation of the net worth concept. The analyst must therefore be careful in comparing the two-deficit measures.

Summary: The section has shown that if a central bank undertakes only monetary activities, and provided it is profitable, its net result will be included in the fiscal deficit automatically. This is also true of a profitable central bank if it undertakes quasi-fiscal activities that only affect its profit and-loss account. If it undertakes other types of quasi-fiscal activities, however, such as net lending, which show up initially only as a change in the composition of the central bank's assets, the fiscal deficit as conventionally measured can be an unreliable indicator. It will also be unreliable if the central bank makes losses.

Ideally, government accounts should incorporate quasi-fiscal revenues and expenditures, leaving the central bank accounts covering only monetary activities. Such an approach, however, presents many practical difficulties owing to the differing accounting systems used in government and central banks. There is no elegant solution to these problems; however, some supplementary indicators could be developed to provide additional information. First, central bank losses in the profit-and-loss account could be amalgamated into an adjusted fiscal deficit by the addition of a transfer from government to the central bank financed by credit from the central bank. Second, an estimate of the size of central bank quasi-fiscal activities falling outside the profit-and-loss account could be made, and the activities removed from the central bank accounts and amalgamated into the adjusted fiscal deficit. Such a hybrid deficit would involve inconsistencies in the sense that a net-worth concept might be mixed with a cash concept, but would have value_ as a supplementary indicator showing the approximate impact of central bank quasi-fiscal activities on the economy. Experience in a number of countries has shown that the existence of exchange rate guarantees can result in heavy losses for central banks. Further supplementary indicators-showing, for

instance, the value of such guarantees outstanding, and the losses that would result if they were called at the current exchange rate—could provide useful information. There is no simple way, however, to include guarantees in a conventional deficit measure unless and until they result in actual losses.

Quasi Fiscal Operation (QFO): Some governments even require their central banks to undertake certain fiscal activities. Clearly, analysis of the extent of central bank Quasi Fiscal Operation (QFO) deserves attention, but attempts to advance understanding of the role of central bank QFO faces several difficulties. According to Fry (1993), central bank QFO are difficult to quantify, the central bank accounting conventions differ from those of government and the distinction between monetary and fiscal activities of the central bank is blurred.

This research uses monetary statistics to determine central bank QFO. The main categories of QFO may be specified as, first, *Operations related to the financial system*: Subsidized lending, Administered lending rates, Preferential rediscounting practices, Poorly secured and sub-par loans, Loan guarantees, Under-remunerated reserve requirements, Credit ceilings, and Rescue operations. Second, *Operations related to the exchange system*: Multiple Exchange rates, import deposits, Deposits on foreign asset purchases, Exchange rate guarantees and Subsidized exchange risk insurances. All QFO change allocation of resources. The first group comprises redistributive operations related to the financial system. These imply distortions in the financial markets. We assume that subsidized lending is typically extended at the request of the government or parliament. If the interest rate of such credit is lower than interest rate prevailing in the market, then the credit may be identified as central bank QFO. Extension of credit at a preferential interest rates is essentially a subsidy and typically directed at entities with higher credit-risk premia. In the long run, the cost of improvement of such entities' assets constitutes budget expenditure. The subsidy element may be also included in the credit extended by the central bank to the government if the interest rate charged is below market, or when the central bank on-lends money to financial intermediaries with instructions to extend credit to the government. In any case, when the central bank is obliged to lend below market rates, this constitutes a fiscal subsidy. It may be assumed that subsidized lending is a substitute for banking sector reform and a failure to introduce hard budget constraints. In general, the central bank should not be used for channeling financial resources to priority sectors at below market prices. If there is no other solution temporarily, the bank may set aside reserves against potential losses and decrease transfers to the budget. Reserves are also necessary against contingent liabilities [Vaez-Zadeh, 1991].

Another area of interest is commercial bank reserves. Mackenzie and Stella (1996) comment that a fiscal element in the reserve ratio arises when the assets do not earn the market interest rate. Such policy has an allocative dimension, because resources are transferred from the commercial bank to the central bank. Beckerman (1997) criticizes the entire notion of remuneration of reserves, noting that such remuneration constitutes base money emission and amounts to the dubious practice of paying interest on base money. As concerns the quasi-fiscal element, our attention concentrates on cases where the interest rate charged differs from the market rate.

Credit ceilings also change the distribution of resources and are part of a system of financial repression that combines controls on international capital flows with restrictions on domestic interest rates. Financial restrictions encourage instruments from which the government can expropriate significant seignior age. Further, financial restrictions enable more revenues to be raised without jeopardizing monetary stability [Fry, 1993]. Most of the measures employed in the process of financial repression have quasi-fiscal character i.e. imposition of foreign exchange controls, credit ceilings or selective reserve requirements. Many central banks have benefited from financial restrictions by collecting quasi-fiscal revenues from the banking systems. Finally, we have the most visible and the expensive form QFO-rescue operations. These can take the form of an infusion of capital to a troubled institution, of an assumption of non-performing loans, or of exchange rate guarantees. If these operations are undertaken by the central bank, it must be assumed they have a quasi-fiscal character [Mackenzie, Stella, 1996]. Bank rescue operations are also often linked to implicit deposit insurance schemes. To ensure transparency of public sector accounts, bank rescue operations should be financed directly from the budget or refunded ex post by the government to the central bank. [n the long run the banking sector needs reforms.

Operations associated with the foreign exchange can be divided into two groups, resulting from multiple exchange rate system and resulting from the assumption of the exchange risk by the central bank (usually contingent liabilities). Multiple exchange rate (MER) practices were quite common at the beginning of transition [Sodart, 1996]. MER imposes distortions in the foreign exchange market and can be replaced by additional taxation. The net effect of a MER system may be an increase or decrease in central bank profits [Fry, 1993]. Exchange rate guarantees are often extended free of charge. The assumption of exchange rate risk by the central bank is equivalent to a subsidy granted to the domestic borrower. The risk premium is artificially decreased at the expense of the central bank. Moreover, the attractiveness of guarantees grows with the risk of devaluation of the domestic

currency. In case of devaluation when a guaranteed payment is made, foreign assets fall by a larger amount than base money and the difference is the reduction in the net worth of the bank [Robinson et.al., 1988].

The scope of QFO undertaken by a central bank depends on its relations with the government. Typically, the central bank acts as the fiscal agent of government, and when financial markets are underdeveloped or central bank independence is low, the practice of extending credit to government is widely used. The IMF recommends charging market interest rates on such credits and transferring bank profits to the budget. However, country experiences differ in this regard. Direct lending to the government can take place through the use of overdrafts, by means of fixed-term loans and advances or through the purchase of government securities on the primary market [Mackenzie, Stella, 1996]. When central bank profits are fully transferred to the budget, even if the market interest rate is charged on credit to the government, the monetary consequences on price stability may be overlooked. This obliges the central bank to sterilize excessive monetary emissions caused by financing the government. Mackenzie and Stella suggest sterilization and open market operations, which have a monetary character, are QFO because the Losses they entail sooner or later will affect the budget. Central bank support of the government may take different forms. The central bank can influence the interest rate on credit to the government indirectly by allowing commercial banks to meet their reserve requirements with treasury securities. Thus, the demand for government securities is artificially overestimated, which causes a drop in their price. The central bank can also establish high reserve requirements with no interest charged. Here, the central bank lends money to government below market rates and banking resources are transferred to the budget. The practice of granting credits to the government at below market rates leads to a drop in central bank profits, which undermines central bank independence. Cottarelli (1993) emphasizes that the budget may benefit more from an increase in central bank credit to the government than it does from an increase in such credit to the banking sector. Central bank independence from government is advocated as a remedy against inflationary bias of government explained by revenue motive [Cukierman, 1992]. The development of financial markets also allows limiting direct deficit financing by the central bank.

Houerou and Sierra (1993) argue that subsidized lending to the government from the central bank is not a quasi-fiscal operation, but rather a standard way for the central bank to transfer seigniorage and inflation tax revenue. However, it is important to increase transparency by allowing the government to service its central bank debt at market rates and make sure seigniorage revenue or other

revenues are explicitly transferred to the government. We argue here that subsidized credit to the government and other forms of support to the budget have a quasi-fiscal dimension, i.e. they are redistributive operations that fall outside the budget. However, if one argues that profits transferred to the budget ensures that QFO will be reflected in budgetary accounts, two problems arise. *First*, not all QFO affect the profit and loss account of the central bank. There are some operations that are reflected only in the balance sheet, for example, as credit to commercial banks or the private sector financed through monetary emission. In this case, under the condition of stable money demand, QFO of the central bank are reflected in inflation. *Second*, if the consequences of the QFO are reflected only in profit and loss account (i.e. in the case of subsidized credit) two aspects must be examined: the share of bank's profits transferred to the budget and financial consequences of the central bank operations [*Manual on Fiscal Transparency*. Robinson et.al., 1988]. If QFO are reflected in profit and loss account without any delay and full amount of profits is transferred to the budget, we may assume that QFO are reflected in the budgetary accounts. Of course, there is typically a lag between the time when QFO occur and impact the central bank's profit and loss account and the time of transferring the central bank profit to the central government. The lag is even longer in the case of contingent Liabilities. Hence, usually some portion of central bank profits are retained as central bank reserves. Without transparency rules in place, the central bank may manipulate these profits at the expense of reserve funds. With a 100-percent rate of transfer of profits to the central government, the deficit figure is calculated properly, but revenues and expenditures are undervalued. Moreover, the information on costs of QFO is missing [Robinson, et.al., 1988]. The practice of transferring profit to the budget (or at least a part of them) is quite common. However, the method for dealing with central bank losses is different. These are usually covered by a reduction in bank reserve funds or financed with money issue. If the central bank makes losses (e.g. as a result of QFO or sterilization), they should be compensated by the budget, and thus increase fiscal deficit [Robinson, et.al., 1988]. Finally, inflation may be a major source of distortion in the computation of QFO influencing nominal amounts [Teijeiro (1989), Rocha and Saldanha (1992)]. Fry (1993) indicates that under inflationary conditions, part of the central bank's profit constitute revenue from the inflation tax. The inflation component of interest earned by the central bank on its holdings of private sector claims must be subtracted from the conventional profit transfer and treated as a financing item.

QFO attract our attention because of their consequences.³ They involve transfers, subsidies, and taxes not usually included in the general government budget, and

thus imply misallocation of resources. Their allocative effects can be highly distortionary. Through their impact on the interest rate, QFO introduce price distortions into the financial markets and may result in a crowding-out effect. QFO involve excessive risk-taking for the central bank; increase the probability of negative cash-flow from these central banks' opetary management and control [Leone, 1993]. A central bank burdened with fiscal activities can hardly aspire to independence from government. QFO can also make the government indebted to the central bank in a way that decreases the quality of central bank assets. If credit to the government is the main component of assets, then credibility of backing reserve money depends on the credibility of government [Beckerman, 2000]. QFO can also decrease the credibility of macroeconomic policies and the impact of monetary instruments. Changes in the balance sheet structure leaves little room for sterilization. The macroeconomic effect may appear before maturity in the case of contingent liabilities.

QFO are also likely to jeopardize monetary policies designed to maintain price stability [Fry, 1993]. This happens if the seigniorage level that otherwise assures stable prices is insufficient to cover the cost of QFO. Then the central bank makes losses. Vaez-Zadeh (1991) argues that central bank losses are usually a substitute for larger fiscal deficits and that their impact is the same as monetization of budgetary deficits. If central bank losses are not met by government budget appropriations, they must eventually lead to an expansion in central bank money and abandonment of monetary policy goal of price stability [Fry, 1993]. QFO may also lead to depletion of foreign currency reserves. Bank assistance operations may influence the stability of banking sector by leading to moral hazard behavior among other banks expecting support at the cost of government resources [Daniel, et.al, 1997]. Most of the literature stresses the negative consequences of QFO, but there can be benefits. One may argue, for example, that QFO conducted by the central bank allows delay in fiscal adjustment, which could earn additional time for reforms. During early transition, for example, QFO may be useful if the tax system is a mess.

Losses and net Worth of central banks: Following Vaez-Zadeh (1991), Teijeiro (1989) and Leone (1993), we argue that a central bank carrying out traditional monetary policy functions in a stable macroeconomic environment will make profits, for example, from seigniorage on currency issues. However, the macroeconomic environment in transition economies is usually unstable and the central bank is often forced to increase revenues, fiscal activities reduce central bank profits or even produce losses. Thus, central bank losses occur when the bank takes on functions outside its normal role, e.g. subsidized lending to priority

sectors or rescue operations. Fry (1993) indicates that serious central bank losses may arise when timing of domestic currency receipts has been divorced from the timing of foreign currency payments. The lack of financial discipline, sterilization operations or bad management may also lead to losses, but permanent losses usually represent hidden fiscal deficits and reflect QFO.

On the liability side of the balance sheet, the main item sets reserve money, which does not entail interest rate obligations. Commercial bank reserves are supposed to earn market interest, but this is often not the case. We treat such under-remunerated reserves as evidence of QFO. On the asset side, we expect all items to earn market interest. Thus, the net interest income is expected to be positive. The main expenses comprise cost of money production and the operating costs, which cover the existence of the central bank. A loss will occur when the interest rate charged by the central bank on its loans is not high enough to cover printing and administrative costs of currency issue [Vaez-Zadeh, 1991]. The common reason behind this is a subsidy included in interest charged on assets.

The ability of the central bank to influence the return on its assets is crucial to avert losses. Fry (1993) notes that central bank profitability depends on the extent to which the bank exploits its monopoly over reserve money. A balance sheet situation that causes losses when prices are stable may produce a profit at some positive inflation rate. However, as pointed by Vaez-Zadeh (1991), the central bank's ability to vary reserve money to prevent losses could be constrained by its monetary policy objectives.

In summary, we can assume central banks do not make losses under normal conditions and permanent losses indicate the existence of QFO. We have seen such losses reach huge proportions in several Latin American countries in the 1980s. They created problems in implementation of IMF programs because of large movements in other items net in the balance sheet of central banks [Leone, 1993]. In some of these countries, central bank losses were larger than the consolidated budget deficit and comprised a substantial part of the reserve money [Beckerman, 1995, Rodriguez, 1994, Marshall et al., 1994].

Accumulated losses are reflected in negative net worth of the balance sheet. It is commonly argued that a central bank can have a persistently negative. Stella (1997), central bank may operate well without capital, but large negative net worth may compromise bank's independence and interfere with its monetary policy goals. From a macroeconomic point of view, central bank losses are a problem if they endanger attainment of monetary targets. Moreover, as noted in previous section, losses caused by QFO can have distortionary effects. Losses can

be financed through creation of additional losses or through inflation. As losses represent an injection of liquidity, the central bank may have to sterilize its impact in order to achieve its money growth objectives [Vaez-Zadeh, 1991]. This vicious circle of rising losses and rising remunerated liabilities is accompanied by increases in interest rates in each round. Hence, losses of the central bank can erode the ability to conduct monetary management efficiently and lead to inconsistent use of monetary policy instruments. Vaez-Zadeh stresses that the higher the ratio of non-earning assets, the stronger the incentive for the central bank to generate a surprise burst of inflation to finance its losses.

At this point we might ask if it is appropriate to aggregate the financial results of the central bank and general government. Unfortunately, there are some important shortcomings to this approach. For example, the central bank may hide its losses with a drop in reserves and in the short run QFO may cause deterioration of the balance sheet structure and only with some lag be reflected in profit and loss account. Due to accounting convention, both measures bring different information. The budget deficit reflects the financing requirements, while the profit and loss account measures economic activity. Transfer of bank profits to the budget establishes non-tax revenue. However, for the central bank this is not expenditure, but a profit redistribution item. Hence, capital expenditure is considered as budget outlays, while depreciation of fixed capital is excluded. On the other hand, the central bank's profit and loss account includes amortization of fixed assets and excludes new gross investments [Teijeiro, 1989].

For the calculation of the central bank losses, the cash flow and capital approach may be applied. [Teijeiro, 1989, Vaez-Zadeh, 1991]. Leone (1993) extends this classification using an accrual measure. It is assumed that benchmark is when cash flow losses are reflected in a profit and loss account and capital losses are reflected in a reserve (net worth) account. Such solution would allow consolidating financial result of the central bank with budget balance. In practice, the central bank may substantially influence the reported ment of accrued interest. Practices associated with the valuation of foreign assets and liabilities are the source of distortions in the true financial position of the central bank [Leone, 1993]. This is particularly serious in countries with negative net foreign assets positions. Negative net worth may suggest that capital losses exist and will be reflected in the future when the liabilities are due. Teijero (1989) stresses that capital losses are usually not reported in the balance sheet until they are realized and stated in the profit and loss account. The monetary authorities may temporarily manipulate the interest rate, the growth of the monetary base or valuation of assets in order to lower their losses. Symptoms of such behavior

include a distorted interest rate structure, inflation and depletion of foreign exchange reserves. All these point to the need for transparent central bank accounts.

A good illustration comes from Argentina. Beckerman (1995) argues that the main engine of the 1989 hyperinflation in Argentina was the central bank's quasi-fiscal deficit. The profit and loss account was misleading and did not deteriorate. The reason for this was that an important part of the assets were loans to the state-owned Housing Bank, which was insolvent. Nevertheless huge paper profits that were never paid were generated by the accrued interest on these loans. It is widely assumed that cash measures influence inflation in the short run while net worth has an impact on long-run inflation performance. Ofcourse, negative net worth may immediately influence inflation, even if it is not reflected in cash profit (loss) measures, when people perceive a future increase in the rate of money creation and reduce their money demand [Leone 1993]. It should be also stressed that none of these measures accounts for possible cost of contingent liabilities.

The indirect result of cash losses is monetary expansion. The central bank may delay this effect by receiving new credit or delay in payments of liabilities [Leone, 1993]. These actions lead to the deterioration of the financial position of central banks. Sooner or later the central bank losses influence money creation or cause a loss of foreign reserves. As noted by Leone (1993), the limitations of monetary policy in the presence of central bank with weak financial position and significant cash-flow losses become evident when monetary sterilization is required to ensure monetary and exchange rate stability.

How to Profit from Central Bank Actions: (Sean Hyman on Thu, 04/23/2009 - 10:11)

Back in the good old days of central banking, banks just lowered and raised interest rates to take care of their economies. Interest rates could vary big time...anywhere from literally 0% to over 8%! However, that was then. Since the "good ole days" we've had a "credit crunch" and "global recession". It's not often that almost every major economy in the world goes into a recession around the same time. Therefore most central banks around the world have "shot most of their bullets" as they lowered rates to at or near 0%. However, just when you think they have done all they can do and their gun is just "clicking"...they reach down in their boot and pull out a knife...and the "battle is on" once again. Well, what is the rabbit that they are pulling out of their hat now? Quantitative Easing...What is that? When they've lowered rates as much as they can in an attempt to make money as "cheap" as they can, they crank up the printing presses and make more money.

You see, that tool hasn't always existed. Back in the day, money represented something. It was backed by gold in the U.S. and Switzerland, etc. Even many countries that didn't have their currency backed by gold had their currencies pegged to the dollar which was backed by gold. So there was "substance" and "stability". Well, Richard Nixon fixed that by taking us off of the gold standard. Why? I believe it was to they could have the "right" to print money like a "mad man"...and sure enough, they've been doing it ever since. So you may think that since the U.S. has had a history of printing more money since the 1970s, that it should be no big deal right? Wrong! Before, they printed money like a river. Today they are printing money like the "raging rapids". But this "printing of money" used to be more of a habit of the U.S. Fed more so than for other central banks around the world. However, in light of the global recession and the credit crunch, they've almost all hopped on the "money printing wagon".

Quantitative Easing: The Central Bank's Final Rabbit to pull out of the Hat. So who's involved in this "Quantitative Easing"? Well of course the U.S .is...that's no surprise. They are the masters at it. They're printing \$300 billion. However, the U.K. has hopped in as well. They've dropped rates to the lowest they've ever been in their entire 300+ year history. Now they have printed over 75 billion pounds thus far. Who else has jumped on the band wagon? Canada! Yeah, they call it their "insurance policy against unforeseen economic risks". Yeah, in other words...they don't need it now but they're going to go on ahead and do it anyway, just in case! Sometimes I feel like these central banks are like little kids. Johnny's parents let him stay out until 11pm. Why can't I? Ha-ha! Instead, Canada is saying, "The U.S. and U.K. get to print money, why can't we?" Meanwhile, the SNB (Swiss Central Bank) has intervened in its currency to drive down the value of the franc across the board but in particular to the euro (EUR/CHF). So they are selling francs and doing a little printing themselves. The Bank of Japan didn't want to be left out either. They printed over 21 trillion yen!

So what's a currency investor to do amidst all of these central banks "watering down" their currencies by printing even more? There are a few things you can do.

Central Bank	Action Taken	Date Announced
BoE	Initiated Purchases of (75 billion in Gills	March 5
SNB	Begins Purchases of Swiss Denominated Bonds Issued by Private Sector	March 12
BoJ	To Increase Purchases of Government Bonds to JPY 21.6 Trillion From 16.8 Trillion	March 18
Fed	Initiates Purchases of \$300 Billion in Long-term Treasuries	March 18

First, you can go back to the “real” currency: gold. Gold is a great place to go when everyone is willingly driving down the value of their currencies. It retains its value and even can go up when central banks lose their mind like they are doing right now!

Trading managed currencies: Exploiting central bank policies to make a profit. Managed currencies are those such as the Singapore and Hong Kong dollars, the Chinese Yuan, the Russian ruble, where the Central bank doesn't control the day-to-day fluctuations of the currency, but attempts to manage the direction of the trend by periodical interventions. The interventions are usually formulated through a floating or fixed currency band where the price is allowed to move within a range around a central point which is set by the Central bank. Usually, only those central banks or monetary institutions with a significant reserve accumulation can aim to manage their currencies effectively, as countering the actions of the market can be costly. The midpoint and the percentile range within which the price moves are sometimes held as a secret by central banks, and sometimes they are public. It is also possible that the central bank possesses no solid numerical long-term plan for the price range, but moves as the fundamental data flow and the political authority dictate. The policy choice is a secret in the case Singapore, is open in the case of the Hong Kong dollar and is partially public according to data in the cases of both the ruble and the Yuan.

Before further explanation, let us say that the predictive power of government policies tends to diminish during periods of volatility and economic turmoil. Central banks are not run by wizards with crystal balls, and usually they do not possess confidence or willpower greater than that possessed by the experienced trader. As a result, policy errors, zigzagging, and conflicting signals generate a lot of noise through which the trader must wade his way to success. The word “managed” in the phrase managed currency encapsulates the core of our strategy in trading this section of the market. The authorities make a commitment not to allow their currencies to move beyond the limits of a band, and they are ready to intervene when such a movement occurs as a result of chaotic market action. And, to the further benefit of the trader, newspapers, forex websites, and market news providers all declare the presence of central bank authorities when they do intervene. In many cases, the central banks also encourage the publication of their presence as they seek to intimidate and discourage those who want to counteract their policies. All that the trader would have to do to profit from such interventions is noting the direction of the intervention, and acting in accordance with it. Thus when we know that the technical indicators are showing extreme values (for instance RSI is at 20 or 80), there's news flow speaking of

intervention, and the central bank has already made its intention to prevent extreme price fluctuations clear, the trader can, with great confidence, make a counter-trend move with a reasonable stop-loss order, and expect to return a meaningful profit. This is a proven and well known method, with very high odds of success.

The behavior of the Monetary Authority of Singapore between October 2007 and April 2008 provides countless profitable examples for this method. In many cases where the RSI registered extreme values, the MAS would intervene, and as traders used the opportunity to pile in, large amounts of profits were made. Counter-trend interventions by MAS were usually easily detectable because of the very large movements in spot within seconds, and they were also noted by Bloomberg and financial news providers. Conversely, between November 2007 and April-May 2008, the People's Bank of China allowed the yuan to appreciate in a very regular, and predictable fashion, providing currency traders with a unique opportunity to register risk free profits. Because the central bank manages volatility in a punctual and strict fashion, the risk of any significant reversal was almost non-existent, and policy direction was communicated clearly and decisively by the chief of the institution.

Where do the pitfalls of this method lie: Obviously, *the first and foremost* obstacle to the success of a central bank is insufficient reserves, or lack of political will. Usually, a central bank will do all that is in its power to ensure credibility but if the market does not find its declarations credible, it has the power to invalidate the schemes of the institution. Similarly, markets are quick to punish those nations where financial policies are and improvised and revised in response to temporary developments. In spite of all this, given the very high level of uncertainty that the forex trader must be used to live with, following interventionist central banks can be a relaxing experience.

Currency interventions are especially difficult when they occur on an isolated basis against prevailing market conditions with insufficient reserves. Given how liquid and vast the forex market is, only exceptionally reserve-rich nations, like China or Singapore, or those with little need of external financing, like Saudi Arabia, can be confident that they have the clout to make their interventions work. On the other hand, markets treat those few Central Banks with respect, and they are unlikely to suffer from short term shocks, and their interventions and currency policies have credibility that is not found in other, less financially sound nations.

To repeat, managed currencies can be a source of great profit if they are traded with patience and consistency. The risks involved are usually much lower than

those faced when trading floating currencies, with the one caveat that currency crises can quickly wipe out the gains of a long-time if the trader is not sensible with his stop-losses. The principles of sound money management, and low leverage are still valid when trading this type of market. One should avoid bubbles, and it's not a good idea to chase excessive price movements, especially because the managed currencies tend to absorb a lot of tension by resisting market pressure, and if they break, the reactions can be very violent and fearsome.

It is strongly advised that the trader should concentrate on one or two managed currencies; if that is the method he would like to employ, to absorb the policy choices and principles of the Central Bank in question, and act in accordance with global developments. The transparency and independence of the Central Bank are both exceptionally important, because we would not want our guiding institution to zigzag or bow to political power, in essence invalidating its statements and policy declarations. Singapore and HK are good choices to begin trading this method. Here is a list of some currencies with their Central Banks and their policy preferences.

USD/SGD: Controlled by the Monetary Authority of Singapore, this pair is one of the more predictable and easier for those who prefer this strategy. Because of the status of Singapore as an importer of necessities like food, the monetary authority of Singapore aims to control inflation through the currency rate, and its policies are regularly and clearly communicated at its website.

USD/CNY: Controlled by the People's Bank of China, the yuan's value depends on two important factors: the trade surplus of China versus the Euroland and the United States, and the unemployment situation of China's rural regions. The central bank does not zigzag, however it's policies are greatly influenced by the supreme leadership of the nation and their relations with the US government. PBoC allows the yuan to appreciate at times of economic boom and inflation, and generally holds it stable during recessions and economic turmoil.

USD/HKD: The HKD is pegged to the US currency at 7.8, but is allowed in a band of 7.75 to 7.85. Hong Kong's economic policies are influenced greatly by developments in mainland China, but the nation has a currency board policy, and is mostly independent in its policy choices. The nature of the peg suggests an almost risk free trade in buying the HKD at 7.75 and selling it as it appreciates.

USD/RUB: The ruble is managed by the Central Bank of the Russian Federation. Its policy choices are determined by Russia's external balance, and the price of oil and other commodities.

Should Central banks profit from their intervention operations: The near-universal answer is no, but it certainly helps their own confidence if they do. By buying or selling bonds or currencies, central banks are trying to help overall macroeconomic conditions rather than to make a quick buck for the taxpayer. However, the very fact that the central bankers themselves like to harp on about the profitability (or otherwise) of intervention indicates that they get quiet satisfaction from being able to call the market right (David Marsh, July 26, 2010). Cashing in on intervention). We can see three significant examples of this during the present bout of capital markets uncertainty. The Bank of England has made nearly 10 billion pounds in paper profits by buying U.K. government bonds as part of post-crisis efforts to pump money into the British economy through quantitative easing (QE).

Europe's bank stress tests not so tough: Europe's banks largely passed tests designed to show how they'd fare if the region had a double-dip recession. But there's still questions being asked about the toughness of the tests and inconsistencies between countries. This phenomenon began in March 2009 and involved purchasing nearly 200 billion pounds in gilts. Especially since the beginning of this year, U.K. governments bonds have been regarded as safe havens during the crisis of confidence affecting the euro — pushing up their value and helping the Bank to a tidy paper profit. Little of this was expected at the beginning of 2010. The view in financial markets at that time — remember Bill Gross's combative comments from Pimco, a unit of Allianz SE (**AZSEY 10.42, +0.29, +2.86%**), about the U.K. bond market being on a “bed of nitroglycerine”? — was that the U.K.'s deteriorating fiscal position would drive gilt prices lower. But the crisis in Economic and Monetary Union (EMU) changed all that. And this was the phenomenon that has affected the Swiss, too — although in the opposite direction to the U.K. central bank.

The Swiss National Bank: one of the most respected central banks in the world — confirmed last week that it is nursing nominal losses in the first half of 2010 as a result of large-scale purchases of euro to head off a debilitating rise in the Swiss franc. Despite the intervention, the euro fell substantially in the first half of 2010 — leaving a large-scale deficit for the normally ever-so-tidy Swiss. The SNB is a publicly listed entity on the Zurich stock exchange. Public shareholders — cantons and cantonal banks — hold around 55% of the 25 million francs worth of the stock with most of the remainder owned by private individuals. Swiss municipalities are used to earning plentiful dividends from the SNB's operations — but the payouts this year may be a lot less generous.

The SNB's operations are a bizarre highlight of long-running Swiss efforts during past decades to check the Swiss currency's well-nigh inexorable ascent. Massive currency intervention this year has resulted in the SNB becoming probably the world's large holder of euros, measured against the overall size of foreign exchange reserves. According to data published last week, more than 70% of the SNB's foreign exchange assets are in euros, versus 46% five years ago. The SNB holds a total of 160 billion francs worth of the single currency, more than five times the amount last summer. As one further episode of EMU tribulations, the European Central Bank, meanwhile, has purchased more than 55 billion euros worth of weaker euro members' government bonds (mostly from Greece) since May. As a result, the ECB is sitting on a vulnerable bond portfolio, full extent of which will probably never be known. It is quite likely that the ECB will sell off its bond holdings to the new Luxembourg-based European Financial Stability Facility (EFSF) set up by euro members to protect the weaker members. EMU solidarity being what it is, it's more than conceivable that member governments will agree to foot the bill for any losses that ensue — leaving the ECB's balance sheet intact. That would be fair enough. After all, the U.K. Treasury agreed to indemnify the Bank of England for any losses that ensued from the quantitative easing program.

But do they matter: Charlie Bean, the Bank's deputy governor for monetary policy, stated last October that the aim of QE was not to make profits. "The aim of Quantitative Easing and the Asset Purchase Facility is to help the Monetary Policy Committee achieve its macroeconomic objective, namely hitting the Government's inflation target without generating undue volatility in output." He also pointed out that whether the Treasury ends up with a profit or a loss from the Asset Purchase Facility represents only a small part of the picture. "Gilt yields will be lower than they would otherwise have been during the period that they are held in the Asset Purchase Facility, so reducing the cost of financing a given budget deficit. This needs to be factored into any calculation of the implications for the public finances." At the ECB, they seem to take a more narrow view of the profit-and-loss issue. Lorenzo Bini Smaghi, board member for international operations, in April last year went through six reasons why the ECB seems unlikely to adopt large-scale purchases of government bonds as decided by the Federal Reserve and Bank of England. He voiced some very real doubts, including whether an increase in the monetary base results in easier monetary conditions; whether banks would actually pass on the additional liquidity in the context of de-leveraging; whether inflationary expectations would rise; and whether central banks would suffer large losses by buying a high prices and selling at low ones. The ECB of course says its relatively

low purchases of Greek and other governments' bond are nothing compared to the large QE programmes launched by the U.K. and U.S. central banks. But the ECB will none the less be very happy to offload the bonds as soon as it can, probably to the Luxembourg EFSF. And if European governments are kind enough to allow the central bankers to make a profit (or at least avoid a loss) on the transaction, then the ECB, for one, will be delighted. *David Marsh is the chairman of management consultancy SCCO International and co-chairman of the Official Monetary and Financial Institutions Forum.*

US Federal Reserve System: US Central Bank earns largest profit in 96-year history (January 12th, 2010 Posted in Banking News. This week the Federal Reserve reported astounding profit figures for 2009. According to the latest report conducted by Reuters, the Central Bank brought in an estimated \$45 billion last year thanks to the aggressive purchasing of bonds, reduction of interest rates and stimulation of growth. The Fed is funded through its own operations and returns its profits to the treasury and 2009 marks the largest profit posting year by the Central Bank in its 96 years of existence. The second largest return to the treasury happened in 2007, with \$34.6 billion returned. The article stated that, "By the end of 2009, the Fed owned \$1.8 trillion in U.S. government debt and mortgage-related securities, up from \$497 billion a year earlier." It continued on to claim that, "interest income on the investments was a major source of Fed profits." This news may seem contrary to our current recollection of the Central Bank's status given the recent purchases of such failing financial institutions as Bear Sterns and AIG (American International Group), however the recent report claimed that the Fed received \$4.7 billion in interest payments from the loans made to those institutions in 2009.

Reserve Bank of India: Net Profit for the quarter ended December amounted to Rs. 306.45 crore, a dip of 13.3% over the corresponding figure of previous year, the reason being the net profit of the Q3 of 2008-09 includes write back of depreciation in the investment to the tune of Rs. 115 crore where as Bank had to provide for additional depreciation of Rs.144 crores in the current quarter. But for the same the growth in the profit in current quarter would have shown a growth of 60%. The bench mark yield in current quarter has hardened to 7.58% from the level of 7.15% in September 09. In the corresponding period of Dec.'08 the yield had softened to 5.25% from previous level of 8.64% in Sept.'08 and thus the depreciation in the current quarter had higher impact from adverse movement of yield. Performance Highlights of the working results as on December 2009 are as under:

Business Expansion: Aggregate deposits of the Bank have increased to Rs.155648 crore as on December 31, 2009 in comparison to Rs. 118782 crore as on December 31, 2008 registering a growth of 31.0% on YOY basis. The CASA Deposits has grown from Rs.41513 crore as on December 31, 2008 to Rs. 46594 crore as on December 31, 2009 with a growth of 12.24% on YoY basis. The gross advances have increased to Rs.91074 crore as on December 31, 2009 from Rs.81467 crore as on December 31, 2008 at a growth rate of 11.8% on YoY basis. Business per branch has increased to Rs.64.17 crore as on December 31, 2009 compared to Rs.54.30 crore as on December 31, 2008, registering a growth of 18.2 % on YoY basis. Business per employee has increased to Rs.7.13 crore as on December 31, 2009 from Rs. 5.58 crore as on December 31, 2008, registering a growth of 27.7% on YoY basis. The investments has increased to Rs. 54338 crore as on December 31, 2009 from Rs. 37025 crore as on December 31, 2008 at a growth rate of 46.8% on YoY basis.

Capital Adequacy: Capital Adequacy of the Bank stands at 11.83% (Basel I) as on December 31, 2009 in comparison to 10.02% as on December 31, 2008. As per Basel II the CRAR stands at 12.58% as on December 31, 2009 in comparison to 10.43% as on December 31, 2008. (Tier I – 7.14% and Tier II – 5.44%)

Asset Quality: Net NPA stood at Rs.661 crore as on December 31, 2009 from Rs.945 crore as on December 31, 2008 improved by 30.05% on YoY basis. The percentage of net NPA as on December 31, 2009 is 0.74% of net advances. NPA Coverage – cum- Provision is 73.33% as on December 31, 2009

People's Bank of China: *2007 Profits:* China's trade surplus was \$22 billion in November, the nation's second-largest after a record \$23.8 billion in October, data from China's customs bureau showed. China's trade surplus may have grown by almost two-thirds to a record \$168 billion during 2006, the customs bureau indicated Dec. 7. Investments in the stock of Chinese commercial banks listed in overseas stock markets may have further boosted central bank 2006 profits, according to Green. In 2007, the central bank may earn still more money if it lowers its benchmark interest rate to discourage inflow of overseas money, Green wrote. "2007 will likely be another profitable year for the PBOC," Green wrote. The return on U.S. Treasuries notes may increase this year if the Federal Reserve lowers its benchmark from 5.25 percent, according to a Bloomberg News survey of the 22 primary government security dealers, which trade with the Fed. Two-year U.S. Treasury notes will return 5.1 percent and 10- year notes will gain 5.4 percent this year, according to the average forecasts of the dealers.

Hungary Central Bank: Hungary central banker sees lower bank profits (Reuters, Jan 28, 2009). The forint's weakening has not led to a rise in defaults on foreign currency loans so far but if non-performing loans rise it will cut banks' profits, the central bank's Deputy Governor Julia Kiraly said on Wednesday. The forint hit all-time lows against the euro last week at 291.30, a 27 percent fall since July last year, and has traded near that level this week, triggering concern over forex loans taken out by households in the past few years. 'The relation between the number of non-performing borrowers and the exchange rate weakening is not linear,' Kiraly told news portal www.hirszerzo.hu in an interview. 'The number of insolvent (borrowers) has not increased significantly so far, there are however calculations on how the proportion of non-performers rises at certain exchange rate levels,' she said. 'The banking system's earlier 20 percent return on capital will surely decline substantially, but for the time being we cannot see systemic problems more serious than that.' Foreign investors who keep almost 10 billion euros in forint-denominated government bonds, watch the National Bank of Hungary for signals that would show it is getting concerned by forint falls, which could indicate the end of interest rate cuts. The central bank has reduced its main rate by two percentage points since November to 9.50 percent, reversing part of a three percentage point hike in October to stem the forint's fall. It is seen cutting rates further to help the economy which is seen contracting by 2-3 percent this year, but analysts said a forint weakening beyond 290-300 versus the euro could make the bank worried. Kiraly said there will probably be foreign currency borrowers who become unable to pay their instalments 'but we should not forget that the same borrowers gained significant profits during the earlier forint firming.' She said the bank had no exchange rate target but was monitoring the movements of the currency. 'There is one single main rule concerning the exchange rate: watch, try to understand the drivers of changes and find the place of trends among the other trends of the economy,' Kiraly said.

Central Bank of Srilanka: Sri Lanka's profits and losses; a super profit making central bank is not good news (W A Wijewardena Apr 19, 2010). Two news items hit the headlines of media simultaneously last week. Both relate to the year 2009 and are sourced to the Central Bank Annual Report for the year. One is the news on the key state enterprises making colossal losses. The other is the news on Central Bank's making unprecedented profits. State enterprises making losses is bad news. But, Central Bank's making super profits, though it appears to be a good performance, is very bad news.

Public Enterprises Making Losses: The five big loss makers which were once categorised as the 'biggest monsters' by the Minister of Finance, plus the Sri

Main Findings of Safeguards Assessment

	<u>Transitional</u> <u>Procedures</u>	<u>Full</u>	<u>Total</u> <u>Identified²</u>	<u>Total</u> <u>Assessed²</u>	<u>Identified</u> <u>as Percent</u> <u>of Assessed</u>
Central banks assessed	25	26			
I. Non-existent or deficient external audits.	13	20	33	49	67
2 No, or delayed, publication of financial statements.	7	13	20	49	41
3. Poor controls over foreign reserves.	2	14	14	26	54
4. Inadequate accounting standards.	8	23	23	26	88
5. Deficient governance oversight.	5	20	20	26	77
6. Deficient internal audit.	1	23	23	26	88
7. Loopholes in governing legislation.	-	13	13	26	50
8. Inadequate accounting for IMF	2	9	9	26	35

Data as of February 8, 2002. Source: "Safeguards Assessments-Review of Experience and Next Steps" (www.imf.org/external/np/safeguards/2002/review.htm).

Lankan Airlines, have made operating losses amounting to whopping Rs. 48.6 billion in 2009. The detailed distribution is alarming: Postal Rs 2.4 billion, CEB Rs 7.4 billion, CPC Rs 12.3 billion, SLTB including the government subsidy, Rs 9.3 billion, Railways Rs 4.8 billion and Sri Lankan Airline Rs 12.2 billion. In addition, Mihin Air, government's pet budget airline, has made an operating loss of Rs 930 million on top of its previous losses amounting to Rs 3 billion absorbed by the government earlier. These numbers just present the difference between the current revenue and current expenditure of these enterprises before charging depreciation and writing off the unrecoverable debts. Hence, the net losses made by them must be much more than the amounts reported in the Central Bank Annual Report, but it will take some time for those numbers to surface because of the delay in publishing the audited final accounts.

Losses Have to be Funded by the Public: There is nothing new about public enterprises making losses and getting away with such losses with total impunity. In fact, they have been continuously in losses and those losses have been funded by the public through subsidies: for instance, according to the data provided by

the Central Bank Annual Report, the two transport enterprises, Railways and SLTB, have made operating losses year after year since 2000 amassing cumulative losses of Rs 31.3 billion and Rs 30.3 billion, respectively, by end - 2009. If they were two private sector firms, they would have by now been bankrupt and forced to close their business. However, all these enterprises have been able to continue their business with subsidies given by the government and loans raised from banks, especially from the two state banks, on the strength of government guarantees. Either way, it is the public who have to bear the burden of such losses eventually. Subsidies are directly funded out of the current tax revenue; defaulted loans are settled by the Treasury, again by issuing Treasury bonds making it a liability of future tax payers. Hence, the public enterprises making losses is undoubtedly 'bad news'.

Central Banks' making Super – Profits: If making profits by a public enterprise is good news, making super profits must be extra good news. Then, how can one argue that central banks' making super profits is very bad news. The answer is given by the Central Bank itself as a Management Statement attached to its final accounts. It says that the Central Bank's core objectives are the attainment of economic and price stability and financial system stability and the Bank's performance should be assessed on the basis of its attainment of these two goals and 'not necessarily its profitability per se'. The adoption of a profitability related approach by the Central Bank 'could result in the Bank pursuing profits while compromising its core objectives, since it has the unique ability to create its own profits through its monetary policy activities which could influence interest rates and exchange rates'. Many who read the Central Bank's final accounts tend to miss this clarification. What it says is that a central bank is different from other organizations and in a position to create its own profits, but at the expense of the objective of maintaining an inflation free world.

Central Banks can earn domestic incomes only by creating new money: This could be illustrated as follows. The only power which a central bank has got is to print money. It has to print money when it lends to government and commercial banks and when it buys foreign exchange from the market. Lending will enable the central bank to earn interest incomes in rupee terms; investment of foreign exchange will earn it returns in foreign currency terms. So, both will increase the bank's profit levels. But when it prints money more than what the public wants, there will be surplus money in their hands and, therefore, in order to reduce such balances to desired optimal levels, they will use that money on goods and services. If the supply of money is faster than the supply of goods and services which is the usual case, the excess demand for goods and services will put

pressure on the prices to rise. When this happens continuously over a period of time, it leads to inflation. By printing money, a central bank can make profits, but such money will invariably bring about inflation too. Thus, a central bank can make any amount of profits by printing money, but such profits are made by sacrificing its price stability objective.

A Central Bank should not Make Losses either: Thus, making super profits by a central bank is very bad news. This does not mean that making losses by a central bank is tolerable and acceptable. Such losses eventually have to be funded by the tax payers just like any other public organization. Hence, making both losses and making super profits by a central bank are not good news at all.

Polish Central Bank: Polish Central Bank at odds over 2009 profit Gabriela Baczynska and Pawel Sobczak July 9). Poland's government, battling to bring its gaping budget deficit under control during an economic downturn without hiking taxes, said on Thursday the central bank should transfer its 2009 profit to state coffers. But the central bank cast doubt on whether it would have any surplus to share, and analysts said they feared the political calendar — with elections due in 2010 and 2011 — could scupper the government's drive to put Poland's public finances in order. 'Avoiding tax hikes in 2010 is possible if the government's package finds presidential support,' Prime Minister Donald Tusk said after talks with President Lech Kaczynski, a rival. As well as proposing to divert the central bank's profit into the 2010 budget, the government also plans significant cuts in military spending and other accounting measures. Tusk told reporters the central bank would earn more than 10 billion zlotys (\$3.14 billion) this year. The finance ministry later said the figure could be as high as 19 billion zlotys. However, the central bank issued a statement saying its current financial plan did not anticipate any profit this year. Its governor, Slawomir Skrzypek, later told Reuters in a telephone interview that the bank would be ready to funnel its 2009 net profit into the budget, if it made one and on condition that currency risks allowed such a move.

'It's way too early to talk about the bank's profit as this hinges heavily on the exchange rate,' Skrzypek said. The defence ministry declined to say how much it might save by cutting spending on military equipment, now set by law at a minimum of 1.95 percent of gross domestic product (GDP). Earlier this week, the centre-right cabinet approved an updated 2009 budget, raising the expected deficit by nearly half to 27 billion zlotys (\$8.5 billion) despite deep spending cuts. The government, which has forecast economic growth of 0.2 percent this year, down from a previous estimate of 3.7 percent, has also started to squeeze billions of

zlotys in dividends from state-owned companies in an effort to reduce the budget gap. President Kaczynski, a right-wing populist who has often vetoed the government's pro-market reforms, reacted guardedly to Tusk's proposals during their talks. 'The president showed a will to cooperate and did not say the proposals were impossible to reach,' said Piotr Kownacki, the president's top aide who also attended the meeting. Tusk, Poland's most popular politician, is widely expected to run against Kaczynski in a presidential election set for the autumn of 2010. Tax hikes would likely dent Tusk's support.

Analysts were skeptical about the government's plan to tap into the central bank's profits to balance the books. 'I don't expect that the central bank, which is an independent institution, would want to pass its profit to the government, given the political calendar and conditions,' said Grzegorz Maliszewski, chief economist at Millennium Bank. 'I am therefore skeptical about the whole plan. This means the budget deficit may widen significantly in 2010,' he added. The European Commission expects Poland's general government budget deficit to reach 6.6 percent of GDP this year and 7.3 percent in 2010, well above the 3 percent ceiling set by the EU's Maastricht Treaty for aspiring euro members such as Poland. The government, which had aimed to adopt the euro in 2012 but now admits there will be some delay, has forecast a 4.6 percent budget deficit in 2009 due to slowing economic growth. The central bank did not provide any money to the state budget this year. Its 2008 profit was used to cover the central bank's losses from 2007.

Central Bank of Kenya: Central Bank of Kenya's profit by almost three times at June 30, 2009. Proceeds from the controversial sale of Grand Regency Hotel and gains from revaluation of foreign currencies have pushed up Central Bank of Kenya's profit by almost three times. Financial results contained in this year's annual report shows that the government bank recorded Sh23.2 billion in profit for the year ending June 30, 2009 against a profit of Sh8.9 billion recorded in similar period last year. CBK does not pay taxes but will be paying Treasury, its sole shareholder, Sh7.2 billion in dividend almost doubling the Sh4 billion it paid for last financial year. "This substantial higher performance over the previous year is due to foreign currency translation gains that amounted to Sh13.5 billion in the year under review..., and proceeds from sale of Grand Regency Hotel amounting to Sh3.1 billion," reads a management statement contained in the report.

The revelation that the sale of Grand Regency Hotel, now Laico Regency, earned the government Sh3.1 billion and not the Sh1.8 billion - as claimed by Lands Minister James Orengo forcing the then Finance minister Amos Kimunya to resign - is bound to re-ignite the debate on the motive behind the claims. Prior to

the sale, CBK was holding the hotel as security against monies Uhuru Highway Development Company owned by Mr Kamlesh Pattni, was to pay the bank. Central Bank was then accused of faulting the Public Procurement Rules by not advertising the sale of the hotel and Mr Kimunya of lying to Parliament on whether the hotel had been sold.

New Zealand Central Bank: New Zealand central bank posts huge profit; govt. gets \$630m (Girish Kumar Guha on Fri, 10/09/2009). The central bank of New Zealand will provide the government with a dividend worth NZ\$630 million as it secured a substantial boost in net profit that soared to NZ\$906 million as compared with \$535 million in the preceding year. Previous year, the central bank had paid a dividend of NZ\$168 to the government. Alan Bollard, governor of the bank said in a statement, "This is a strong financial result which reflects abnormally large changes in market conditions." The bank also witnessed a jump in its staff expenses from \$22.3 million previous year to \$24.3 million this year. The central bank of New Zealand has slashed interest rates to 2.50 per cent and vowed that it would not hike the rates until late next year. Slashed interest rates in 2009 led to valuation gains worth \$187 million against a loss of \$7 million last year. Central bank's equity was reported at \$3 billion on June 30.

Monetary Authority of Singapore: Singapore's central banks 2006/07 profit more than triples at Mrch 31, 2007. Singapore's central bank on Wednesday said its net profit more than tripled to S\$3.846 billion (\$2.6 billion) in the year ending March 31, 2007 due to higher interest income and investment gains. "Net profit of S\$3.85 billion for the year resulted mainly from interest income and gains from asset markets, partially offset by the foreign exchange impact from the strengthening Singapore dollar," the Monetary Authority of Singapore (MAS) said in its 2006/07 annual report, published on Wednesday. Last year, the city-state's central bank reported a 68 percent slump in 2005/06 net profit to S\$1.22 billion which it said was due to a rise in global interest rates and stronger Singapore dollar. Total income for the year to March 31, 2007 climbed to S\$5.18 billion from S\$2.03 billion a year earlier. Income from foreign operations jumped to S\$4.84 billion from S\$1.79 billion, while income from domestic operations climbed to S\$331.2 million from S\$233.4 million.

Central Bank of Latvia: The European Central Bank has urged Latvia to rethink plans to siphon off half of its central bank's profits to help rebuild the country's battered finances. Latvia's government plans to up the amount of central bank profits it takes, to 50 percent from the current 15 percent. In a legal opinion published on its Web site on Monday, the ECB warned the move risked hurting

Latvian central bank independence and wiping out funds designed to be a financial safety net for country's troubled banks. "The use of central bank financial resources may be counterproductive from the credibility point of view if confidence in the financial stability and independence of the National Central Bank is undermined," the ECB said. "It is important to shield the rules related to the distribution of profits from third-party interests and to ensure a legal framework that provides a stable and long-term basis for the central bank's functioning."

Latvia is hoping to avoid state bankruptcy and devaluation of its currency as it struggles to cope with the financial crisis. The ECB warned the plan to divert central bank profits could leave the Latvian central bank in deep financial water, owing more than its assets are worth. "In principle it is not optimal for the central bank to create reserves only after transferring a large portion of its profits to the Treasury," the ECB said. "Should Latvijas Banka run into a situation of negative equity in the future (i.e. losses exceeding currently accumulated reserves), it would be hard to rebuild it out of the stream of future 'net' earnings under such an arrangement."

Section-V: Financial Transparency and Compliance to IFRS and IAS

Increasing interest in financial transparency accompanied a widespread adoption of rule based macroeconomic policy frameworks in the early 1990s, The U.S. Budget Enforcement Act of 1990, the 1992 Maastricht Treaty, later to be followed by the Stability and Growth Pact's deficit and debt limits, as well as a movement toward transparency in New Zealand and Australia raised the profile of fiscal accounting while pressure also increased to enhance the openness of monetary policy. In the European Community this was accompanied by a harmonization of national statistical systems in part to allow a common measurement of national fiscal deficits in general and state aid in particular.

Later in the decade, the sustained growth in 'private capital flows to emerging markets, the Asian and Russian crises and the emergence of calls for a new international financial architecture accelerated an already evident trend toward greater transparency in the accounts of governments, central banks, and the financial sector. Conventional wisdom now stresses the importance of information revelation for the functioning of markets and for the reduction of risk premiums for sovereign borrowers. There is as well a strong conviction that the" ... credibility of fiscal rules and objectives is strengthened if such measures are

accompanied by enhanced fiscal transparency, as this openness complements a rules-based approach in three ways: by removing any tendency to be nontransparent to meet rules; by facilitating judgments of actual fiscal performance against rules, which makes transparency an essential requirement for rules to be effective; and by allowing justifiable flexibility in the application of rules.

- The IMF has developed standards and a code of good practices on transparency in fiscal and monetary and financial policies, using them to review the policies of dozens of member countries to date.
- Revisions to international accounting standards applicable to financial institutions have also been made, for example IAS 39 “Financial Instruments: Recognition and Measurement” became effective January 1, 2001, which, inter alia, broadens the application of fair value accounting. A working group of national standard setters is currently discussing the idea to apply fair value to all financial instruments.
- The IMF has worked with member countries to improve their transparency as evidenced by technical assistance and seminars (see for example “Transparency in Central Bank Financial Statement Disclosures” IMP WP/001186 which explicitly discusses the applicability of IAS to central bank accounting).
- The IMF has also actively promoted central bank transparency through its “safeguard assessment” program introduced in 2000 to address concerns that some central banks utilizing the Fund’s resources lacked transparency and posed a risk as intermediators of Fund credit. The safeguard assessment examines the adequacy of five key areas pertaining to the central bank external audit; internal audit; legal independence; financial reporting; and internal controls. An essential requirement is that countries publish annual central bank financial statements that are independently audited in accordance with internationally accepted standards.
- The Fund has also completely revised its basic fiscal accounting framework with the introduction of the *2001 Manual on Government Finance Statistics* to bring it in line with the U.N.’s *system of National Accounts* and to address concerns raised over the years (the previous edition dated from 1986) that it had serious analytical inadequacies. In particular the 2001 Manual changed the basis of accounting from cash to accrual and established a fully integrated system of accounts including

stock data. The previous edition of the *Manual limited* stock data to debt liabilities.

- A greater emphasis has been placed on adjusting fiscal balances for the distorting impact of inflation, particularly important for the quasi-fiscal operations of financial institutions.
- Some central banks have moved toward full cost recovery for services and more clearly identifying the cost of undertaking other activities thereby enabling a closer examination of their cost efficiency. While significant progress has been made and the profile of the issue has been considerably raised during the last several years, certain controversial points remain and improvements in individual countries have been sporadic. IMF safeguard assessments have identified a number of problems that have been or are being addressed in the central banks assessed but these constitute only a subset of member countries. In particular, 88 percent of assessed central banks were identified as having had inadequate accounting standards .

Two particular broad issues are whether IAS are fully applicable for central banks and the appropriate level of central bank capital. Many banks have not implemented International Accounting Standards, in particular the U.S. Federal Reserve and the European Central Bank. The essential issue is whether there is something special about central banks which invalidate certain elements of IAS designed for commercial enterprises. The reasons given for why central banks are not done justice by IAS include: they are not profit maximizing institutions and indeed the profit outcome comes quite late in the central bank's policy priorities; central bank shares are never exchanged for "market" value and they are immune from bankruptcy; as a matter of policy they may be subject to significant economic risks, e.g. open foreign exchange positions; they are part of the public sector and their accounts may represent only a part of the relevant balance sheet, e.g. central bank losses on its holdings of government securities are exactly offset by government gains and vice versa. Central banks have also argued, as have hedge funds, that they should not be subject to the disclosure requirements of publicly held companies. While there is some merit in these arguments, they generally do not stand up well to good financial reporting requirements. The next section will focus on the key issue in measuring the central bank's fiscal impact-accounting for profit distribution.

Profit Distribution: Transparency in profit calculation and distribution is important for several reasons. As central bank profits transferred to the treasury are considered budget revenue, it is important that they be distinguished from

transfers more properly classified as credit to government or changes in government equity in public corporations. It is also important to understand whether profit distribution follows the basic principle of accrual accounting, i.e., do profits transferred to government correspond roughly in time to the activity that earned the profit. A further key fact is that in the vast majority of countries, the treatment of profit and losses is asymmetric, namely that profits are transferred to government but losses are not covered, i.e., losses lead to a reduction in capital or reserves. This asymmetry makes problematic judging overall public sector finances.

Progress in improving the transparency of central bank profit determination has come with a general improvement in accounting and in some cases with recapitalization of the central bank-which brought to an end a chronic problem with losses. The IMF, in its surveillance work has for certain countries long found it important to report the overall public sector deficit-including the cash losses of the central bank-in its assessment of the fiscal stance. The *2001 Manual on Government Finance Statistics* also covers these issues.

The European Union has made an important contribution through its convergence requirements for central banks wishing to participate in the monetary union. Among the required features of national legislation is financial independence of the central bank and among the specific requirements is that national central banks “in those countries where third parties and, particularly, the government and/or parliament are in a position, directly or indirectly, to exercise influence on the determination of an NCB’s [National Central Bank’s] budget, or the distribution of profit, the relevant statutory provisions should contain a safeguard clause to ensure that this does not impede the proper performance of the NCB’s ESCB-related tasks”. Ireland and Finland amended their legislation to meet this requirement while the European Commission recently stated that Swedish legislation is incompatible with the financial independence of the Riksbank and, in that respect, assessed it as not compatible with the EC Treaty and the ESCB Statute. The EU requirements are also having an impact on the relevant legislation of states hoping to become members of the EU later this decade.

Outside Europe, these issues continue to be discussed in various contexts. In 2001, the Central Bank of Venezuela paid unrealized foreign exchange gains to the government which, in its turn, has not fully recognized the cost of the bank rescue operations indirectly financed through the central bank. The Central Bank Accounting and Budget Committee, formed of representatives of various central banks in the Americas, has yet to adopt standards for determining profits and on

the appropriate level of central bank capital. There have also been serious problems in a number of the newly independent central banks coming out of the formerly socialist countries. The 2000 IMF ROSC on Azerbaijan, for example, notes that the profit transferred by the central bank to the budget is not determined according to objective criteria but is negotiated at the time of budget preparation. In the United States, the General Accounting Office acted transparently but questionably when it took the position in 1996 that transfers of accumulated Federal

Reserve surplus to the Treasury should be counted as fiscal receipts and reduce the budget deficit in the year received. This discussion followed the 1993 Omnibus Budget Reconciliation Act which required the Federal Reserve to transfer from surplus US\$106 million and US\$ 1 07 million in fiscal years 1997 and 1998 respectively which reduced the federal government's projected deficit in those years. Congress acted again in late 1999 by amending the Federal Reserve Act to require a transfer of Federal Reserve surplus to the Secretary of the Treasury of US\$3 .752 billion during fiscal year 2000 and additionally forbade the Fed from recouping the loss in that fiscal year. Because the Government's and the Federal Reserve's fiscal years are not synchronous, the Federal Reserve was nevertheless able to replenish most of its surplus through retained profits by the end of its own fiscal year. One of the more contentious issues in profit determination is the timing of income and loss recognition. Two sources of particular controversy are provisions and revaluation of assets owing to market price or exchange rate fluctuations. IAS 39 requires loans and receivables to be written down if viewed as impaired either directly or through provisions. Certain central banks, for example the Bank of Japan, do maintain provisions for possible loan losses and carefully describe them as suggested in Sullivan (2000)- "Disclosure of reserve information is very important in central bank circumstances to allow users to understand the reasons why reserves are maintained. This disclosure should be accompanied by a description of the nature and purpose of each reserve class".

In some cases, however, reserves have been utilized to cushion the treasury from a deterioration of central bank finances. The case of Portugal is interesting in this respect. Owing primarily to the cost of remunerating required reserves and absorbing excess liquidity through the use of its own paper, the central bank's operating results were negative each year from 1988 through 1992. Nevertheless, the Bank officially reported positive net income and dutifully paid a dividend to the government by relying extensively on the reintegration of general provisions that had earlier been established to cover potential losses. Such provisions in the

balance sheet fell from about 7 percent of GDP in 1986 to zero in 1993 following the Bank's operating loss of 0.7 percent of GDP the preceding year. Rather than using provisions to capture the economic impact of a loss in the Bank's income statement at the time it occurred, this use of provisions effectively did the opposite— reducing the profit transfer in the years income was earned and increasing it in years when losses occurred. This example points to the importance of a strong independent external audit function and the application of the “substance over form” principles of IAS.

The Czech National Bank has made use of provisions to account for anticipated losses in connection with commercial bank rescue operations and for various items in connection with the transfer to Government (at nominal cost) of claims resulting from the dissolution of the former State Bank of Czechoslovakia. This has not, however, meant that the losses have had their impact immediately on treasury receipts or that transfers were required from Government. For example, despite a profit of CZK 2.5 billion (roughly US\$50 million) in 2000, the need to cover accumulated losses meant that no transfer to Government was made. The remaining accumulated loss of CZK 15.9 billion is to be made up out of future profits. In many of these cases the central bank may be viewed benignly as a fiscal buffer, or malevolently as a black hole, enabling government to elude fiscal constraints. While there are clearly cases where flexible or fuzzy fiscal rules are preferable to strict and inflexible ones, intentionally compromising the integrity of the underlying data seems very ill advised. (For an interesting discussion of these issues, see Milesi-Ferretti (2000)).

The treatment of asset revaluations in the income statements is often significant. Actual practice is quite varied with the Fed taking all gains and losses, realized and unrealized, to the profit and loss account and distributing profits on a weekly basis. The European Central Bank posts unrealized *gains* from price or currency revaluation to a revaluation account shown on the liability side of the balance sheet and hence they are not shown as income. Unrealized *losses* are reflected in the profit and loss account if they exceed previous revaluation gains registered in the corresponding revaluation account. These losses are not reversed in following years against new unrealized gains. IFRS calls for a more complicated approach. Only assets classified as “held for trading” and “available for sale” are required to be revalued for price changes with the former adjustment taken to the income statement. In the latter case the enterprise has a once and for all choice as to whether it wishes to reflect the changes in the income statement or post them to a revaluation reserve until the gain/loss is realized. Assets classified as “held to maturity” and “loans and receivables” are not revalued. For revaluation owing to

exchange rate changes, IFRS 21 calls for all gains and losses on “monetary assets” to be recognized in the profit and loss statement. “Nonmonetary assets” are not revalued.

The implications of IFRS 21 are rather serious as no flexibility is provided and central banks often have large open positions in foreign exchange as a matter of policy. Central banks also have expressed several concerns about paying out unrealized gains. One seems to be based on a notion of negative autocorrelation of price and exchange rate changes and a desire to smooth the variance in profit transfer. Another is concern with the monetary impact of paying out nonmonetary income which is implicitly a concern about fiscal profligacy as there would be no monetary impact were the government to save the profit at the central bank. A further question is whether it is correct to increase fiscal receipts only because central bank assets increase in value when the government’s liabilities are likely to have risen at the same time-if the central bank’s portfolio is mostly government debt or the government has foreign exchange denominated debt.

While Norway and Iceland bring realized and unrealized foreign exchange gains and losses to the profit and loss account-as did Finland prior to the EMU-they have established mechanisms to smooth the transfer of profit as does Sweden (guidelines for distribution of the annual result stipulate that the annual transfer to the Treasury shall not be affected by fluctuations in the value of the Swedish krona). The mechanism also effectively makes capital and reserves a function of the net open foreign exchange position. These countries in particular are exposed to large potential losses from foreign exchange movements. For example, in comparison with Canada and the United States, a large portion of the Norges Bank assets are international reserves and other foreign assets-82 percent (end-2000). On the liability side, notes and coins in circulation account for only 16 percent. As a result, the Bank usually has net domestic interest expenses and net foreign interest revenue. Changes in the market value of its security portfolio as well as changes in exchange rates lead to volatile financial results. For instance, the 2000 profit of NOK 14 billion contrasts with a previous year loss of NOK 3 billion.

The Norges Bank undertakes to minimize the significant fluctuations in its profits in two major ways. First, part of its foreign securities portfolio is structured so as to hedge the government’s foreign debt (due to be fully retired in 2004). Second, it maintains reserves amounting to 5 percent of the Bank’s holdings of domestic securities and 25 percent of its net foreign exchange reserves excluding the government’s petroleum fund. Annual profits that are in excess of what is needed to maintain the reserve are transferred to a holding account. The amount

distributed to the treasury is the average amount transferred to the holding account during the preceding three years.

In Iceland, from 1986 to 2001, the average profit over the previous three years was the basis for the profit transfer. However, the central bank paid the treasury only 50 percent of the average profit and only after charging “price-level adjustment” as an income expense in the profit and loss statement, an amount that represented indexation of the capital of the bank. The amount resulting from the price-level adjustment or indexation was applied directly to capital and reserves as was the profit remaining after transfer to the treasury. This system reflected adaptation to high inflation during the early part of the period (averaging 38 percent per annum during the 1980s). The new central bank law (2001) abolished this system as inflation had been brought down to industrial country levels during the 1990s.

In sum, one can find a number of different approaches to central bank accounting and profit distribution policy as well as marked differences in how timely profit transfers are made. In general, there is a growing recognition that from a corporate governance and financial reporting perspective, acceptable divergence from IAS should broadly be limited to cases where a central bank’s profit distribution mechanism does not properly distinguish between realized and unrealized income.

Credibility and Central Bank Financial Strength: Since rational expectations became a common assumption in economic theory and central bank policy has been frequently viewed in a game-theoretic framework, credibility of policy has become an essential feature both in theory and practice. In his survey of central bank credibility, Blinder (2000) notes that central bankers and economists agree that credibility is important and that it is attained by building a reputation for doing what you say you will do. Effectively this implies that there are three key issues. The first is adopting the right objective function, the second is enabling the attainment of the objective, and the third is being transparent. Insights into the issue have been gained by analyzing the preferences of policy makers, the degree of central bank legal independence, the consistency and credibility of central bank objectives, as well as their consistency with fiscal policy.

Germane to the discussion of this paper is the substantial attention paid to the relation of central bank independence and inflation performance. Interestingly, the demonstrated link tends not to be found outside the developed economies. There are a variety of possible reasons, one of which is that there has been insufficient attention paid to actual financial independence in the measurement of the

independence variable, Indeed Jacome (2001) finds in a study of Latin American central banks that “legal” independence alone is actually *inversely* related to good inflation performance and only by including “economic” and “financial” independence variables does the expected correlation emerge. The importance of financial strength has been argued, albeit indirectly, by Vaez-Zadeh (1991) and Leone (1994) in the context of central bank losses and remedies, and Beckerman (1997) and Stella (1997) who approached the question from the standpoint of the required level of central bank capital.

The most straightforward argument in favor of central bank financial strength is simply that central bank financial weakness leads to central bank losses. Such losses are financed through financial repression, reserve money creation, or debt issuance—leading to expectations of future money growth. If the reserve money injection is consistent with the monetary program, exchange rate or other central bank objective then no immediate difficulty ensues. If, however, the monetary injection is not consistent with the central bank’s policy objectives, it will need to be offset with countervailing action.

Here the central bank has a choice. One avenue is to suppress the impact of the monetary injections by direct means involving repression of the financial system. However, in light of increasing recognition of the efficiency losses associated with such policies, the use of more market friendly indirect instruments has gained wide acceptance. Accomplishing the withdrawal of liquidity through “market-friendly” means requires the central bank to induce a voluntary action on the part of the public. The central bank will need to offer the market an asset bearing a market return in exchange for reserve money. This will lead to further operational expenses or loss of revenue. There are clearly limits to this policy as eventually the central bank will exhaust its supply of valuable liquid assets.

The next step sometimes is to issue central bank own liabilities. The sustainability of central bank debt issuance is a function of the same factors that determine the sustainability of government debt in general. These include expectations of the future income and expenditure stream of the central bank, the growth rate of demand for the securities being purchased from the central bank, the reputation of the issuer of the security, macroeconomic developments, the government’s commitment to guarantee obligations of the central bank, budgetary developments, etc. Furthermore, chronic central bank losses and high inflation lead to institutional adaptations, such as the proliferation of indexed debt instruments, which reduce the scope for the use of the inflation tax.

Apart from the straightforward infeasibility of certain policy commitments when they violate the central bank's intertemporal budget constraint, a less severe degree of weakness decreases the central bank's credibility and worsens the policy cost/benefit tradeoff. This would be the case where the current constellation of exogenous factors are consistent with the chosen policy but the central bank would not be able to withstand shocks to its balance sheet that might be forthcoming. Here what is relevant is not so much the consistency of the policy but its vulnerability and the possible volatilities of certain variables that would impact on central bank strength and correspondingly on its ability to fulfill its policy obligations.⁴⁵ A third issue is that central bank concern with its balance sheet, even though not vulnerable, would lead to a policy reversal. Hence the importance of choosing the right measure of strength.

How to assess the Appropriate Level of Strength: The approach to this problem taken by central banks is generally made operational by discussing a target or target band for central bank *capital*. Targets generally *fall within one of 4 types*, although some banks take a hybrid approach. The *first* is an absolute nominal level of capital. The *second* is a target ratio of capital to another central bank balance sheet item. The *third* category sets a ratio of capital to a macroeconomic variable (excluding central bank balance sheet items). The *last* bases the level of capital on the perceived risks to the "solvency" of the bank (which often is the underlying basis for the actual target chosen in the other 3 categories). Here "solvency" is sometimes interpreted as positive capital, sometimes as the more general concept of maintaining the ability of the central bank to undertake its policy goals. In practice, the Bank of Canada is an example of a bank in the first category. The Bank has a nominal level of capital and pays all of its accrued profits to the government.

The Federal Reserve, Bank of Japan, the Bulgarian National Bank, and the central banks of Iceland and Estonia are all examples of banks falling into the *second and third categories*. The Bank of Japan and the Bulgarian National Bank target internal balance sheet indicators while the Federal Reserve, Central Bank of Iceland and Bank of Estonia target "external" indicators.

The Bank of Japan targets a capital adequacy ratio which consists of the capital base divided by the period average of banknotes issued, of around 8-12 percent. Specific reserves against possible loan losses are not included in calculating the capital ratio. The National Bank of Bulgaria sets a nominal floor on foreign exchange assets in excess of what is necessary under the rules of the Bulgarian currency board. These assets constitute a pool from which the Bank is able to

provide a lender of last resort facility. As the Bulgarian legislation limits the amount the Bank can lend to banks (based on volumes in the payments system), this reserve is clearly related to the Bank's policy commitments and constraints.

Federal Reserve System member banks are required to make capital contributions proportional to their own level of capital. The Federal Reserve then matches these contributions with retained earnings. The effect is to index the level of Federal Reserve capital to the aggregate capital of Federal Reserve member banks.

The Bank of Estonia, operating in a currency board framework, took a decision in September 1999 to alter its capital target. Prior to that Board decision, the Bank had a three tier objective. *The first, statutory capital*, was set in nominal terms. The *second level-reserve capital* was set at a level equal to statutory capital. Once those two objectives had been achieved through accumulated retained earnings, the Bank had significant discretion as to how to distribute profit. Indeed the Bank used such discretion to make "advance payments of future transfers" to resolve a banking crisis in 1997 (see page 37 below). In 1999, the Bank, with a view toward eventual membership in the European Monetary Union changed its distribution policy to focus on preventing an "excessive" decline in surplus reserves of the currency board. While noting that some decline from the level then prevailing was warranted in view of declining risk in the financial environment, the Board decided to set a floor for foreign exchange reserves, net of currency board liabilities, equal to the greater of 2 percent of GDP or 5 percent of broad money, M2. The Central Bank of Iceland, since 2001, should transfer two-thirds of its profit to the Treasury unless capital and own reserves at the end of the fiscal year are less than 2.25 percent of the amount of lending and domestic securities assets of the credit system at the end of the preceding fiscal year. In that case the transfer is reduced to one-third of profit.

The European Central Bank presents a hybrid system. As noted above, the ECB chose a nominal level of capital with an option to require further transfers from member banks. The ECB motives were explicit in two respects. First, capital was viewed as an income source to fund the operations of the bank during start-up and to absorb initial losses-which is a very conventional view of commercial bank minimum capital requirements. Second, independence, in general, and financial independence in particular, requires that capital adequacy be kept under review.

Less definitive approaches have been adopted in Latin America as evidenced by the failure of accounting experts to agree a position on this issue. 50 Ulrich (1998) made two proposals with reference to pre-dollarization Ecuador. One, analogous to the Basle capital criterion, that the central bank should hold capital and reserves

equal to at least 9 percent of risk weighted assets according to the provisions of the legislation applicable to private commercial banks. The second, based on a currency board analogy, is that capital plus net international reserves should be at least as great as the monetary base.

New Zealand and Australia take the third approach which is best summarized as protecting the strength of the balance sheet by explicit control on risks that are not strictly necessary for policy purposes and undertaking a review of the adequacy of the balance sheet before determining profit distribution. Essentially in a position where the balance sheet is deemed strong enough, the banks are focused on ensuring it remains that way but without reference to a specific benchmark. The RBNZ employs Value at Risk (VaR) model limits as well as stop-loss limits in managing its foreign asset portfolio but does not attempt to manage the risk coming from its holding of domestic securities for monetary policy purposes as (a) this might lead the operations department to act counter to monetary policy objectives—exactly what the market suggests the Bank of Japan might do; and (b) because any capital gains or losses on its holdings of government securities would be mirrored by the government.

The Board of the Reserve Bank of Australia reviewed in *2000/01* the structure and adequacy of its capital and reserves and decided to consolidate disparate reserve accounts. The amount to be transferred to the consolidated reserve fund is determined by the Australian government after consultation with the Board. A key element of the profit transfer policy is that while all unrealized gains and losses are taken to the profit and loss account, unrealized gains are not made available for transfer to the government. They are held in a separate account until realized or offset by unrealized losses. Although the RBA does not have an explicit target for its reserve fund, it noted that at June 30, 2001 it stood at 10.6 percent of total assets which the Board regarded as adequate. The Bank attempts to pay the determined profit early in the financial year following the year in which it was earned but on occasion this has not been done as in 1998/99 when the government chose to spread the dividend from that year over the two following.

In assessing the various options, the focus on balance sheet capital is problematic in that it tends to frame the discussion in terms of capital being used to avoid insolvency and hence “zero” becomes a very important number as it is for commercial banks. For a commercial bank, negative capital-or the fear that a bank is approaching negative capital has clear implications. But for central banks zero has no special meaning for two reasons. The first is that central banks are not subject to insolvency procedures, the second is that central banks, in their

conventional state have a significant unrecorded asset, namely the monopoly right to issue fiat money (currency boards and countries participating in a monetary union are an important exception here). This monopoly right, were it capitalized on the balance sheet in the form of franchise value or goodwill, could easily be in the range of 20 percent of GDP, depending on the steady state level of the inflation tax and the discount rate. Taking a low inflation country—the Fed’s 2000 profit of approximately US\$30 billion is roughly 0.3 percent of GDP. Calculating the annuity value with a 2 percent discount rate yields a net worth of 15 percent of GDP or approximately US\$ 1.5 trillion compared with balance sheet capital of \$14 billion. Looked at differently, the average annual increase in U. S reserve money during the last 10 years was US\$ 27 billion. This is equivalent to the monetization of a six percent coupon on net liabilities of US\$ 450 billion.

The point here is that the nominal level of central bank capital—in the absence of any knowledge of the policy regime—is a rather meaningless statistic. Only when provided with policy objectives, such as price or exchange rate stability, can a threshold for central bank net worth or strength be determined. That said, the financial strength of the central bank does not provide a sufficient condition for those policy objectives to be achieved. It merely provides a floor under which the central bank cannot achieve its objectives. Hence, it is first necessary to determine the bank’s objectives, then to determine the minimum strength of the balance sheet to achieve those objectives, the exposure to risk that the bank is likely to experience, and finally a mechanism that ensures that enough reserves are available to absorb the risk.

This argument is a specific application of the more general methodology presented by Blejer and Schumacher (1998), in effect suggesting that central bank strength be determined by utilizing a value at risk approach in light of the cost and benefit matrix attached to its policy choice. As an example, a central bank that does not determine foreign exchange policy—such as the Bank of Canada—need hold no foreign exchange reserves. Banks that do hold large foreign reserves would need to adopt hedging strategies or hold additional capital to prevent devastating losses as is the common practice in Scandinavia. Members of the European System of Central Banks having adopted the euro need not hold the level of reserves they held prior to the introduction of the euro, which has led Gros and Schobert (1999) to argue that they are overcapitalized and to call for a significant reduction in their foreign assets.

Treasury Financing Versus Recapitalizations: A country with a central bank suffering from large negative net worth faces a choice between the strengthening of the balance sheet and the covering of losses on a cash flow basis from the

treasury. The latter option is a frequent feature of central bank law. For example, the new (2002) organic law for the Central Bank of Guatemala has a clear provision covering cases where the Bank suffers losses that it cannot cover with own reserves. In this event, the Ministry of Public Finances should submit in the draft budget law a proposal to cover the losses through the provision of marketable interest bearing debt to the Central Bank in the following fiscal year. This type of solution is what Edwards (2000), in his advice to the Bank, called an “automatic” recapitalization of the Central Bank and which he motivated from the importance of isolating this issue from the pure short-term political arena.

One difficulty with relying on transfers alone is that treasuries are rarely so flexible that they can be provided on a timely basis. A budgetary allocation is normally required and it generally is not possible to usurp the legal framework of an authorized budget law through an *ex ante* requirement so that the central bank losses can be covered. Thus in the case of Guatemala, although the economic form of the recapitalization is quite clearly spelled out, the legal requirement is for the Government to *submit* legislation, not pass legislation. Thus; the likelihood of passage of the legislation is clearly subject to the will of the legislators at the moment the budget is approved and does not depend solely on the Government.

A second concern would be that were the treasury to have sufficient discretion to fund losses on a timely basis, this would also suggest it would have discretion to control the size and timing of the transfers which in effect would place monetary policy in the hands of the treasury rather than on the central bank. If institutional independence is desired for the central bank, it is difficult to see how this can be maintained when the central bank relies on the constant goodwill of the treasury to undertake policy implementation.

In assessing the difference between covering losses on a periodic basis and through a lump-sum recapitalization, one may consider the following situation. Suppose, in order to achieve its price stability goal, the central bank must receive either an annual transfer of government securities equal to X or a onetime transfer of the present discounted value of the stream of X s through time, Y . In the latter case, the central bank would issue the securities as needed to the market. The budgetary impact on the consolidated public sector would be identical in both cases. In the annual transfer case, the central bank would immediately issue the government securities and therefore the budget impact would be equivalent to the debt service on the transferred securities. In the second case, the nominal debt service on the government securities would be much larger but the amounts in excess of the quantity issued to the private sector would remain in the public

sector and the attendant income would be transferred back to the government at the end of the financial year.

The lump-sum recapitalization additionally provides a signal of the government's commitment to allow the central bank the financial possibility to implement appropriate policy. Conversely, the failure to provide the resources "up front", given that the net financial impact on the public sector is nil, could only call into question the government's long term commitment to the annual transfer policy. This in turn would lead to skepticism on the part of the public as to the central bank's policy capability. In cases where the government is particularly concerned about influencing the public's expectations about the medium term policy framework this uncertainty could be very costly.

The aforementioned discussion is placed in a formal model in the remainder of this section. The model draws from Barro and Gordon (1983a&b) and is analogous to Backus and Driffill (1985). The general outline is that the government wishes to undertake a financial reform which is taken to be a reduction in the rate of inflation. The central bank is in a weak financial situation and is not capable of bringing the rate of inflation down to the desirable level without an infusion of government securities. More broadly, there is also the need for fiscal consolidation in the overall public sector accounts. Hence we are not speaking of a recapitalization or fiscal transfers for purely transparency purposes.

A recapitalization purely for transparency purposes would involve the provision of government debt to the central bank sufficient for it to generate a profit. The conventional fiscal balance would fall by an amount equivalent to the higher interest cost (net of central bank profit), which would be financed by interest-free central bank credit. Effectively, this (continued

The government has a choice between transferring the required securities in a lump sum fashion at the beginning of the reform or transferring only the minimal amount of securities required each time period of the budgetary year. To introduce the notion of credibility, it is assumed that the public does not know the true objective of the government and therefore must form expectations of future government policies on the basis of incomplete information. For simplicity, it is assumed that the public knows the main objective function of the central bank and that there are only two possible types of governments, one that has the same objective function as the central bank, the other which is the weaker in the sense that under certain circumstances it would choose to accept higher inflation than the other government or relax the fiscal constraint which in the model can be thought of similarly. That is, the choice variable is the rate of inflation but the

instrument is the quantity of government bonds to issue to the central bank each period which has a government debt service cost as well as a monetary implication attached to it. This motivation is but one of many for including surprise inflation in the reduced form for the government's objective function.

Section-VI Summary and Conclusion

Maintaining sufficient reserves to protect against losses. From a position that central banks should maintain, over time, a risk-based, non negative, level of capital, central banks need to construct their law to enable it to ensure this through the maintenance of sufficient reserves to protect against losses. Banks need to achieve this while addressing the government's legitimate rights to central bank profits and without impairing monetary policy efficacy. The evolution in the measurement and composition of central bank profit, and bank's move to adopt more transparent reporting frameworks means that previous formulaic allocations of profit to dividends and reserves are becoming problematic in ensuring the maintenance of central bank capital.

Central bank law should specify the central bank's accounting and reporting framework, which will subsume the calculation of profit. Such an approach is more efficient than specifying the elements of profit calculation as it allows evolution of the measurement and reporting framework to reflect developments in accounting frameworks. The evolution of international standards, including the growth of fair value measurement, has resulted in greater volatility in measured profit, along with an increase in the unrealized elements in its composition. These developments significantly affect dividend policy. As a minimum, central banks should ensure that they base the pool for calculating dividends on realized profits, net of unrealized losses not covered by reserves, delaying distribution of unrealized gains until realization. Dividends will be a residual item after appropriate allocations to reserves. Banks will calculate such reserves on a model of risk-based capital adequacy enabling a dynamic adjustment of capital in a manner that does not conflict with monetary policy objectives. Mechanisms for determining the allocation to reserves will be consistent with the central bank's overall accountability and independence configuration. The law will also provide mechanisms for the allocation of net losses and bank recapitalization in the event of extreme crisis.

Credibility is important for the success of financial policy, the central bank must be financially strong. The practical implication of this premise is that

financially strong central banks should ensure that their strength remains adequate to cope with their policy responsibilities and attendant risks. Their auditors should in turn utilize risk based models to ascertain whether in most circumstances the central bank can survive adverse events without the need to abandon its objectives. Clearly when the objective changes the appropriate degree of central bank financial strength should be reevaluated to the appropriate level. A second implication of this approach is that central banks ought to earn profit on a regular basis. However it also implies that profit in excess of what would need to be maintained to keep the central bank financially strong ought to be delivered to the treasury. The accumulation of “excess” net worth is not justified; could require the government to borrow from private capital markets at excessively high interest rates; and create a temptation to plunder the central bank’s reserves for reasons of political expediency.

Appropriateness of IFRS in the Central Banks: While significant progress has been made and the profile of the issue has been considerably raised during the last several years, certain controversial points remain and improvements in individual countries have been sporadic. IMF safeguard assessments have identified a number of problems that have been or are being addressed in the central banks assessed but these constitute only a subset of member countries. In particular, 88 percent of assessed central banks were identified as having had inadequate accounting standards. Two particular broad issues are whether IFRS are fully applicable for central banks and the appropriate level of central bank capital. Many banks have not implemented International Accounting Standards, in particular the U.S. Federal Reserve and the European Central Bank. The essential issue is whether there is something special about central banks which invalidate certain elements of IFRS designed for commercial enterprises. The reasons given for why central banks are not done justice by IFRS include: they are not profit maximizing institutions and indeed the profit outcome comes quite late in the central bank’s policy priorities; central bank shares are never exchanged for “market” value and they are immune from bankruptcy; as a matter of policy they may be subject to significant economic risks, e.g. open foreign exchange positions; they are part of the public sector and their accounts may represent only a part of the relevant balance sheet, e.g. central bank losses on its holdings of government securities are exactly offset by government gains and vice versa. Central banks have also argued, as have hedge funds, that they should not be subject to the disclosure requirements of publicly held companies. While there is some merit in these arguments, they generally do not stand up well to good financial reporting requirements.

Accounting Conventions in Government and Central Banks: The conventional government deficit concept as presented here is based on a cash-accounting system. Cash accounting is both useful and practical for government. It is useful in that it will be consistent with the deficit financing in any given period. It is practical because government is often unaware of its accruing receipts (for example, tax receipts due) and expenditures. It should be noted, however, that conventional fiscal deficits are not based entirely on the cash concept. This arises, on the one hand, from non cash accounting in the central government where expenditures are typically recorded on a checks issued basis, which creates a problem of adjustment to the monetary figures-check float-and on the other, by the fact that public sector entities, including the central bank, presumably base their payments or receipts to government on the basis of their accounting surplus or deficit, which may not be on a cash basis. Central bank accounting systems typically follow the normal business practice of being on an accrual basis. This practice allows an easier calculation of the net worth concept. The analyst must therefore be careful in comparing the two-deficit measures.

Accrual accounting: The first significant accounting policy change affecting central banks was the move from cash to an accrual basis of accounting. Accrual accounting recognizes income and expenses at the time that the entity legally or technically incurs them, not at the time that there is an exchange of resources. The most obvious consequence of this is a better matching of income and related expenses to produce a more accurate measure of net income. In normal circumstances, this tends to produce a smoothing of earnings between periods but can produce some subsidiary issues. An example of such is the recognition of income on non performing assets, particularly government debt. In some situations, central banks accrued interest on government debt while never receiving any real resources to match the accrual. This enabled the central bank to report an accounting profit that it distributed to the government as dividends without, real assets to back them. The resulting increase in government liquidity had monetary consequences that conflicted with central bank policy objectives. Fortunately, accounting standards offer mechanisms to recognize such impaired performance and enables the bank to stop accruing income that is not received, though such a decision is not without political difficulties in the situation of government debt.

Central banks derive capital from three sources. *First:* authorized capital which is also known as statutory capital is specified in the central bank law. *Second:* retained earnings covering those profits that have not been distributed as dividends or assigned to revaluation reserves. Hence, they will include balances

in the retained earnings account and all non revaluation reserves, such as general or special reserves. Third: revaluation reserves. Conceptually, revaluation reserves consist of unrealized revaluations for assets and liabilities. These revaluations may be assigned directly to the reserves or else recognized in the income statement before being transferred to the reserves. In some central banks, system limitations, or policy decisions, result in these revaluation reserves accumulating realized as well as unrealized gains and losses. Generally, this is a sub optimal situation as it confuses the purpose of the revaluation reserve.

In this discussion, capital refers to the net capital position, which is the sum of these three. Authorized capital is usually prescribed in central bank legislation, perhaps with a statutory requirement for recapitalization in the event of reported capital dropping below zero or the level of authorized capital. Issues of transparency, independence and financial sustainability require that governments to execute such recapitalization using marketable bonds or other real assets, a requirement reinforced by developments in accounting standards that require the disclosure of the fair value of all assets. Conceptually, a timely and automatic recapitalization mechanism could enable a central bank to operate with zero capital, even in a high-risk environment, though the integrity of any such mechanism rests on a government's willingness to assume the fiscal burdens involved and thus it is a problematic assumption in many situations. This tends to make it difficult to meet requirements for risk-based changes in capital by adjusting authorized capital. Consequently, banks adjust capital to cover risks through retaining changes in the value of their assets or by retaining earnings from operations. This paper is concerned about the recognition, reporting and disposition of these latter two elements, as evolution in accounting standards have changed the composition of measured profit, creating some difficulties for central banks, particularly in those situations where the central bank law prescribes procedures for calculating profits and distributable dividends. The issue is to ensure central banks are able to measure profit in compliance with their accounting framework but avoid adverse effects through inappropriate distribution of dividends.

Profit transfers and Distribution: should be closely related in time to the activities that generate the profit. The appropriation of profit generated in previous accounting periods produces incorrect fiscal statistics, i.e., nontax revenue earned in one period is brought to another period and vitiates the essential link that ought to exist between central bank income and government revenue. Severing this link often makes the annual or more frequent profit distribution the subject of political discussion which is absolutely equivalent in macroeconomic

terms to arguing over an annual credit tranche to government, a possibility that has been explicitly ruled out in dozens of “independent” central bank laws over the past two decades. Transfers of profit that have or will be realized in other accounting periods are equivalent to credit. For both macroeconomic analysis and statistics, it is essential to draw a distinction between distributed central bank profit (non-tax revenue) and credit to government as the latter creates additional claims on resources while the former reflects the payment to government of non repayable resources withdrawn from the economy.

Transparency in profit calculation and distribution is important for several reasons. As central bank profits transferred to the treasury are considered budget revenue, it is important that they be distinguished from transfers more properly classified as credit to government or changes in government equity in public corporations. It is also important to understand whether profit distribution follows the basic principle of accrual accounting, i.e., do profits transferred to government correspond roughly in time to the activity that earned the profit. A further key fact is that in the vast majority of countries, the treatment of profit and losses is asymmetric, namely that profits are transferred to government but losses are not covered, i.e., losses lead to a reduction in capital or reserves. This asymmetry makes problematic judging overall public sector finances. Progress in improving the transparency of central bank profit determination has come with a general improvement in accounting and in some cases with recapitalization of the central bank-which brought to an end a chronic problem with losses. The IMF, in its surveillance work has for certain countries long found it important to report the overall public sector deficit-including the cash losses of the central bank-in its assessment of the fiscal stance. The *2001 Manual on Government Finance Statistics* also covers these issues.

A recapitalization purely for transparency purposes would involve the provision of government debt to the central bank sufficient for it to generate a profit. The conventional fiscal balance would fall by an amount equivalent to the higher interest cost (net of central bank. profit), which would be financed by interest-free central bank credit. Effectively, this (continued). The government has a choice between transferring the required securities in a lump sum fashion at the beginning of the reform or transferring only the minimal amount of securities required each time period of the budgetary year. To introduce the notion of credibility, it is assumed that the public does not know the true objective of the government and therefore must form expectations of future government policies on the basis of incomplete information. For simplicity, it is assumed that the public knows the main objective function of the central bank and that there are only two possible types of governments, one that has the same objective function

as the central bank, the other which is the weaker in the sense that under certain circumstances it would choose to accept higher inflation than the other government or relax the fiscal constraint which in the model can be thought of similarly. That is, the choice variable is the rate of inflation but the instrument is the quantity of government bonds to issue to the central bank each period which has a government debt service cost as well as a monetary implication attached to it. This motivation is but one of many for including surprise inflation in the reduced form for the government's objective function.

Avoiding policy conflicts in dividend distributions: For central banks, the issue of realized and unrealized profits has important monetary policy implications. Realization of central bank profits represents a transfer of real resources from the economy to the central bank resulting in a contraction in the money base. Unrealized profits are still awaiting this transfer of resources so their distribution as dividends provides the government with an expansion of resources for which no corresponding contraction has occurred. This produces an expansionary outcome, which may conflict with the central banks monetary policy objectives. Economically, realized profits represent the transfer of real resources and are a legitimate component of fiscal revenues. The distribution of unrealized profits is equivalent to unsterilized lending to government, something often prohibited in central bank legislation. Extending this argument to other elements of capital, it is possible to view any central bank negative capital as unsterilized lending to government thereby reinforcing the argument of the desirability for central banks to maintain non negative equity.

Potential conflict exists when dividend policy is pro cyclical rather than counter cyclical. In a strict simple rules based policy, a formula prescribes dividends. Using such an approach to ensure sufficient reserves to cover losses, in times of economic crisis the central bank will increase allocations of profits to reserves to cover the expected increase in losses. Given that the bank will apply this approach to a profit already reduced by increased loan loss recognition, the result is reduced dividends to government at a time when the bank is probably loosening monetary policy. The reduction in government liquidity potentially adds to the economic contraction that monetary policy is seeking to avoid. The converse is true in boom conditions. Hence, while it is appropriate to have a risk based capital adequacy framework, there is some merit in allowing central banks a contingent role and some discretion to accumulate reserves on a counter cyclical basis, providing minimum risks are covered. Given that no one has perfect foresight, it is necessary to include an accountability mechanism in any discretionary dividend scheme.

Dividend Policies for Central Banks: While accounting standards have much to say about the calculation of net profit, they specifically disassociate themselves from issues of dividend calculation. An International Accounting Standards Committee discussion paper on Accounting for Financial Assets and Liabilities noted: *“that it is fundamental that an enterprise’s income distribution/dividend policy....should be distinguished from income measurement. It is not appropriate, for example,.. to delay income recognition until cash is received, in order to reduce income to an amount that directors believe may be prudently distributed to owners.”* As dividends are a residual element, after ensuring that appropriate capital and reserves exist to cover a bank’s risks, any discussion on dividend determination needs to accept, as a minimum, a non negative capital position, over time, for central banks. A failure to accept this negates many concerns on dividend policy as it becomes perfectly acceptable for banks to accumulate negative equity through unrestricted dividend distribution or unremunerated operating losses. Hence, dividend policy should focus on ensuring the central bank maintains sufficient capital to maintain its non negative capital position. While the divergence between profits and distributable dividends is a feature common to commercial entities, the unique nature of central bank functions means that this divergence between recognized and realized profits may be more material. Much of the unrealized profit may not be backed by the liquid assets required to enable its distribution without eroding the bank’s liquidity and solvency, or generating adverse monetary policy benefits. To maintain central bank capital adequacy, it is important for dividend policies to protect central bank capital by ensuring dividends are backed by liquid assets. Simultaneously, it is important for central banks to ensure that their dividend policies do not conflict with monetary policy objectives or exacerbate the business cycle. Complications arise for those central banks obliged to pay income tax on their earnings, a practice not recommended by the IMF, and by the need to pay dividends by installment, in anticipation of final earnings. A range of exogenous factors determines the effects on central bank capital of these practices and while it is not possible to say categorically that they are bad, neither represents preferred practice, especially for transition and emerging economies.

Protecting unrealized elements of profit: Concerns for monetary policy neutrality and capital adequacy creates an approach which excludes all unrealized elements from the calculation of dividends. The concerns have two causes. The bank is concerned that it will have insufficient liquid assets to cover the unrealized distributions, which will result in a monetization of the dividends. Also, there is a concern that the unrealized profits will reverse with an interest rate or exchange rate correction, nullifying distributed gains and adversely impacting capital. To

exclude unrealized elements the bank would start with the *Net cash flows from operations* in the Statement of Cash flows as the closest proxy to realized earnings and proceed to determination of dividend distribution from there. This would exclude all unrealized elements regardless of source, including accruals, price and exchange rate movements.

Losses and net Worth of central banks: Following Vaez-Zadeh (1991), Teijeiro (1989) and Leone (1993), we argue that a central bank carrying out traditional monetary policy functions in a stable macroeconomic environment will make profits, for example, from seigniorage on currency issues. However, the macroeconomic environment in transition economies is usually unstable and the central bank is often forced to increase revenues, fiscal activities reduce central bank profits or even produce losses. Thus, central bank losses occur when the bank takes on functions outside its normal role, e.g. subsidized lending to priority sectors or rescue operations. Fry (1993) indicates that serious central bank losses may arise when timing of domestic currency receipts has been divorced from the timing of foreign currency payments. The lack of financial discipline, sterilization operations or bad management may also lead to losses, but permanent losses usually represent hidden fiscal deficits and reflect QFO. Accumulated losses are reflected in negative net worth of the balance sheet. It is commonly argued that a central bank can have a persistently negative. Stella (1997), central bank may operate well without capital, but large negative net worth may compromise bank's independence and interfere with its monetary policy goals. From a macroeconomic point of view, central bank losses are a problem if they endanger attainment of monetary targets. Moreover, as noted in previous section, losses caused by QFO can have distortionary effects. Losses can be financed through creation of additional losses or through inflation. As losses represent an injection of liquidity, the central bank may have to sterilize its impact in order to achieve its money growth objectives [Vaez-Zadeh, 1991]. This vicious circle of rising losses and rising remunerated liabilities is accompanied by increases in interest rates in each round. Hence, losses of the central bank can erode the ability to conduct monetary management efficiently and lead to inconsistent use of monetary policy instruments. Vaez-Zadeh stresses that the higher the ratio of non-earning assets, the stronger the incentive for the central bank to generate a surprise burst of inflation to finance its losses.

Central Bank Exchange Rate Guarantees: Unlike most other central bank activities, guarantees have no immediate effect on either the profit-and-loss account or the balance sheet. Nevertheless, in many cases, notably in Latin America, they have eventually resulted in very large losses. A foreign exchange

rate guarantee is a form of insurance contract. For a specified premium, the insured obtains a guarantee of foreign exchange at a certain price on a given date. If a premium is charged that is above the actuarial value of the contract, then the insurer stands to make a profit in return for reducing the insured's risk. Of course, if a lower premium is charged, and many guarantees were offered for free, an ex ante subsidy is provided. In many cases in Latin America, exchange rate guarantees were offered as a way to facilitate foreign borrowing by domestic residents. These guarantees fixed the debt service in domestic currency terms, thereby reducing the risk to the creditor that the debtor would default solely on account of a real exchange rate depreciation. Had the central bank acquired the foreign currency counterpart of such borrowings, it could have diversified its own risk by holding external foreign assets. Because much of the borrowing was tied to imports, and also for other reasons, central banks did not keep foreign exchange backing for their guarantees. (Inasmuch as these might be considered contingent liabilities, one would not expect that full backing is necessary.)

Realized and unrealized gains: Should the unrealized gains become realized, a different situation would exist. Compared with the situation that would have obtained with no revaluation gain, purchasing power in the private economy is reduced by the amount of the valuation gain, and thus expenditure "financed" by realized gains is similar to expenditure financed from revenue. *If the central bank's accountants took note of the capital gain, it would be hypothecated to reserves: thus, other transfers from income to reserves would be correspondingly reduced, and transfers to the government would increase, reducing the, fiscal deficit.* In some cases, the central bank does not keep track of capital gains and losses that are due to the sale of previously purchased foreign exchange. Rather than shifting the accounting entry from revaluation account to profit account, no change is made. In practice, this means the gain is never effectively realized. Nevertheless, it is a true gain, as the liabilities of the consolidated central bank or government are lower after the gain than otherwise would be the case. One ad hoc way around this accounting problem would be to attribute valuation gains or losses to central bank income over a period of several years.

Activities Affecting the Profit and Loss Account: Central bank activities that affect solely the profit-and-loss account of the central bank include the banking services side of monetary activities and certain quasi-fiscal activities, for instance, subsidized credit refinancing for exporters, which is unwound over a short period. If the central bank makes a profit and provided that the amount the central bank transfers to its reserves is not excessive (reserves policy is discussed further below), the net operating surplus of the bank will accrue to the government and

reduce the deficit. Therefore, the net result of these activities is effectively already included in a conventionally measured deficit. This analysis implicitly assumes that central banks remit 100 percent of marginal profit (when the bank is making a profit) and zero percent of the marginal loss (when it is making a loss). It may be, however, in a particular country, that the marginal rate of transfer of central bank profits is less than 100 percent. In such cases, even were the central bank making profits, the transfer of a quasi-fiscal activity between the government and central bank would not be completely neutral. This potential qualification is ignored in what follows.

It would thus seem that, for measuring the fiscal deficit, no distortion will arise if the central bank performs banking services, or if it undertakes quasi-fiscal activities of a kind such that the entire impact is felt on the central bank's, profit-and-loss account in the year in question. Two points should be made, however. First, leaving such activities in the central bank accounts will understate the gross level of government expenditures and revenues, frequently taken as a proxy for the level of government intermediation in the economy. Second, as noted above, the cost of quasi-fiscal activities undertaken by the central bank is rarely transparent. There are analogous problems with certain central government activities, for example, measuring the *net* value of public asset sales—that is, the gross sales proceeds minus the value of the asset sold.

Activities Affecting the Central Bank's Balance Sheet: This subsection is concerned with activities whose costs do not immediately (or fully) fall on the profit-and-loss account, but are instead reflected in a change in the composition of the central bank's assets and liabilities. Examples are central bank loans to commercial banks or industry that are financed by changes in high-powered money or by central bank borrowing. Some theoretical considerations are needed at this point. The economic cost of an activity can be considered as the amount that would have to be paid to the private sector to undertake the activity in question. Thus, for example, the cost of net lending to the private sector is the sum that would have to be paid to a private commercial bank to undertake the lending itself' and would, in theory, be equal to the expected discounted future loss arising from the loan, adjusted for risk. Thus, to maintain its financial integrity, when undertaking a quasi-fiscal activity, the central bank would ideally increase its reserves sufficiently to cover that cost, effectively reducing its profit transfer to government and increasing the fiscal deficit by the same amount. If it did this, the fiscal deficit would fully reflect the cost of the quasi-fiscal activities undertaken by the central bank in the sense of their impact on net worth.

Overall Balance Sheet of the Central Bank: The overall balance sheet shows the composition of the bank's assets and liabilities. The liabilities of the central bank typically include the note issue, deposits by the government (in the central bank's role as fiscal agent), deposits by the private sector (usually owing to legal regulation or the central bank's role as the banks' banker), and loans raised by the central bank (which can be in foreign currency). On the asset side, the central bank may hold a variety of assets. Resulting from its monetary activities-intervention or rediscounting-it may hold government or private sector bonds and foreign exchange. It may extend credit to the government, to finance the government deficit. And finally, it may undertake quasi-fiscal activities, including the extension of credit to the private sector. To make the accounts balance, the difference between the bank's assets and liabilities is shown on the liability side of the balance sheet. This item which is broadly equivalent to "other items net" in the central bank monetary accounts-has three important components. *First*, it includes the revaluation account that reflects valuation changes in the net foreign assets of the central bank. *Second*, it includes the net worth of the central bank, the accumulation of its profits, plus interest, over time. And *third*, it includes the central bank's original capital, physical assets (such as buildings), and reserves.

Profit and Loss Account (Revenue): Almost all central banks have a monopoly in issuing currency and creating reserves-this right almost defines a central bank.⁸ As the cost of production of notes and coin is much less than their exchange value, the central bank captures the difference, seigniorage, during the money creation process. The same is true of the creation of reserves, a virtually costless procedure. To quote Meyers (1985, p. 27): Like monarchs of old, the Federal Reserve makes money by making money. It does this first by purchasing Federal Reserve Notes at the cost of production (less than 3 cents per note) and by issuing the notes at par. These non-interest-bearing IOUs (Federal Reserve Notes) are then exchanged for interest-bearing assets (government securities). The interest on these securities in most cases provides a substantial part of a central bank's income. In countries where central banks are allowed to lend directly to the private or public sector, or both, interest on these loans is often an important component of income.

In many cases, the central bank requires commercial banks to hold reserves equal to prescribed fractions of their deposits at the central bank (often at a below-market interest rate). These can then be reinvested in government bonds, or used to finance other central bank activities, such as rediscounting, providing a further source of income. Many of the sources of revenue mentioned above fall under the rubric, "inflation tax." Although central banks are rarely charged with the

maximization of revenue from this tax, in many developing countries the ease of collecting this type of tax has led it to become a major source of government finance. While it is well understood that the revenue obtained from the tax depends on the elasticity of the tax base, for example, see Auernheimer (1974), it is often the case that central banks appear to have exceeded the revenue-maximizing rate of inflation. (For an interesting discussion of why this might happen, see Khan and Knight (1982). Another method by which the central bank may generate substantial income is through the administration of a multiple exchange rate system, where the central bank profits from the monopoly purchase and sale of foreign exchange. This is analogous to an export-import tax scheme in a country with a unified exchange rate or a tax on the sale and purchase of foreign exchange. Depending on the accounting conventions in the country, the revenue obtained from such operations may be transferred to the treasury directly or be added to central bank revenue. If it is transferred, gross government tax revenue would not be understated whereas, in the latter, tax revenue would be understated and, if the profits come to the treasury as central bank profits, non tax revenue would be overstated. Aside from these sources of income, central banks receive income from other activities, including fees for acting as fiscal agents to the government/ charges for check clearing, and miscellaneous receipts, such as rents. A further potential source of revenue (or loss) is the effect of exchange rate changes on the value of the foreign assets held by the central bank.⁵ Such valuation changes, however, are usually excluded from the computation of profits and losses of the central bank; instead, changes on the asset side of the central bank's balance sheet are matched by changes in a revaluation account on the liabilities side. This is discussed further below.

Expenditures: Central bank expenditures can be divided into three categories. *First* are the general administrative expenditures on wages and salaries, benefits, equipment, and premises. *Second* are interest payments on deposits of commercial banks at the central bank and any other central bank borrowings. *Third*, and most difficult to analyze, are quasi-fiscal expenditures-expenditures on activities that are *additional to the central bank's monetary and exchange system responsibilities*. These can take many forms: common examples are the provision of subsidized credit (either directly or indirectly through a rediscount scheme) to priority sectors, notably exporters and agriculture; contributions to development funds; expenses arising in connection with bailouts of ailing banks or industries; and exchange rate subsidies on particular types of transactions, such as debt-service payments or essential imports. The dividing line between quasi-fiscal and monetary operations, however, is often not easy to draw. For example, central

bank rediscounting of bonds is generally considered a monetary activity (see also the discussion below, under “Economic Impact of Central Bank Activities”); however, it often takes place at subsidized interest rates, giving it a quasi-fiscal dimension.

As noted in the case of central bank revenue, the way in which *quasi fiscal expenditures are captured in the accounts is often unclear*. In most cases any subsidy will remain implicit; for example, the cost of granting loans at below-market interest rates is typically not calculated. Losses incurred in bailing out ailing industries may be reflected in an overvaluation of the central bank’s assets rather than a reduction in operational surplus. *(Although it should be noted that, in some cases, central banks are required to exclude bad or doubtful debts from the computation of net profits. In addition, if reserves are increased by an appropriate amount, the surplus for distribution would be reduced.)* Other items may remain off-balance sheet, for example, exchange rate or loan guarantees. The provision of foreign exchange at an overvalued exchange rate can also be considered an implicit subsidy. Under a unified exchange rate, this will only generate a loss if the balance of payments is in deficit. If the balance of payments is in surplus, the central bank will make a profit.

Country Practice of Distribution of Profits or Losses: In almost all countries, the governing central bank law regulates the distribution of net profits among three beneficiaries: *central bank reserves, the government, and-if the central bank is only partially owned by the government-dividends to shareholders*. For example, in Belgium, *profits can also be distributed to the bank’s personnel; in Switzerland, profits are distributed to the cantons as well as to the federal government*. Among the three, in recognition of the *financial autonomy* of the central bank, priority is usually given to central bank reserves. Thus, for instance, in some cases *the law prescribes that all net profits will go to the government once the reserve fund reaches a certain level; in others, that a varying percentage of net profits go to each, depending on the ratio of net profits to the bank’s capital*. In some cases the moneys transferred to the government must be used in a particular way, usually to service or retire the national debt. Although a proportion of net profits transferred to the government is often substantial, a potential asymmetry exists in that a net loss would not in general result in a transfer from the government (as might be the case, for example, in a public enterprise) but would instead be met by a reduction in reserves. A further point is that, unlike commercial banks, *there is no reason why a central bank cannot continually make losses and have a persistently negative net worth*. Therefore, unlike other public sector entities, central bank losses need not be “funded.”

Balancing Central Bank and Government Needs for Profits: Having defined the pool of distributable income as realized profits net of unrealized losses for which no offsetting reserves exist, the task is to determine the split between creating reserves and distributing dividends. As a residual element, dividends are what remain after meeting appropriate allocations to reserves. A draft Fund paper has summarized the methods for determining profit distribution into nine categories of: No target, Fixed nominal target, Fixed real target – capital indexed, Residual profit fund, Proportion of total assets target, Proportion of selected assets target, Proportion of liabilities target, Proportion of external indicators “Value-at-risk” indicators. A further dividend distribution arrangement, not found in central bank laws, is the distribution as a preordained amount stipulated in the fiscal budget overriding both the provisions of the central bank law or the likely actual earnings of the bank. While nominally described as dividends, such distributions have the substantive characteristics of interest free credit to government or capital repatriation, especially in the situation where they exceed realized profits. Most of the distribution mechanisms specified in central bank law recognize the need for the banks to maintain a capital buffer to cover future shocks.

Appropriate Level of Strength: The approach to this problem taken by central banks is generally made operational by discussing a target or target band for central bank *capital*. Targets generally *fall within one of 4 types*, although some banks take a hybrid approach. The *first* is an absolute nominal level of capital. The *second* is a target ratio of capital to another central bank balance sheet item. The *third* category sets a ratio of capital to a macroeconomic variable (excluding central bank balance sheet items). The *last bases* the level of capital on the perceived risks to the “solvency” of the bank (which often is the underlying basis for the actual target chosen in the other 3 categories). Here “solvency” is sometimes interpreted as positive capital, sometimes as the more general concept of maintaining the ability of the central bank to undertake its policy goals. In practice, the Bank of Canada is an example of a bank in the first category. The Bank has a nominal level of capital and pays all of its accrued profits to the government. The situation with financially weak central banks is not so facile. In this case; government/society has three options. One is to relieve the central bank of some of its policy goals, e.g., price stability or maintaining a fixed exchange rate. The second option is to achieve the goals through direct instruments and financial repression. The attractiveness of such a solution has been demonstrated to be low almost universally. The third solution is to strengthen the balance sheet, either now or at some time in the future.

Recapitalization involves the transfer of real resources to the central bank such that it attains profitability and its balance sheet becomes capable of recovering from adverse shocks without resort to the treasury. In determining how much capital a central bank should have, a number of factors are important. The correct amount will differ, depending on the economic environment in which the central bank operates, the historical legacy reflected in the balance sheet at a particular point in time, and the status of institutional relations with government. If the central bank is subject to large profit and loss shocks, it may need quite a substantial amount of capital. Here the diversity of foreign exchange reserve policies provides a good example. In Canada, the central bank does not hold the country's foreign reserves on its balance sheet and thus is subject to very little foreign exchange risk. In the United States, the Federal Reserve System does hold part of the country's foreign reserves, but in comparison with other items on the balance sheet they are quite small. In Norway, Sweden, and Iceland—on the other hand—the central bank holds a large portion of its assets in foreign reserves and is thus very exposed to foreign exchange risk. **In consequence, they hold relatively large capital reserves and tend to relate this to the size of their open foreign exchange position.** In other cases, central banks may be exposed to losses from quasi-fiscal operations, or from extensive credits to unsound banks. While the first-best solution would be to eliminate quasi-fiscal operations, a second-best solution would be to provide sufficient capital so that the operations do not generate losses that interfere with monetary policy and indirectly force the budget to bear the burden through lower profit transfers. Greater independence should go hand in hand with greater accountability. A central bank with good management, strong internal audit, and close external oversight could be trusted with a large capital base. The government has a legitimate interest in not allowing the central bank excessive latitude to finance operational losses.

Central banks often have a source of “hidden” capital. Fixed assets are sometimes held off balance sheet, gold is often valued at a historical rate, securities may be valued at “Excess” central bank capital, if properly monitored, has a neutral fiscal impact provided that all of the central bank profit is transferred to the treasury. In cases where the treasury receives only a fraction of central bank profit, the situation is more complex, less transparent and hence ill-advised. Hidden liabilities—particularly large negative net foreign asset positions resulting from devaluations and credit exposure to weak commercial banks—are also common. As demands for transparency and accountability mount, central banks will need to move toward applying an internationally recognized accounting framework such as IAS where the only prima facie reason for divergence would

be where the profit distribution mechanism is not proper. Once the accounting is transparent, the transfer to government should then be derived from a clear set of rules designed to ensure central bank solvency. Institutional arrangements for careful auditing of the preparation of central bank accounts as well as of budgetary expenditures are an important complement to central bank financial independence. Determining the financial strength of a central bank requires careful analysis, not only of the balance sheet and economic environment but also of the accounting rules, profit transfer rules, and the bank's institutional status within government appropriate accounting rules and profit transfer rules. This will serve to safeguard the soundness of the central bank, differentiate genuine central bank profit from disguised credit to government, correctly reflect any central bank losses in the government accounts, and prudently provide for the future flow implications of changes in the current value of items on the central bank balance sheet. The appropriate level of central bank net worth is sufficient to ensure that in the normal course of operations the bank will be able to meet its policy goals and preserve its financial independence from the treasury.

Central bank capital adequacy: Various economic literature portray a large number of papers dealing with the issue of central bank independence and surprisingly contrasts the limited attention that has been paid to analyses and determinants of central banks' *financial* autonomy. Only over the last few years has the issue of central banks' financial autonomy attracted the interest of some scholars. There are many explanations for this new interest. *First*, there is a direct connection with the more general concept of central bank independence from the spheres of politics and industry, given that financial autonomy or central bank capital adequacy (CBCA) can be seen as an important precondition for pursuing and gaining institutional and instrument independence. *Second*, the low inflation levels and low interest rates of recent years have brought with them a significant decline in central banks' revenues and profitability and consequently in the level of central banks' capital. *Third*, over the last few years some central banks have incurred large losses, depleting their capital and in some cases bringing it into negative territories. *Fourth*, there is a potential risk that financial innovations, through the increasing use of e-money and other cashless payments, might cause a reduction in the demand for banknotes, hence reducing the seigniorage of central banks. *Finally*, the issue of insufficient resources of central banks and financial regulators might also be associated with recent financial scandals; in fact inadequate financial resources of regulators and supervisors might have brought forward insufficient financial monitoring and supervision jeopardizing financial stability and investor protection.

Structure of the bank's balance sheet by currency of denomination should also affect the desirable level of CB capital: By affecting the probability of sizable losses, the structure of the bank's balance sheet by currency of denomination should also affect the desirable level of CB capital. Since they issue currency and hold the reserves of the banking system, the bulk of CB liabilities generally lie in domestic currency. However, there are substantial differences between central banks in the fraction of their assets that is denominated in foreign exchange. At one extreme of the spectrum is the USA in which the bulk of CB assets lie in domestic currency. At the other extreme are small open economies with fixed pegs, like Hong Kong, in which the bulk of CB assets are denominated in foreign exchange. Sims (2004), who refers to those two extreme types as F (for Fed) and E (central banks) respectively, notes that F is perfectly hedged in currency risk, while E assumes large currency risks. The larger the currency mismatches between the currency composition of assets and liabilities, the larger the level of CB capital needed to cushion against CB losses due to changes in the exchange rate. Consequently, central banks with larger fractions of foreign exchange-denominated assets should have higher capital. A comparison of the past levels of CB capital in the US, and Hong Kong, as representatives of extreme types of central banks, is consistent with the view that CBs actually follow this principle. Prior to the recent crisis, the Fed's capital was less than one quarter of one per cent of GDP, while the ratio of the capital of Hong Kong's monetary authority to its GDP was more than one hundred times greater than this.

Central Bank of Bangladesh: Introduced Credit Rating of Commercial Banks as institutions and borrower Credit Rating. Stringent regulatory system on the commercial banks, improved corporate governance in state owned and private sector commercial banks, emphasis on off site and onsite supervision. ICT application in central bank and commercial banks has significantly improved. Banking reform is taken as continuous and ongoing process. Changes in loan classification system, emphasis on SME loans, significant achievement in banking the unbanked, Interest rate changes, BASEL-II implementation, Enhancing minimum Capital Adequacy, Enhancing supervisory and regulatory functions. Separation of Conventional and Merchant Banking taken place. Rules and procedures developed for operation Merchant Bank subsidiary companies to deal with conflict of interest among the stakeholders. Demutualization of Stock Exchanges has taken place to address the conflicting situation of existing Stock Exchanges run under mutual system. Green Banking has been popularized among the banking. Financial Reporting Act drawn in line with Sarbanes-Oxley Act of USA customized to the Bangladesh is in implementation process which would

ensure improved and reliable financial reporting which is essential for Public Interest Entities of Bangladesh. Bangladesh is the first country where financial report of the Central Bank is prepared in compliance to the requirements of International Financial Reporting System. Moreover, on the Big Four International Accounting Firm is appointed to certify the financial statements. The Bangladesh Bank pays dividend to the government ranging from BDT2500 to BDT3500 crores.

References

1. Alexander, William E, Tomas I. T. Bali?o, and Charles Enoch, 1995, *The Adoption of Indirect Instruments of Monetary Policy*, Occasional Paper No. 126 (Washington: International Monetary Fund)
2. Andrews, Edmund L., 1997, "Germany, Bundesbank Clash Over Currency Maneuver," *New York Times*, May 29.
3. Bank of Canada, 2001, Banking and Financial Statistics, February.
4. Backus, David, and John Driffill, 1985, "Rational Expectations and Policy Credibility Following a Change in Regime," *Review of Economic Studies*, Vol. 52, pp. 211-21.
5. Bank of Estonia, 1999, Bulletin, Vol.47, No.5.
6. Bank of Finland, 2000, *Russian & Baltic Economies-The Week in Review*, Vol. 41, October.
7. Barro, Robert J., and David Gordon, 1983a, "A Positive Theory of Monetary Policy in a Natural Rate Model," *Journal of Political Economy*, Vol. 91, pp. 589-610.
8. _____, 1983b, "Rules, Discretion, and Reputation in a Model of Monetary Policy," *Journal of Monetary Economics*, Vol. 12, pp. 101-22.
9. Beckerman, Paul, 1997, "Central Bank Decapitalization in Developing Economies," *World Development*, Vol. 25, No.2, pp. 167-78 .*
10. Blejer, Mario I., and Adrienne Cheasty, eds., 1993, *How To Measure the Fiscal Deficit* (Washington: International Monetary Fund).
11. Blejer, Mario I., and Liliana Schumacher, 1998, "Central Bank Vulnerability and the Credibility of Commitments: A Value-at-Risk Approach to Currency Crises," IMF Working Paper 98/65 (Washington: International Monetary Fund).
12. Blinder, Alan S., 2000, "Central Bank Credibility: Why Do We Care? How Do We Build It?" *American Economic Review*, Vol. 90 (December).
13. Board of Governors of the Federal Reserve System, Annual Report, various issues.
14. Beneš J, Vávra D, Vl?ek J (2002): Medium-Term Macroeconomic Modeling and Its Role in the Czech National Bank Policy. (in Czech) *Finance a úv?r-Czech Journal of Economics and Finance*, 52(4):197-231.
15. Bindseil U, Manzanares A, Weill B (2004): The Role of Central Bank Capital Revisited. *ECB Working Paper*, no. 392.
16. CEMLA, 2000, "Reunion sobre aspectos contables y presupuestarios de Banca Central: Conclusiones y recomendaciones." Available at www.cemla.org.

17. Commission of the European Communities, 2002, *Convergence Report 2002 Sweden*, (Brussels: European Commission).
18. Cukierman, Alex, 1992, *Central Bank Strategy, Credibility, and Independence: Theory and Evidence*, (Cambridge, Mass.: MIT Press).
19. Cukierman, Alex, Geoffrey Miller, and Bilin Neyapti, 2001, "Central Bank Reform, Liberalization and Inflation in Transition Economies-An International Perspective," CEPR Discussion Paper No. 2808 (London: Centre for Economic Policy Research).
20. ?ihák M, Holub T (2005): Price Convergence in EU-Accession Countries: Evidence from the International Comparison. *Economie Internationale*, 102:59–82.
21. Cincibuch M, Podpiera J (2006): Beyond Balassa-Samuelson: Real Appreciation in Tradables in Transition Countries. *Economics of Transition*, 14(3), 547–573.
22. De Rezende Rocha, Roberto, and Fernando Saldanha, 1992, "Fiscal and Quasi-Fiscal Deficits, Nominal and Real," Policy Research Working Paper # 919 (Washington: The World Bank).
23. Deutsche Bundesbank, 1997, *Statement of the Central Bank Council: Revaluation of gold and foreign exchange reserves*, posted at www.bundesbank.de/en/presse/presenotizen/notizen/pr280597.htm.
24. Dornbusch, Rudi, 2001, "Exchange Rates and the Choice of Monetary Policy Regimes:
25. Dalton J, Dziobek C (1999): Central Bank Losses and Experiences in Selected Countries. *IMF MAE Technical Note*, TN/99/1.
26. Fewer Monies, Better Monies," *American Economic Review*, Papers and Proceedings, Vol. 91, (May), pp. 238-42.
27. Edwards, Sebastian, 2000, "La Situacion Macroecon6mica en Guatemala: Evaluacion y Recomendaciones sobre Politica Monetaria y Cambiaria," available on the website of the Central Bank of Guatemala, www.banguat.gov.gt.
28. Ernhagen, Tomas, Magnus Vesterlund and Staffan Viotti, "How Much Equity Does a Central Bank Need?" *Sveriges Riksbank Economic Review*, Vol. 2002:2, available at www.riksbank.com.
29. Egert B, Halpern L, MacDonald R (2006): Equilibrium Exchange Rates in Transition Economies: Taking Stock of the Issues. *Journal of Economic Surveys*, 20(2):257–324.
30. Fischer, Stanley, "Seigniorage and the Case for National Money:' *Journal of Political Economy* (Chicago), Vol. 90 (1982), pp. 285-313.

31. Fry, Maxwell], “Can a Central Bank Become Insolvent?” (u published, Washington: Fiscal Affairs Department, International Monetary Fund, May 1990).
32. Faust, Jon, and Lars E.o. Svensson, 2001 “Transparency and Credibility: Monetary Policy With Unobservable Goals,” *International Economic Review*, Vol. 42.
33. Fischer, Stanley, 2001, “Exchange Rate Regimes: Is the Bipolar View Correct?”
34. Distinguished Lecture on Economics in Government, delivered at the Meetings of the American Economic Association, January 6, 2001. Available at www.imf.org.
35. Fry, Maxwell, 1993, “The Fiscal Abuse of Central Banks,” IMF Working Paper 93/58 (Washington: International Monetary Fund).
36. Garcia Lara, Mario A., 2002, “Antecedents, Elaboraciony Espiritu de la Nueva Ley Organica del Banco de Guatemala,” Banco de Guatemala, available at www.banguat.gob.gt.
37. Giovannini, Alberto, and Martha de Melo, 1993, “Government Revenue from Financial Repression,” *American Economic Review*, Vol. 83, (September).
38. Goodfriend, Marvin, 1994, “Why We Need an ‘Accord’ For Federal Reserve Credit Policy: A Note,” *Journal of Money, Credit and Banking*, Vol. 26, NO.3. Reprinted in FRB of Richmond *Economic Quarterly* Winter 2001: Vol. 87 No. 1.
39. Gros, Daniel, and Franziska Schobert, 1999, “Excess Foreign Exchange Reserves and Overcapitalization in the Euro system,” Centre for European Policy Studies Working Document No. 128, (March).
40. Hanousek J, T?ma Z (1995): Demand for Money in the Czech Economy. (in Czech) *Finance a úv?r- -Czech Journal of Economics and Finance*, 45(5):249–268.
41. Hawkins J (2003): Central Bank Balance Sheet and Fiscal Operations. *BIS Working Papers*, no. 20. Higgins M, Klitgaard T (2004): Reserve Accumulation: Implications for Global Capital Flows and Financial Markets. *Current Issues in Economics and Finance*, 10(10):1–8.
42. Holub T (2001a): Seigniorage and Central Bank Finance. (in Czech) *Finance a úv?r-Czech Journal of Economics and Finance*, 51(1):9–32.
43. Holub T. (2001b): Three Essays on Central Banking and Credibility. PhD. thesis, Institute for Economic Studies, Faculty of Social Sciences, Charles University, Prague.
44. International Monetary Fund, 1986, *A Manual on Government Finance Statistics* (Washington: International Monetary Fund).
45. _____, 1995, *Guatemala: Recent Economic Developments*, IMF Staff Country Report No. 95/57, (Washington: International Monetary Fund).

46. _____, 1996a, *Uruguay: Recent Economic Developments*, IMP Staff Country Report No. 96/94, (Washington: International Monetary Fund).
47. _____, 1996b, *Nicaragua: Recent Economic Developments*, IMP Staff Country Report No. 96/124, (Washington: International Monetary Fund).
48. _____, 1998, *Venezuela: Recent Economic Developments*, IMP Staff Country Report No. 98/117, (Washington: International Monetary Fund),
49. _____, 2000a, *Chile: Staff Report for the 2000 Article IV Consultation*, IMF Staff Country Report No. 00/94, (Washington: International Monetary Fund).
50. _____, 2000b, *Azerbaijan Republic: Report on the Observance of Standards and Codes—Fiscal Transparency Module*, (Washington: International Monetary Fund).
51. _____, 2001 a, *Chile: Staff Report for the 2001 Article IV Consultation*, IMF Staff Country Report No. 01/116 (Washington: International Monetary Fund).
52. _____, 2001 b, *Nicaragua: Article IV Consultation staff Report*, IMF Staff Country Report, No. 01/171 (Washington: International Monetary Fund).
53. _____, 2001c, *Government Finance Statistics Annual 2001*, (Washington: International Monetary Fund).
54. _____, 2001d, *Brazil: Report on the Observance of Standards and Codes—Fiscal Transparency Module* (Washington: International Monetary Fund).
55. Ize, Alain, 1987, “Fiscal Dominance, Debt, and Exchange Rates,” IMP Working Paper 87/52 (Washington: International Monetary Fund).
56. Ize A (2005): *Capitalizing Central Banks: A Net Worth Approach*. *IMF Staff Papers*, no. 2.
57. Jacome, Luis, 2001, “Legal Central Bank Independence and Inflation in Latin America During the 1990s,” IMF Working Paper 01/212 (Washington: International Monetary Fund).
58. Kopits, George, 2001, “Fiscal Rules: Useful Policy Framework or Unnecessary Ornament?” IMF Working Paper 01/145 (Washington: International Monetary Fund).
59. Leone, Alfredo, 1994, “Institutional and Operational Aspects of Central Bank Losses,” in *Frameworks for Monetary Stability: Policy Issues and Country Experience*, ed. by Tomas J.T. Balino and Carlo Cottarelli (Washington: International Monetary Fund).
60. Leone, Alfredo, “Effectiveness and Implications of Limits on Central Bank Credit to the Government” (unpublished, Washington: Central Banking Department, International Monetary Fund, October 1990).
61. MacArthur, Alan, “Monetary Operations, Financial Market Development, and Central Bank Independence” (unpublished, Washington Central Banking Department, International Monetary Fund, October 1990).

62. Mackenzie GA, Stella P (1996): Quasi-Fiscal Operations of Public Financial Institutions. *IMF Occasional Paper*, no. 142.
63. Molho, Lazarus, "European Integration and Revenue from Seigniorage: The Case of Italy:' IMF Working Paper, No. 89/41 (unpublished, Washington: International Monetary Fund, May 1989).
64. Mackenzie, George A. (Sandy) and Peter Stella, 1996, *Quasi-Fiscal Operations of Public Financial Institutions*, Occasional Paper 144 (Washington: International Monetary Fund).
65. Milesi-Ferretti, Gian Maria, 2000, "Good, Bad or Ugly? On the Effects of Fiscal Rules with Creative Accounting," IMP Working Paper 001172 (Washington: International Monetary Fund).
66. Norges Bank(Central Bank Of Norway), 2001,Annual Report 2000,Oslo
67. Okina., Kunio, 1999, "Monetary Policy under Zero Inflation: A Response to 'Criticisms and Questions Regarding Monetary Policy'," *Monetary and Economic Studies* Volume 17, NO.3 December (Tokyo: Bank of Japan Institute for Monetary and Economic Studies).
68. Robinson, David 1., and Peter Stella, 1987, "Amalgamating Central Bank and Fiscal Deficits," IMF Working Paper 87/73, Reprinted in *How to Measure the Fiscal Deficit*, ed. by Mario 1. Blejer and Adrienne Cheasty (Washington: International Monetary Fund).
69. Robinson, David j., and Peter Stella, "Amalgamating Central Bank and Fiscal Deficits;" in *Measurement of Fiscal Impact: Methodological Issues*, IMF Occasional Paper, No. 59, ed. by Mario j. Blejer and Ke-Young Chu (Washington: International Monetary Fund, June 1988), pp. 20-31.
70. Sims C (2003): *Limits to Inflation Targeting, Technical report*. Princeton University, New Jersey. Stella P (1997): Do Central Banks Need Capital? *IMF Working Paper*, no. 97/83. Stella P (2005): Central Bank Financial Strength, Transparency, and Policy Credibility. *IMF Staff*
71. Stella P (2008): *Papers*, no. 2. Central Bank Financial Strength, Policy Constraints and Inflation. *IMF Working Paper*, no. 08/49. Stella P (2009): The Federal Reserve System Balance Sheet: What Happened and Why it Matters. *IMF Working Paper*, no. 09/120.
72. Stella P, Lönnberg A (2008): Issues in Central Bank Finance and Independence. *IMF Working Paper*, no. 08/37.
73. Sargent, Thomas J. and Neil Wallace, 1981, "Some Unpleasant Monetarist Arithmetic," *Federal Reserve Bank of Minneapolis Quarterly Review*, Fall 1981.

74. Sedlabanki Islands (Central Bank of Iceland), 2001, "New Central Bank Act," *Monetary Bulletin*, Vol. 3, No.3 available at www.sedlabanki.is.
75. Stella, Peter, 1997, "Do Central Banks Need Capital?" IMF Working Paper 97/83, (Washington: International Monetary Fund).
76. Sullivan, Kenneth, ed, 2000, "Transparency in Central Bank Financial Statement Disclosures," IMF Working Paper 00/186 (Washington: International Monetary Fund).
77. The Economist, 1997, "Towards EMU: Kicking And Screaming Into 1999," June 7.
78. Teijeiro, Mario O., "Central Bank Losses: Origins, Conceptual Issues, and Measurement Problems;" Policy, Planning, and Research Working Papers, No. 293 (Washington: World Bank, 1989).
79. The Economist (2005): Economic Focus: A License to Lose Money. The *Economist*, no. 21. Fry M (1993): The Fiscal Abuse of Central Banks. *IMF Working Paper*, no. 93/58.
80. Ulrich, Mauricio, 1998, "Cuanto Require de Capital un Banco Central? Propuesta del Nivel del Capital desde la Perspectiva Ecuatoriana," available at www.cemla.org.
81. United States General Accounting Office, 1996, *Federal Reserve System: Current and Future Challenges Require Systemwide Attention*, (Washington: General Accounting Office).
82. Vaez-Zadeh, Reza, 1991, "Implications and Remedies of Central Bank Losses," in *The Evolving Role of Central Banks*, ed. by Patrick Downes and Reza Vaez-Zadeh (Washington: International Monetary Fund), pp. 69-92.
83. Volcker, Paul A., 1986, Statement Before the Subcommittee on Monetary Policy of the Committee on Banking, Finance, and Urban Affairs, U. S. House of Representatives, January 29
84. Woodford, Michael, 2001, "Fiscal Requirements for Price Stability," *Journal of Money, Credit and Banking*, Vol. 33, NO.3.
85. World Bank, 1993, Argentina: From Insolvency To Growth, (Washington : World Bank). Auernheimer, Leonardo, "The Honest Government's Guide to the Revenue from the Creation of Money:" *Journal of Political Economy* (Chicago), Vol. 82 (May/June, 1974), pp. 598-606.

Determination of Near Term Scenario of Monetary Aggregates of Bangladesh

IMAM ABU SAYED*

Abstract *Monetary aggregates (M2 and RM) and balance of payments (BOP) for the first time is consulted comprehensively examining economic variables for formulation exclusive near term (yearly) scenario of monetary and credit program of Bangladesh Bank (BB) from supply side. The M2 and RM consists both liabilities and assets while BB usually publicises assets side program in the monetary policy statement (MPS). As a result combined (assets and liabilities) monetary programming publication and signalling rational expectation regarding interest rate, exchange rate and inflation is the agenda of the paper. In this regard quantity theory of money, simultaneous equation, cointegration test, ARIMA exercise, participatory and judgemental approach is pursued in quantifying M2, RM and BOP yearly growth. Literature survey found that the money demand function is stable and is highly dominated by the transaction motive for holding money. Consequently, in this paper emphasis has been given in quantifying supply side of money assuming stability in money demand. Central banks prudential policy impact the supply side, while mainly income and interest rate influence the demand for money. The objective of this paper is better monitoring of monetary aggregates ensuring desired economic growth and inflation. For this reason real GDP growth, inflation, income velocity of money, which are elements of money supply are verified scrupulously using economic tools for implementation effective monetary policy.*

* Author is a Joint Director (Research), Monetary Policy Department (MPD), Bangladesh Bank and certified Financial Consultant from the Canadian Securities Institute, Canada. Views expressed in this paper are own and do not reflect those of Bangladesh Bank. My deep indebtedness to Dr. Md. Akhtaruzzaman, Economic Advisor for his highly insightful comments and sincere gratitude to Dr. Sayera Younus, Deputy General Manager, Policy Analysis Unit, Bangladesh Bank for her careful reviewing effort. Special thanks to Md. Akhtaruzzaman, General Manager, Research Department and MPD officials of Bangladesh Bank for valuable remarks.

Introduction

Monetary aggregates M2 and RM both have liabilities and assets side. Currency outside banks and deposits including demand and time deposits are liabilities of M2. Currency issued and DMB's balance with BB as reserves encompasses liability of RM. Money multiplier indicator of financial deepening basically derived expounding currency deposit ratio and reserve deposit ratio. The effort of monetary policy is to decrease the currency growth and increase the time deposits for financial deepening. Decrease in cash balance in public hands will grow the time deposit as well as financial deepening of the country. Net foreign asset (NFA) and net domestic asset (NDA) are the two main factors of assets side of M2 and RM. NFA of M2 arrives combining central banks NFA and foreign exchange assets and liabilities of DMB's. Credit to private sector, credit to government (net) and credit to other public sector are the components of NDA of M2. Credit to government sector amount comes from national budget of fiscal sector. Private sector credit is the core element to stimulate the economy. Other public sector relates to state owned enterprises. NFA of BB derives from the overall balance of balance of payment (BOP) addressing external sector. Claims on government (net), claims on other public and claims on DMBs are the constituent of asset side of RM. Claims on government among others the ways and means balance along with overdraft and treasury bills and bonds amount. According to number claims on other public are declining. Repo, loans and advances together with refinancing are reported in the claims on DMB's head. Formulation of M2 and RM is yearly and further divided into quarterly showing different period growth rates.

Credit to the private sector, government sector (net) credit and net foreign assets (NFA) are the main elements of M2 from the asset side. Between private and government (net) sector credit of M2 the share of private and government sector is eighty percent and twenty percent respectively. Private sector credit is random or stochastic variable. Stability of private sector credit depends on micro foundation of individual and firms. This relies on among others assets and liabilities, credit rating, proper collateral, less asymmetric information and moral hazard of the agents, risk proposition of individual and institution, Know Your Client (KYC) rule and global economic situation. Success of credit to the government sectors are supported by proper securitization of treasury bills and bonds and effective secondary market. RM is the economic balance sheet of BB. NFA of RM arises from BOP. Substantial amount of foreign exchange reserves based on import is the cushion from the external sector perspective. Current and blocked nature debt including government bills and bonds outstanding minus deposit comprises government (net) account of RM. Open Market Operation

(OMO) instruments and budgetary tools impact the credit to Deposit Money Banks (DMB's) accounts of BB. Overall surplus of BOP and foreign exchange sale /purchase impact the NFA of RM. The BOP is prepared according to IMF definition consisting current account, capital account and financial accounts. Segmentation of financial accounts demonstrates inflation is the monetary and budgetary phenomenon, which is the target of monetary policy. In monetary programming of Bangladesh these core elements are considered crucially taking into account quantity theory of money, econometric exercise and financial issues. Accordingly, we will derive yearly program number of M2, RM and BOP in this paper due to lack of study in this area. It may be noted that circulation growth rate of cash money (amount of printed money) in a year depends on annual real GDP growth rate (for example seven percent), annual inflation rate (eight percent) and the amount of torn notes in a year say fifteen percent of the total circulated notes subject to financial engineering i.e. debit card, credit card and mobile banking.

M2 developed amalgamating DMB's and BBs balance sheet. Monetary sector, external sector, fiscal sector and real sectors are the territory of monetary programming. To foster economic growth with suitable inflation for poverty alleviation accommodative monetary policy has been followed in this paper reflecting the view of policy makers and stakeholders. The MPS of BB observes the stakeholder including think tanks vision and publishes the economic outlook for each next six months of a financial year. Meticulous exercise is made before publishing any single data relating to MPS. Despite following inflation targeting monetary policy by many countries central bank quantifying RM and M2 as operating and intermediate target (information variables) have due importance. In this paper at the beginning it is identified that monetary programming is impacted by both deterministic and random variables. These variables also dealt econometrically to get inference for forecasting. According to quantity theory of money M2 growth arrives combining real GDP growth, inflation and changes in income velocity of money. Income velocity of money is the ratio of nominal GDP and M2. GDP and inflation derive from real sector. The M2 and RM programs are monitored comparing actual outcome and take essential measures considering the deviation of the path. Noted that the monetization rate in Bangladesh is around fifty percent of GDP (M2 divided by GDP and multiplied by 100), which results scope of rapid monetization with proper monetary policy.

Inflation targeting policy is followed in the U.K., Canada and U.S.A. Bangladesh follow monetary targeting policy with the concentration of inflation and GDP growth. Study reveals that money demand is stable in Bangladesh and BB can impact the quantity of money. Islam (2000) provides new evidence on the money

demand function for Bangladesh using co-integration techniques and a longer quarterly time series data than previously used. Co-integration results indicate that a single co-integrating vector describes the long-run equilibrium money demand relationship in Bangladesh for both the narrow and broad money categories. It is also found that the money demand function is stable and is highly dominated by the transaction motive for holding money. The effects of alternative opportunity cost variables on money demand were not found to be significant.

In the developed countries, for M2 growth formulation GDP and inflation (two elements) are calculated. Income velocity of money is not incorporated due to full monetization. The plot of income velocity (GDP divided by M2) curve is 'U' shaped. We are in the lower part of declining territory of this curve. The bottom of the 'U' shaped curve is zero after that it is positive. The developed country are in the upper part of the U' shaped curve. As a result the developed countries do not add velocity in their broad money program. The cited developed countries are following inflation targeting monetary policy. Historically BBs mandate was in broad nature. At present the core element is to conduct monetary policy in order to attain the objective of price stability with sustainable growth. The short-term goals are determined after a cautious and pragmatic appraisal of the current economic situation. There are three types of monetary policy termed as expansionary, contractionary and accommodative. Decreases in interest rate raise the credit with expansionary outcome. Rise in interest rate occurs opposite effect. Accommodative monetary policy is moderate considering global outcome. Money demand function is steady in Bangladesh and historically influenced by the transaction motive. The short-run money demand function and the speed of adjustment to the long-run equilibrium observe as reasonable for both M1 and M2. Currency outside banks with demand deposit consist narrow money (M1). M1 and time deposit comprises broad money (M2). M3 is calculated combining M2 and postal deposit for instance. The NFA of BB is equivalent to gross foreign exchange reserves deducting liabilities includes for example Asian Clearing Union (ACU) balance, project FC account and FC clearing account. Scheduled Bank Statistics (SBS) and BOP prepared by the Statistics Department of BB are used as underlying statements for preparing monetary programming of Bangladesh.

At the outset we need to examine the recent monetary sector and related variables development. The landscape of monetary policy has been changed due to introduction of repurchase agreement (Repo) and Reverse Repo in 2003 as a part of structural reform of financial sector. Conventionally DMBs can lend eighty one percent of demand and time liabilities keeping nineteen percent as statutory

liquidity ratio (SLR) with Bangladesh Bank (BB). Now a day's DMB's depositing government securities as collateral and can borrow money from the BB. As a result DMB's can run with shortfall of liquidity overnight basis with marginal efficiency. Role of BBs lender of last resort has also been changed subsequently. DMBs are using government treasury bills and bonds as held to maturity (HTM) for maintaining SLR. These securities are amortized over time. Rest of the securities are used held for trade purpose (HFT). Government are interested to borrow money at lower cost from the banking system. Recently the yearly borrowing amount from the banking is around one and half percent of nominal GDP. Consequently determination of cut-off rate of government securities as a risk free instrument is crucial. At the same time off load of BBs holding of more than five year term bonds is important from economic point of view. Gradual securitization of bonds will balance between assets and liabilities improving the duration gap. The procedures of government financing along with monetary and credit programming and balance of payments are described in order to establish better security market and ensuring development in Bangladesh. Hassan, et. Al. (2003) find out both long-term and short-term dynamic relationships among money supply and its component for Bangladesh economy within an Engle–Granger error-correction framework using yearly data for the period of 1972–1997. They find that M1 and M2 money supply have predictable long run relationship exist among M2 and its components indicating the absence of a developed money market in Bangladesh. Hossain (1988) estimated a short-run money demand model for Bangladesh using quarterly data from 1974:1 to 1985:4. The author found a Laidler (1982) short-run real money demand model, which is appropriate for Bangladesh.

We will describe the supply side elements of money in this paper taking into account the money demand inference relating to income and interest rate. Recent OMO and maintenance of high foreign exchange reserves from the BB perspective are crucially verified. M2, reserve money and BOP are compiled in this paper taking into account economic tools and think tanks opinion regarding interest rate, inflation and exchange rates. In this paper monetary, external sector and fiscal (deficit financing) interactions are examined and inferences are made bearing in mind long run relationship and short run deviation of the M2, RM and BOP programmed path as a research question. Prudential monetary policy keeping proper interest rate, exchange rate and inflation can reduce unemployment through Phillips curve. The negative impact of rising inflation over unemployment is actually the existence of theoretical Phillips curve which is evidenced by Bangladesh and it seems to be a result of migration of people

towards employment sources (UKessays.com). Money supply to the productive sector specially the private sector increases the production and reduces the inflation. Proper amount of government investment considering GDP also increase the productivity of the economy. Appropriate rates of the government treasury bills and bonds for budget financing from the banking system as reference rates help to determine the right deposit money banks (DMB's) lending rates. Study observes gross investment over 30 percent of GDP will lower the poverty level in the country below 31.50 percent of 2010 (World Bank statistics). According to World Bank statistics the gross investment of Bangladesh is 27 percent in 2012. This approach can ensure the economic growth and reduce the income inequalities measured by Lawrence curve. GINI index in Bangladesh was measured at 32.12 in 2010, according to the World Bank. In this paper we will utilize the findings of the literature survey for making conclusion relating to macroeconomic stability arising from monetary programming of Bangladesh.

Organization of the paper involved literature review in section-I. Formulation of yearly monetary program path is described in section-II. Section-III deals with balance of payments accounts program in a nutshell. Determination of interest rate, foreign exchange rate and inflation as policy variable is analyzed in section-IV. Conclusion is represented in section-V.

Section I

Literature review

Literature review is conducted to understand the interactions of M2, RM and BOP and money demand functions of Bangladesh in the cross country perspective. One of the Bank of England's two core purposes is monetary stability. Monetary stability means stable prices with low inflation and confidence in the currency. Stable prices are defined by the monetary authorities inflation target, which the Bank seeks to meet through the decisions taken by the Monetary Policy Committee. Canadian monetary policy is concerned with how much money circulates in the economy and what that money is worth. By keeping inflation low, stable and predictable, the Bank contributes to solid economic performance and rising living standards for Canadians. In the United States, the Federal Reserve is in charge of monetary policy. Monetary policy is one of the ways that the U.S. government attempts to control the economy. If the money supply grows too fast, the rate of inflation will increase; if the growth of the money supply is slowed too much, then economic growth may also slow. In general, the U.S. sets inflation targets that are meant to maintain a steady inflation of 2% to 3%.

Ho (2003) has pointed two main purposes: (i) reveal the statistical properties between real money demand and its determinants in Macao; and (ii) diagnose the stability of the specified money demand equations. It is shown that in the long-run models, the demand for currency in circulation and M1 is cointegrated with specified determinants, while the short-run models of demand for currency in circulation and M2 also indicate stability. The determinant of transactions demand, represented by real GDP, is statistically significant with correct sign in both the long and short-run models. The speculative factor, represented by the savings deposit rate, indicates significance in the long and short-run models of M1 only. Meanwhile, the inflation rate, a proxy for the rate of return of goods or real assets, and the Hang Seng Index, a proxy for equity investment, indicate significant and negative relationship with the currency in circulation only. The yield of 10-year US Treasury bond, which represents the rate of investment return of long-term debt securities, has no significant relationship with real money demand across the board.

Nasiruddin (2012) investigates the existence of a long run money demand function for Bangladesh during the period 1975-1997 using the co-integration and error correction modelling approach. It also examines the parameter stability of the money demand function. The empirical results suggest that there exists a unique long-run relationship between real broad money balance, real GDP, and the real exchange rate. The short- term dynamic behaviour of money demand has been investigated by estimating an error correction model in which the error correction term has been found to be correctly signed and statistically significant. Real GDP and the real exchange rate have emerged as important determinants of the demand for money in Bangladesh.

Yu Han (2009) observes that theoretically, the demand for real money balances could be divided into transactions demand component, which is positively related to the income and inversely related to interest rates, precautionary demand component, positively related to income and speculative demand component, inversely related to interest rates. In addition, the paper includes the cost of credit as a determinant of demand for money. Following the previous studies and real world experience, the cost of credit does matter in developing countries like Bangladesh. Since, in developing countries the transaction using broad money (M2) very often takes place. The government, the business and investors are using credit or lending to ensure the smooth running of their development activities. The banking system and other financial institutions create money by giving loans. However, it is a practice that during economic boom the returns on investment is high and it encourages an increase in borrowing and lending activities with a

relatively lower cost of credit. During economic crisis either it is inflation or deflation, the banks and other financial institutions may minimize the cost of borrowing in order to encourage the clients for borrowing. By contrast, an increase in the cost of borrowing is likely to decrease the demand for money.

Pragmatic study on money demand function exists in Bangladesh (see Taslim 1983, 1994 and Hassan 1982). These studies used regression technique to estimate money demand function in Bangladesh using time series data.

The money supply and money multiplier related issues of developed and developing countries have been widely worked out. Johannes and Rasche (1979), Bomhoff (1997), Park (1980), Arby (2000), Ford and Morris (1996), Baghestani and Moot (1997) have pursued studies on money supply and money multiplier of different countries. They highlighted the degree of controllability over money supply by the monetary authority, stability and predictability of money supply, determinants of money supply and policy implications for governing monetary policy.

Mahboob and Anisul (2012) empirically tested the money supply function for Bangladesh using annual time series data. Authors observed that high-powered money played a very significant role in the money supply process of Bangladesh, particularly with respect to the narrow money supply M1, thus providing some support for the monetarist model. However, beyond the monetarist view, additional variables in the light of the Keynesian and structuralist analysis, such as bank rate, external resources, and financial liberalization need to be taken into account in understanding the money supply process of the country. Other aforesaid variables were also found to exert some influence on the broad money supply in Bangladesh. However, given the poor performance of the narrow money model and the existence of multicollinearity issue in both models, the estimated results, even for the broad money model, needed to be interpreted with caution.

Section II

Formulation of yearly monetary program path

Before determination of yearly money supply growth we assume that money demand function is stable and is highly dominated by the transaction motive for holding money. BB conducts series of meeting with the financial expert, think-tank and stakeholders before devising monetary policy of Bangladesh reflected in M2, RM and BOP program. The dialogue is mainly based on interest rate, exchange rate, inflation rate, GDP growth and related macroeconomic variables

of the country. Ultimately, BB formulates monetary program of Bangladesh in consultation with the government. BB publishes MPS half yearly basis assessing current situation and unfolding economic outlook for next six months. Study reveals apart from stochastic approach Bangladesh M2, RM and BOP data have structural adjustment issues of different decades. Different econometric tests are applied in related variables before formulating monetary programming. In the long run equilibrium relationship exists among monetary variables, which identified exercising Unit Root test. ARIMA and seasonality are also consulted as part of monetary programming. Consequently, quantity theory of money, simultaneous equation (Sayed 2001), cointegration test and ARIMA inferences participatory and judgemental approach is suitable in quantifying M2 growth of Bangladesh. The growth rate of M2 for FY 2011-12 is calculated solving real GDP growth, inflation rate and changes in income velocity of money in percent. GDP growth and inflation rate is found in the national budget for upcoming year. Income velocity of money arrives dividing nominal GDP with M2, which is in declining trend. Change in income velocity of money for FY 2011-12 is estimated at -2%. Quantity theory of money can be resolved plugging annual GDP growth rate (7%), annual inflation rate (8%) and annual percent changes in income velocity of money (-2%).

We know $MV=PY$.

Log function is required to work out the equation.

Thus we get $\ln M + \ln V = \ln P + \ln Y$

$$= \ln M = \ln P + \ln Y - (\ln V)$$

$$= 8\% + 7\% + 2\% = 17\% \text{ M2 growth is expected for FY 2011-12.}$$

Here, M= M2 growth; V= change in income velocity of money in percent; P= inflation rate and Y= real GDP growth rate. Income velocity of money is declining over time. Velocity for a particular year can be derived as:

$$MV=PY$$

$$\text{Or, } (1+M^{\wedge}) (1+V^{\wedge}) = (1+P^{\wedge}) (1+Y^{\wedge}) \text{ [}^{\wedge}\text{stands for estimated]}$$

$$\text{Or, } V^{\wedge} = ((1+P^{\wedge}) (1+Y^{\wedge}) / (1+M^{\wedge})) - 1$$

$$= ((1.08) (1.07) / (1.1742)) - 1 \text{ [M2 growth programmed as 17.42\% for FY 2011-12]}$$

$$= -0.016 = -1.6\%$$

M2 growth also can be determined calculating income elasticity of nominal demand for money. The equation can be formulated as $E = M^{\wedge} / Y^{\wedge}$ [M^{\wedge} = growth

of nominal broad money stock and $Y^? =$ growth of nominal income]. Thus $M^{\wedge} = E((1+Y^{\wedge}) / (1+P^{\wedge}) - 1)$. $E = 1.1$ assumed to be stable. Therefore, $M^?$ (growth of M2) $= 1.1((1.07)(1.08) - 1) = 0.1712$ or 17.12%.

More precisely percentage change of GDP deflator along with average CPI inflation and income velocity of money are calculated to derive M2 growth in a fiscal year.

Component wise monetary and credit program

ARIMA, simultaneous equations, historical data and current demand have been observed in the simulation of monetary programming of Bangladesh. Maintenance of optimum inflation and GDP growth is central aspect. BOP end June 2012 overall deficit US\$ 40.6 crore (Table-4) is added with RM end June 2011 NFA to arrive June 2012 number, which is equivalent to Tk. 58059.50 crore (Table-3). DMBs asset and liabilities of foreign exchange holdings is added with the NFA of RM in order to get relevant NFA of M2 (Table-1).

Government sector credit expansion from the banking system to implement the Annual Development Program (ADP) is expected to Tk. 18095 crore for FY 2011-12. The borrowing amount declares in the national budget, which is subject to change according to revised annual ADP. Subsequently, additional Tk.5000 crore also estimated bearing in mind declining trend of non-bank and foreign funds maintaining overall budget deficit 5% level of GDP. Through treasury bills and bonds government obtain money from DMBs. Other public sector credit is expected to decline due to privatization process of the state owned enterprises (SOEs). Negative growth rate 7.50% is assumed in this sector. Public sector credit programmed 23.32% expansion for FY 2011-12 (Table-1). Private sector credit component is elaborated in the SBS of BB. This is the thrust sector of the economy. Private sector credit is ranged from personal loan to manufacturing industry. Housing loan, auto loan, crop loan, credit card to the common people like developed country encouraging financial inclusion as well as monetization in Bangladesh. Following ARIMA and related economic standpoint private sector credit growth is expected to 18.53% in FY 2011-12 (Table-1). The main component of other item (net) is inter-bank asset of unclassified asset inter-bank liabilities and contingent liability of unclassified liability. Other item (net) is quadratic (\pm) nature with two roots.

Econometric forecasting of M2

Alternative to traditional single and simultaneous equations model Box-Jenkins auto regressive integrated moving average (ARIMA) has been deployed to

Table 1: Monetary and Credit Program

(Tk. in crore)

Particulars	Outstanding stock		
	June 2010	June 2011	June 2012
	1	2	3
A. Net Foreign Assets of banking system	67073.70	70620.00	67095.00
		(+5.29)	(-4.99)
B. Net Domestic Assets of banking system	295957.50	369899.90	450158.60
		(+24.98)	(+21.70)
a) Domestic credit	340213.70	433525.90	518310.60
		(+27.43)	(+24.98)
Public sector	69453.00	92813.20	114455.00
		(+33.63)	(+23.32)
Govt.(net)	54392.30	73436.10	96531.10
		(+35.01)	(+31.45)
Other Public	15060.70	19377.10	17923.90
		(+28.66)	(-7.50)
Private sector	270760.70	340712.70	403855.60
		(+25.84)	(+18.53)
b) Other items (net)	-44256.20	-63626.00	-68152.00
		(+43.77)	(+7.11)
C. Broad money (A+B)	363031.20	440519.90	517253.60
		(+21.34)	(+17.42)
i) Currency outside banks	46157.10	54795.10	57883.31
		(+18.71)	(+5.64)
ii) Deposits	316874.10	385724.80	459370.29
		(+21.73)	(+19.09)
a) Demand deposits	41831.30	48305.90	57232.49
		(+15.48)	(+18.48)
b) Time deposits	275042.80	337418.90	402137.80
		(+22.68)	(+19.18)

Note : Figures in brackets indicate percentage changes over A=Actual

forecast the M2. Series of monetary aggregates data is used in this exercise. Seasonality also captured for forecasting of M2 using ARIMA. Steps to forecast the M2 are as follows:

At the outset we need to examine the time series data of M2 whether it is stationary or not. By computing the autocorrelation function (ACF) and the partial autocorrelation function (PACF) this step can be executed verifying the correlogramms of M2 as diagnostic tool.

In the first order we need to find the stationarity of M2 time series data.

The ACF and PACF of the stationary time series imply that M2 is autoregressive and the model can be estimated.

To find out the white noise residuals of the model are also examined. A fundamental problem in time series analysis is to test for white noise (or lack of serial correlation). In statistical modeling, diagnostic checking is an integrable part of model building. A common way of testing the adequacy of the proposed model is by checking the assumption of white noise residuals. Systematic departure from this assumption implies the inadequacy of the fitted model. Thus testing for white noise is an important research topic and it has been extensively studied in the literature of econometrics and statistics.

Finally, we get the forecasted quarterly value of M2 with 95 percent confidence limit. Comparative scenario can be instituted in Table-2.

The value of auto regressive integrated moving average for M2 is ARIMA(1,1,0). Autoregressive with integration is calculated in this regard. The value of moving average is zero due to non incorporation in the forecasting technique. Bangladesh M2 data is non-stationary in the first order differentiation observed from the correlogram spike. Stationarity of M2 is found in the second order differentiation. The spike is gradually die-off (Sayed 2004). ARIMA(BJ) model produces best forecast for broad money and private sector credit based on the lowest MSE and RMSE (Rahman 2007).

Forecasting of private sector credit of M2 and currency using ARIMA procedure can also be attainable as it is auto regressive. NFA of M2 and RM, government sector credit, claims on DMBs and time deposits are deterministic. As a result prediction of these elements is unyielding using random technique.

Table 2:

(Taka in crore)

FY 2001-2002	Forecast	Lower	Upper	Actual
September	89018.0	87606.0	90429.0	88414.5
December	94111.0	92214.0	95474.0	94364.0
March	95115.0	92724.0	97505.0	93398.7
June	99404.0	96614.0	102194.0	98616.0

Determination of seasonality of M2

Ratio to moving average method is used to identify the monthly mentioned ARIMA seasonality of M2. Historical data is considered in this succession.

1. The moving averages coverage is 12-month centred on the current observation.
2. By computing ratio to moving average of all the months separately we get the Seasonal Index (SI).
3. Averaging the seasonal Index (S1) and adjusting it with correction factor (CF) Adjusted Seasonal Index (ASI) for M2 can be generated.
4. Dividing the actual data of M2 by ASI and multiplying it with 100 we get the deseasonalised data of M 2. Monthly seasonal index of M2 is shown in Chart-1.

In the seasonal index oscillation is found for the month of June and December. For the surge of M2 during the mentioned period seasonal factor need to understand. Proper seasonal treatment is required to incorporate to watch in-depth each variable of monetary aggregates for monetary programming of Bangladesh.

Reserve money program in brief

In the NDA of RM (Table-3) claims on DMBs depend on liquidity need maintained through repo, refinancing program and loan. Refinancing is provided to export and small and medium enterprise (SME) for poverty alleviation



generating employment. The growth programmed in this sector 10.29% at the end of June, 2012. The government sector credit is programmed 20.31% growth subject to over draft (current) and overdraft (blocked) account adjustment and loan requirement of the government for supporting development works. The government deposits all its cash balances with BB free of interest. BB provides up to Tk. 2000 crore for day to day operation of the government using wage and means account with reverse repo rate (5.75%) as government has taxing capacity. Government can borrow money through overdraft paying reverse repo rate plus one percent (6.75%) with seigniorage effect and inflation. 91-Day government treasury bill rate is applicable for government blocked account loan taken through over draft from BB. Claims on other public sector include SOEs elaborated in the SBS. According to exercise improvement of balance sheet position of SOEs is expected during FY 2011-12.

BBs other item (net) comprises among others interest suspense account of unclassified assets Asian Clearing Union (ACU) and IMF Trust Fund (PRGF) of foreign liabilities. IMF loan increasing liability contributes in gross foreign exchange reserve building.

Gross foreign exchange reserve US\$ 10111.0 million for end February 2012 covering different foreign currency (USD, pound, euro and other currency totalling US\$ 8717.0 million), SDR holdings (US\$727.61 million), Gold (US\$654.08 million), reserve position in the IMF (US\$0.66 million) and other foreign accounts (US\$11.77 million). Exchange rate of end June 2011 is used in this calculation to comprehend the erosion of foreign exchange over time in the BOP frontier. Appreciation of Dollar against SDR for instance will generate less amount of Dollar in a contract with the IMF. The gross foreign exchange reserve using current market rate is US\$ 10066.77 million for end February 2012. The NFA of BB is equivalent to gross foreign exchange reserves deducting liabilities includes for example Asian Clearing Union (ACU) balance, project FC account and FC clearing account.

Following monetary aggregates RM and M2 liabilities side currency figure is stochastic. Currency data of different period shows it's positively related to transaction demand with respect to GDP and inflation and inversely related to interest rate of banks and national savings certificates (NSC). Precautionary demand for money represented by broadly demand deposit (checking account) of real money balance (M1) is positively related to income. Speculative demand (time deposit) is inversely related to interest rate. It may be pointed out that printing of notes (Taka) for a year depends on GDP growth, inflation rate and amount of torn notes. Financial innovations include debit card, credit card and

Table 3 : Reserve money program

(Tk. in crore)

Particulars	Outstanding stock		
	June, 2010 A	June, 2011 A	June 2012
	1	2	3
Net Foreign Assets of Bangladesh Bank	61204.90	61388.70	58059.50
		(+0.30)	(-5.42)
Net Domestic Assets of Bangladesh Bank	19305.40	36112.20	51166.90
		(+87.06)	(+41.69)
Claims on Govt.(net)	22320.60	32049.70	38558.20
		(+43.59)	(+20.31)
Claims on other public	830.70	736.70	684.00
		(-11.32)	(-7.15)
Claims on DMBs	6613.90	18608.80	20524.10
		(+181.36)	(+10.29)
Other items (net)	-10459.80	-15283.00	-8599.40
		(+46.11)	(-43.73)
Reserve money	80510.30	97500.90	109226.40
		(+21.10)	(+12.03)
Currency Issued	50465.40	60526.90	63882.21
		(+19.94)	(+5.54)
i) Currency outside banks	46157.10	54795.10	57883.31
		(+18.71)	(+5.64)
ii) Cash in tills	4308.30	5731.80	5998.90
		(+33.04)	(+4.66)
Deposits held with BB	30044.90	36974.00	45344.19
		(+23.06)	(+22.64)
Of which: Excess reserves	12402.90	11849.00	12406.19
		(-4.47)	(+4.70)
Reserve money multiplier	4.51	4.52	4.74

Note: Figures in brackets indicate percentage changes over end June.

mobile banking reducing the amount of cash demand. DMBs maintain reserves with BB for daily transaction consequences. DMBs target is to acquire marginal efficiency in terms of keeping minimum reserves in Taka denomination. DMBs demand and time deposits 6% (CRR) along with foreign currency clearing account balance is preserved as reserves in the balance sheet of BB. To avoid the liquidity shortfall arising from cheque clearing DMBs retain Taka with BB more than cash reserve requirement (CRR). For liquidity management purpose excess

reserves is calculated deducting CRR from local currency balance. Growth in currency reduces the excess reserves of DMBs. Largely deposit growth depends on financial engineering.

High currency deposit ratio and reserve deposit ratio lower the money multiplier increasing high powered money (RM). Accordingly OMO, repo, reverse repo and foreign exchange sale/purchase is deployed allowing for short term liquidity management and keeping the desired rates. Auction of government treasury bills and bonds is used for debt management. These are the indirect instrument of monetary policy. Apart from those direct instruments CRR, SLR, bank rate and discount window is used sparsely. RM is mainly deterministic. BB reins M2 through money multiplier. Currency deposit ratio and reserve deposit ratio elements of liability side of M2 and RM determine the magnitude of money multiplier. RM is the operating target of monetary policy. Credit to government from the DMBs is complementary (necessary) element. On the other hand claim on government from BB is substitute owing to opportunity cost of funds with seigniorage and inflation effect. Eventually the holders of Taka need to bear the cost of government seigniorage gain. Concentration of asset due to unproductive investment in private and public sector stimulate the income inequalities in the country impacting the benefit of GDP growth.

Money multiplier

Money multiplier of Bangladesh observes volatility in some cases influencing interest rate, exchange rate and inflation. Currency deposit ratio (c/d) and reserve deposit ratio (r/d) determines the magnitude of money multiplier. Deposit growth depends on currency demand and financial engineering. The monetization rate in Bangladesh is fifty percent of GDP in relation to interest rate sensitivity and its pass-through in the economy. Currency is a random factor. Excessive government borrowing from BB enlarge the RM creating volatility in money multiplier. Money multiplier can enter solving $(1+c)/(r+d)$. Programmed currency and deposit amount for end June 2012 is Tk. 57883.31 crore and Tk.459370.29 crore. Reserve amount Tk.51343.09 crore contains cash in tills and balances with BB. To arrive money multiplier 4.74 for end June 2012 the calculated c/d is 0.1260 and r/d is 0.1118.

Section III

Balance of payments accounts program in a nutshell

Export and import growth for FY 2011-12 is programmed 10.88% and 9.78% (Table-4) correspondingly keeping the momentum of the economy. Workers remittance is expected to uphold stable growth at 10.01%. As a result US\$ 994 million will be surplus in the current account. MLT loans expected to generate US\$ 1021 million (Table-4) in the financial account channelizing pipeline credit. Other long-term loan (net) will reach at US\$ 55 million at the end of June 2012. DMBs contribute about US\$ 138 million. Altogether the overall deficit US\$ 406 million is intended. Decrease of BBs asset position US\$ 360 million and liabilities number US\$ 46 million is calculated in this regard.

According to IMF Balance of Payment Manual (BPM-6) Income and Current Transfer head of BPM-5 will be termed as Primary Income and Secondary Income of Current Account Balance (CAB). There is also among others difference in sign treatment between BPM-5 and BPM-6 for debit and credit entry. Export of Trade Balance is compiled using Export Promotion Bureau (EPB) data on value of goods without shipment cost (f.o.b. price). BB data is used for calculation of Import at f.o.b. (freight on board) price. Service head Debit mainly includes transportation and travel cost for instance comprising medical and education cost abroad. FDI, Portfolio Investment, Other long-term and Short-term interest is included in the Debit account of Primary Income. Grant component Food aid and Commodity aid is included in the Official Transfers of Secondary Income of CAB.

Project aid is integrated in the Capital Account. Portfolio Investment relates to investment in the capital market. FDI is the most precious investment of Financial Account. Financing through Economic Relations Divisions such as loan from World Bank, ADB or other agencies together with specific country is counted in the Medium and Long Term Loans head of Financial Account. Other long-term loans (net) speak about private sector loan. Bangladesh Petroleum Corporation loan is built-in Other short-term loan account. Difference between EPB and BB export data is known as Trade Credit (net). Difference mainly relating to export and import of Export Promotion Zone (EPZ) is captured in Other Assets account. Reporting error and exchange rate difference is reflected in the Errors and Omissions account of Financial Account. Negative sign in the Asset side of BB means decrease. Negative sign indicates increase of Liability. Overall Balance of BOP emerges deducting Asset from Liabilities of BB allowing BPM-6.

Table 4 : Balance of Payments Program

Particulars	FY 2010-11@A	FY 2011-12@@
Trade balance	-7328	-7792
Exports f.o.b(including EPZ) 1/	23008	25512
		(+10.88)
Imports f.o.b(including EPZ)	-30336	-33304
		(+9.78)
Services	-2398	-2340
Credit	2570	2672
Debit	-4968	5012
Primary income	-1354	-1514
Credit	119	129
Debit	-1473	1643
Of which:Official interest payment	-220	163
Secondary income	12075	12640
Official transfers	127	140
Private transfers	11948	12500
of which : Workers' remittances	11650	12816
		(+10.01)
Current account balance	995	994
Capital account	600	696
Capital transfers	600	696
Others	0	0
Financial account	-1584	-2031
i) Foreign direct investment(net)	768	912
ii) Portfolio investment (net)	-28	16
iii) Other investment(net)	-2324	-2959
MLT loans 2/	1051	1021
MLT amortization payments	-739	811
Other long-term loans (net)	-101	55
Other short-term loans (net)	531	-112
Trade credit (net)	-1895	-1953
Other assets	-1011	-1297
DMBs & NBDCs(net)	-160	138
Assets	-452	-80
Liabilities	292	58
Errors and omissions	-936	-65
Overall balance	-925	-406
Reserve assets	925	406
Bangladesh Bank(net)	925	406
Assets	749	-360
Liabilities		
	176	46

Section IV

Determination of interest rate, foreign exchange rate and inflation as policy variable

Interest rate : Rise in interest rate augment the duration gap of assets and liabilities of DMB's reducing the equity value. Higher duration gap is responsible for more volatility. Therefore, DMB's maintain lower capital of their risk weighted assets in Tier 1 and Tier 2 according to Basel II. Proper interest rate lowers the volatility. Higher inflation leads to more currency demand at hands, which may expedite liquidity crisis in the DMB's. Productive investment of resources and planned government borrowing will contain the inflation with higher economic growth. Narrow spread (less than 5%) of deposit and lending rates of banks is indispensable for investment. Prevailing fixed deposit (term deposit) rate for six months tenor 12.50% is ample to attract local currency and foreign funds in the banking system. Bangladesh observed stable money demand function with limited short term fluctuation and long run convergence. Dhaka inter-bank offered rate (DIBOR) is calculated for near term and far term settlement accepting rational expectation. Surge in inter-bank call money rate is addressed using OMO of BB. Organized secondary market trading of government treasury bills and bonds improving liquidity may lower the interest rate. To reduce the currency growth and mobilize the marginal savings risk free instrument of Directorate of National Savings (DNS) has role in Bangladesh. Research reveals that comparing India and Pakistan DNS rates need to be maintained more than 200 basis points of current January 2012 inflation rate (10.91%). Productive investment in the country will increase the GDP growth containing inflation.

Foreign exchange rate : Bangladesh adopted floating foreign exchange rate partially in the capital account of BOP in 2003. Since then the exchange rate is determined through demand and supply of market forces. BB intervenes in the market considering seasonality and special need of the economy. BB uses inter-bank foreign exchange minimum rate for instance Tk.81 for buying from DMB's. Maximum rate for example Tk.82 is used for selling. Volatility in the foreign exchange market largely surface from Bangladesh Petroleum Corporation (BPC) import payment. Bangladesh spends by and large US\$6 billion in a year for fuel import. DMB's are allowed to preserve 15% foreign exchange of their risk weighted assets of Tier 1 and Tier 2 of Basel II. Taka-Dollar and cross currency SWAP and forward transaction comprises near leg and far leg is allowed accommodating comparative advantage and rational expectation. DMB's also use long (covered purchase) and short (uncovered sell) according to their foreign

exchange limit determined by BB. Increase in overall net short position enhances the foreign currency demand rising exchange rate in the market.

BB internally uses REER (real effective exchange rate) based exchange rate to monitor the competitiveness of Taka. REER based exchange rate Tk.71.12 arrives multiplying NEER (nominal effective rate), relative price index and market exchange rate and dividing the term with 100. $[71.12 = (56.3 \times 1.55 \times 81.5) / 100]$. To boost up export and remittances devaluation is followed considering the need of the economy. Devaluation or appreciation of Taka comes up calculating deviation of current rate (Tk. 81.5) from the base period rate (Tk.70). The calculation procedure may be mentioned as $((\text{base rate} / \text{current rate}) - 1) \times 100$. Considered devaluation rate for a particular time is 14.11% $((70/81.5) - 1) \times 100$.

Inflation rate : The paper is concern with the safe limit of monetary expansion (quantity of money) and RM subject to GDP containment for effective controlling of inflation. Increasing rational level of RM and monetary (M2) expansion over seventeen percent level (eight percent inflation, seven percent real GDP and two percent change in income velocity), which is the safe limit may fuel inflation. Balanced NDA of RM along with NFA produces effective result to limit inflation. External sector overall balance of BOP through NFA impacts the M2, RM and inflation as well. Accommodating the impact of savings and investment Bangladesh follows balanced growth in expansion of NDA and NFA of RM containing inflation in single digit in current decade. Besides savings and investment to understand the causes of inflation expenditure through annual development program (ADP) has significant role in balancing demand and supply of the country. It may be noted that monetary and fiscal policies action in curbing inflation is reflected in the NFA and NDA of BB and M2 balance sheet. Undesired monetary or fiscal expansion increases the inflation through RM channel affecting financial deepening. Unplanned borrowing from BB and commercial banks may positively impact the inflation.

Section V

Conclusion

Model on monetary programming suggests BBs practice of demonstration of asset side programming of M2 and RM in MPS is partial. For plain and fair monetary policy with proper due diligence publication of comprehensive monetary programming of Bangladesh is important. Less fabrication in calculating demand and supply side of monetary policy with low time series data lags and maintaining

maximum degree of freedom is the essence of publicly presenting asset and liability side prudent monetary policy in Bangladesh. Liability side currency deposit ratio and reserve deposit ratio is needed to observe money multiplier trends. Assets side NFA of RM and M2 is deterministic variable. Increase in FDI and MLT loans can generate more surpluses in the overall balance of BOP improving NFA of BB. In order to improve the ability of payment and asset quality mix in RM foreign exchange reserves more than three months of import payment is vital following credit rating of the country. Private sector credit of M2 is random variable. Housing loan, auto loan, crop loan, credit card to the common people like developed country encouraging financial inclusion as well as monetization in Bangladesh. Currency data of different period shows it's positively related to transaction demand with respect to GDP and inflation and inversely related to interest rate of banks and national savings certificates (NSC). Precautionary demand for money represented by broadly demand deposit (checking account) of real money balance (M1) is positively related to income. Speculative demand (time deposit) is inversely related to interest rate.

Credit to government from the DMB's is complementary (necessary) element. At the same time, claim on government from BB is substitute owing to opportunity cost of funds with seigniorage and inflation effect. Eventually the holders of Taka need to bear the cost of government seigniorage gain. On the other hand, government deposits all its cash balances with BB free of interest. The opportunity cost of money in Bangladesh is virtually limited to housing, land and crops. Unplanned investment channelizing private and government sector will inflate the real asset and commodity prices creating income inequalities in the country. Claims on DMB's in RM depend on liquidity need and refinancing to export and SME for employment generation. Other item (net) component of RM and M2 is quadratic nature bearing two different sign randomly. Liability side component currency growth is stochastic variable. Excess reserves reported in the RM liability side demonstrate the marginal efficiency of DMB's. Excess reserves depend on BBs policy factor for instance CRR and financial engineering. Government sector credit is crucial, which is treated as come forward ad hoc basis encouraging the economic activities of the country. Government can borrow money through overdraft from BB as government has taxing ability. This amount increases the NDA of BB and high powered money generating volatility in money multiplier and economic rates of the economy. Amortization and gradual securitization of government debt taken through overdraft from BB may improve the balance sheet of central bank enhancing market dynamics. In the external sector affairs the book value relating to interest rate encouraging financial

intermediation is not authenticated to some extent. It is influenced by asymmetric information and moral hazard, which is covered by insurance company addressing inflated book value (asset bubble) arising from subprime lending in the housing sector. EU countries among others are concern with austerity issue and recapitalization of banks. These countries are experiencing more government expenditure comparing income. At the same time, due to near term uncertainty the demand is not strong enough in the developed countries encouraging economic growth. This global frontier outcome is largely impacting the NFA of RM in Bangladesh.

References

1. Ahmed, Nasiruddin (2012) "The Demand for Money in Bangladesh During 1975-1997: A Cointegration Analysis" *Indian Economic Review*.
2. Akhtar Hossain and Anis Chowdhury (1996) "Monetary and Financial Policies in Developing Countries"
3. Ali, Muhammad Mahboob and Islam, Anisul M (2012) Money Supply Function for Bangladesh: An Empirical Analysis" working paper No. AIUB-BUS-ECON-2010-01.
4. Arby, M.F.(2000), Predicting Money Multiplier in Pakistan: Pakistan Development Review, Spring, 39(1), pp.23-35.
5. Baghestani, H. and T. Moot (1997), "A Co-integration Analysis of the U.S. Money Supply Process", *Journal of Macroeconomics*, 19(2), April, pp.269-283.
6. Berry, Christopher, (1994) *The Idea of Luxury: A Conceptual and Historical Investigation*, Cambridge.
7. Bomhoff, E.J.(1997), "Predicting the Money Multiplier: A Case Study for the US and the Netherlands", *Journal of Monetary Economics*, 3 July, pp.325-345.
8. Crockett, Andrew (2011). "Learning the Lessons of the Crisis for Supervision." *Better Supervision and Better Banking in a Post-Crisis Era*. Kuala Lumpur.
9. Caselli, Francesco and John Coleman (2006), "The World Technology Frontier", *American Economic Review*, June
10. Davies, Glyn, (1994) *History of Money*, Cardiff
11. Evan, Charles (2010). "Monetary Policy in a Low-Inflation Environment: Developing A State-Contingent Price Level Target." *Federal Reserve Bank of Chicago*.
12. Ford, J.L.and J.L.Morris (1996), "The Money Multiplier, Simple Sum, Divisia and Innovation-Divisia, Monetary Aggregates: Cointegration Tests for the United Kingdom", *Applied Economics*, 28, June, pp. 705-714.
13. Gujrati, D.N. 1968. "The Demand for Money in India", *Journal of Development Studies*, October, pp. 59-64.
14. Gujrati, D.N. 2003. *Basic Econometrics*, Fourth Editions, McGraw Hill.
15. Hassan, M. Kabir, Muhammad Mustafa and Syed Abul Basher (2003), "The Money Supply Process in Bangladesh: An Error-Correction Approach", *Indian Journal of Economics*.
16. Heller, H.R. and Khan, M.S. 1979. "The demand for money and the term structure of interest rates", *Journal of Political Economy*, Vol.87, No.1,pp.109-129.
17. Hossain, A. 1993. "Financial reforms, stability of the Money Demand function and monetary policy of Bangladesh: An Econometric Investigations", *Indian Economic Review*, Vol 28, No.1, pp. 85-100.

18. Hossain, Ismail, M. Hye, Syed, A. and Ali, Amin, Muhammad (1998). "Structural Adjustment Policies and Labour Market in Bangladesh" Centre on Integrated Rural Development for Asia and Pacific. ISBN-984-8104-24-1
19. Henry, Peter (2007). "Capital Account Liberalization: Theory, Evidence, and Speculation", *Journal of Economic Literature*.
20. Ho, W.S (2003). "Money Demand in Macao and its Estimation" Monetary Authority of Macau
21. Islam, Anisul M. (2000) "Money Demand Function for Bangladesh" *Bangladesh Development Studies*, Vol. XXVI, December 2004.
22. Jahan, S. 1998. "Estimate of demand for money in Bangladesh and its implication in monetary policy", *Bank Porikroma*, Vol.23, no.2, pp.106-117.
23. J. Hicks (1989) *A Market Theory of Money*
24. Johannes, J. M. M. and R.H. Rasche (1979) "Predicting the Money Multiplier" *Journal of Monetary Economics*, 5, pp. 301-325.
25. Judd, J.P. and Scadding, J.L. 1982. "The search of a stable money demand function: A survey of the post 1973 literature", *Journal of Economic literature*, Vol.20, pp.993-1023.
26. Ladler 1959. "Some Evidence on the Demand for Money", *Journal of Political Economy*, June, pp. 55-67.
27. Murti, G.V.S.N. and Murti, S. 1978. "The functional form of demand for money in Bangladesh", *Bangladesh Development Studies*, Vol.6, No.4, pp. 443-460.
28. Miron, Jeffrey A (1994) *Empirical methodology in macroeconomics: explaining the success of Friedman and Schwartz's 'A monetary history of the United States, 1867-1960.'* *Journal of Monetary Economics*.
29. Mateos y Lago, Isabelle et al. (2009) "The Debate on the International Monetary System", IMF Staff Position Note No. 2009/26.
30. Park, Y.C.(1980), "The ability of the Monetary Authorities to Control the Shock of Money in LDCs" in W.L. Coats, Jr and D.R. Khatkhate (eds.), *Money and Monetary Policy in Less Developed Countries*, Pergamon Press Ltd. London.
31. Phillip Cagan (1958) "The Demand for Currency Relative to Total Money Supply" Occasional Paper 62, National Bureau of Economic Research, Inc.
32. Rahman Atiur & Razzaque Abdur (2000) "On Reaching the Hardcore Poor: Some Evidence on Social Exclusion in NGO Programmes". *The Bangladesh Development Studies*, Volume XXVI No. 1.
33. Rahman, Md. Habibur and Younus, Sayera (2007), "Forecasting Some Key Macroeconomic Variables in Bangladesh", Bangladesh Bank, Policy Analysis Unit (PAU) WP 0714.

34. Sayed, Imam Abu(2001) “Money Supply Process in Bangladesh: An Empirical Analysis”. Journal of Political Economy Vol. XV, Bangladesh Economic Association.
35. Sayed, Imam Abu (2004) “Global Integrated Financial Market and Forecasting of M2 in Bangladesh”. Bangladesh Economic Association periodicals.
36. Sylla, Richard (1995) “Three centuries of finance and monetary control in America”. The Journal of Economic History.
37. Taslim, M.A. 1984. “On rate of Interest and Demand for Money in LDCs: the case of Bangladesh”, Bangladesh Development Studies, Vol 12, No.3, pp.19-36.
38. Taslim, M.A. and Chowdhury, A. 1995. “Macro economic analysis: for Australian Students” Prentice Hall, Australia.
39. Taslim, M.A. 1983. “On rate of Interest and Demand for Money in LDCs: the case of Bangladesh”, The Bangladesh Development Studies, Vol 12, No.3, pp.19-36.
40. Vilar, Pierre, (1976) A History of Gold and Money, New York: Verso: 1991
41. Vinals, Jose et al (2010). “Shaping the New Financial System”, IMF Staff Position Note
42. W. T. NEWLYN(1962) “Theory of Money” Clarendon Press- OXFORD
43. White, William, and Claudio Borio (2004). “Whither Monetary and Financial Stability? the Implications of Evolving Policy Regimes.” Bank of International Settlements.
44. Xiaofeng Shao (2011) “Testing for white noise under unknown dependence and its applications to diagnostic checking for time series models”, University of Illinois at Urbana-Champaign.
45. Yu, Han (2009). “An Empirical Analysis of the Money Demand Function in ASEAN-5” International Research Journal of Finance and Economics, ISSN 1450-2887 Issue 33.
46. —————Investigation of Phillips Curve In South Asian Economies
Economics Essay
<http://www.ukessays.com/essays/economics/investigation-of-phillips-curve-in-south-asian-economies-economics-essay.php#ixzz2uOsgnYTg>.
47. World Bank, 2002 and Bangladesh economic review, 2005, 2010. (poverty level data)
48. <http://data.worldbank.org/indicator/NE.GDI.TOTL.ZS> (gross investment as % of GDP)
49. <http://data.worldbank.org/indicator/SI.POV.GINI> (GINI index)

A Relational Study on Banks' Overall Service Quality, Product Quality, Corporate Social Performance and Bank Reputation in the Context of Private Commercial Banks in Bangladesh

MIHIR KUMAR ROY*
SAZZAD HOSSAIN**

Abstract *This research plans to investigate the effect of banks' overall service quality, product quality, and corporate social performance on bank reputation within the context of private commercial banks of Bangladesh. Here, banks' overall service quality, product quality and corporate social performance are considered as the independent variables and bank reputation is considered as dependent variable. The survey administered 80 questionnaires given to clients and employees of ten private commercial banks of Bangladesh. The SPSS version 11 software was employed in this study for data analysis. Correlation analysis and stepwise regression were performed to assess the hypothesis. The correlation analysis produced precise support to prove almost all the hypotheses but the stepwise regression provided partial support to the hypothesis. After successfully analyzing the gathered information, it was found that all the measured independent variables (i.e., overall service quality, overall product quality, and corporate social performance) were statistically and significantly correlated with bank reputation.*

Key Words: *Overall Service Quality, Product Quality, Corporate Social Performance, Bank Reputation*

* Graduate Student, Department of Business Administration, City University, Dhaka .

** Professor & Dean, Faculty of Business Administration, City University, Dhaka.

Introduction

Bank is a institution that is contributes to economic development as well as plays a vital role of financial intermediary of a country. Bank is treated as an important service industry in modern world. But due to globalization and free market economy, this industry is facing severe competition in Bangladesh, and implementation of the clauses of WTO has further increased this competition. Banking sector in Bangladesh can be divided mainly into four categories viz., Nationalized Commercial Banks, Local Private Commercial Banks, Specialized Financial Institutions and Foreign Banks. At present there are 49 scheduled banks operating in Bangladesh.

Of these 4 are nationalized commercial banks, 5 are specialized banks, 30 are local private commercial banks, and 10 are foreign banks. However, despite many fundamental banking reformations, domestic banks are lagging behind foreign commercial banks of capitalization, overseas network, modern management expertise, experience, technological advancement, etc. That result in the domestic banks, relative weakness in service quality and product quality as compound to foreign banks. So there is inevitable competition among domestic and foreign banks because foreign banks are capable of meeting the growing demand for innovative products and services of high quality by customers, who are becoming increasingly knowledgeable about bank services and products. As a result domestic banks are now very strictly focusing on improved service quality and innovative products in order to enhance their reputation and increase profits. As Julian and Ram ashen, 1994 said, delivering quality services and products to customers is essential for success and survival of today's competitive banking environment. The provision of products and services of high quality enhances reputation, improves customer retention, attracts new customer through word of mouth, and increase financial performance, and profitability. So it is important for any retail bank in Bangladesh to understand the main drivers of Bank reputation as well as to take effective measure to improve both service and product quality which will enhance their reputation and thus attract a large share of valued and reliable customers, and maintain a sustainable competitive advantage in the long run (Wan et.al., 2003).

Statement of the Problem

The present research intends to investigate the effect of overall service quality, overall product quality and corporate social performance on bank reputation in the context of private commercial banks of Bangladesh. Previous research (Wang,

et.al., 2003) conducted on several banking industries in China reveals the importance of overall service quality and overall product quality in the development of bank reputation and a relationship among overall service quality, overall product quality, and bank reputation. In the current study, the researcher utilizes the study of Wang, 2003 with an added variable, corporation's social performance, to investigate such relationship. In the context of commercial banks of Bangladesh no such studies were previously carried on this topic.

Purpose of the Study

The purpose of this study is to present and test the model, which identifies the relationship among bank's overall service quality, overall product quality, corporate social performance and bank reputation within the context of the banking industry Bangladesh.

Review of Related Literature

Overall service quality

Quality of service is essential for customer satisfaction (Cronin and Taylor, 1992; McAlexander et al., 1994), repeat purchases (Schneider and Bowen, 1995), and winning customer loyalty (Zeithaml et al., 1996), and customer retention (Zeithaml et al., 1996). It also

affects companies' market share, and thus profitability (Schneider and Bowen, 1995). Service quality has been the subject of considerable interest by both practitioners and researchers in recent years, spurred by the work by Parasuraman, Zeithaml and Berry, (1985).

An Important reason for the interest in service quality by practitioners results from the belief that it has a beneficial effect on bottom line performance for the firm. Definition of service quality revolved round the idea that it is the result of comparison that customers make between their expectations about a service and their perception of the way the service has been performed (Lewis and Booms, 1983; Lehtinen & Lehtinen, 1982; Gonoroos, 1984; Parasuraman et al, 1985, 1988, 1991, 1994). Lehtinen and Lehtinen (1982) gave a three dimensional view of service quality. They see it as consisting of what they term "interaction", "physical" and "corporate" quality. Traditionally, service quality has been defined as the difference between customer's expectation of service to be received and perception of service actually received. (Gonoroos, 1984; Parasuraman et al, 1988, 1991). Furthermore Dabholkher et al. (2000) suggested that it is better to consider factors associated with service quality like reliability and responsiveness

as being antecedents of customer's perceptions of service quality as dimension and components of the construct. Wang et. Al., 2003 measured service quality by customer perception only through the SERVPERF model (Cronin and Taylor,1992). These authors in their study proposed that tangibility, reliability, responsiveness, assurance and empathy of service have a positive impact on customer perception of service quality. Furthermore service quality is often conceptualized as the difference between customer's expectation of service to be received and perception of service actually received (Gonoroos, 1984; Parasuraman et al, 1988, 1991) and this construct is used in this study to define overall service quality.

Overall product quality

Researcher found several different conceptualizations of product quality. According to Wang, et. al. (2003), in marketing and economics literature quality has been viewed in terms of products attribute. In contrast, in the field of operations management, quality defined as having multiple dimensions such as fitness of use (whether the product does what it is supposed to do, and whether it possesses features that meet the needs of customers), reliability (to what extent the product is free from deficiencies). From service point of view Parasuraman et al (1988) defined product quality as an overall assessment. Garvin (1988) defined product quality in a very comprehensive manner. According to Garvin, overall product quality comprises the following eight attributes: performance, features, conformance, reliability, durability, serviceability, aesthetics, and customer perceived quality. In brief: performance means a product's primary operating characteristics, features refer to the additional features (or the bells and whistles) of the product, conformance represents the extent to which a product's design and operating characteristics meet the established standards, reliability indicates the probability that a product will operate properly over a specified period of time under stated condition of use, durability means the amount of use the consumer gets from a product before it physically deteriorates or until a replacement is preferable, serviceability refers to the speed, competence and courtesy of repair, aesthetic refers to how a product appeals to the five senses, customer perceived quality indicates the customer's perception of a product's quality, based on the reputation of the corporation. This researcher utilizes the definition of Garvin (1988) for this study.

Corporate social performance

The concept of corporate social performance evolved from the concept of corporate social responsibility and corporate social responsiveness, which responded to questions regarding organization's social responsibilities and how these should be enacted. According to Wood's (1991) definition, corporate social performance is a business organizations configuration of principles of social responsibility, processes of social responsiveness, policies, programs and observable outcomes as they relate to firm's societal relationship. Zeller, Lapenu and Greeley, (2003) stated that the social performance of an organization (whether a private-for-profit firm, cooperative or NGO) comprises the relations of the organization with its clients and with other stakeholder groups. Social performance is not equal to social impact, i.e. the change in welfare and quality of life (in all of its dimensions) among clients and non-clients (and the wider local, national and global community) due to the activities of an organization. The measurement of social performance involves investigating the structure of an organization (i.e. mission, ownership, management principles, relation to and care for its staff) and its conduct in the market and local and wider community such as services, products, market behavior, other relations with clients and other stakeholders, including community and social/political organizations.

Furthermore, based on Davi's (1973) iron law of responsibility, the principle of corporate social performance incorporates the principle of legitimacy, whereby the society has the right to define an organization's legitimate functions such as the principle of public responsibility, where an organization must take responsibility of social problems that are related to their business operation (Preston and Post, 1975) and the principle of managerial discretion, which recognized that business decision & are made by moral human actors (Carroll, 1979). For this study, the definition of Wood (1991) will be used to define corporate social performance.

Bank reputation

Reputation plays an especially vital role in service markets because, the pre-purchase evaluation of service quality is necessarily vague and incomplete. It is apparent that bank reputation also plays an important role in the determining of purchasing and repurchasing behaviors of customers (Wang, et.al., 2003). According to Barich and Kotler, 1991 customer loyalty is similarly enhanced especially in retail banking industry where quality cannot be evaluated accurately before purchase. It is also widely acknowledged that a positive reputation is a

strategic factor that can be employed to earn above average profit (Weigelt and Camerar, 1988). Nguyen and Leblenc (2000) defined reputation as an effective means of predicting the outcome of the service production process and can perhaps be considered the most reliable indicator of the ability of a service firm to satisfy a customer's desires. Economists have analyzed issues of reputation in relation to product quality and price shapiro, 1983). Researchers in marketing have considered reputation under the rubric of brand equity or customer equity and have associated it with the credibility of the firm (Aaker, 1996; Rust et al, 2001). Gatewood et al, (1993) and Shapiro (1983) described reputation as a combination of tough competitor, providing a good place to work and having quality products. A good reputation among different stakeholders provides several benefits such as higher customer retention (Preece et. al., 1995) thus increasing repurchases and higher product prices (Shapiro 1983) both which lead to higher income as well as lower costs via reduced personnel fluctuation (Dowling, 1986; Eidson and Master, 2000; Preece et al, 1995; Nakra 2000). Finally reputation is a result of the past action of a firm and can be viewed as a mirror of the firm's history of communicating to its target group information about the quality of its product in comparison with those of competitors, thus reflecting what stakeholders think and feel about the firm and indicating that the organization is highly esteemed, worthy and meritorious (Weigelt and Camerer, 1988; Hall, 1993). This researcher uses the definition of Nguyen and Leblenc (2001) to define bank reputation for this study.

Relationship between bank's overall service quality and reputation

Reputation plays an important strategic role in service markets because the pre-purchase evaluation of service quality is vague and unpredictable (Barney 1991; Hall 1993). So according to et.al., Wang (2003), it is apparent that quality of service and product not only benefit by lowering cost through reduced waste and decreased deficiencies in products and services, but also by increasing competitiveness through the establishment of a good reputation. Rao (1994) claims that the reputation is a result of financial performance, production quality, service quality, management effectiveness or some combination of these factors that appeal in one way or another to a firm's multiple constituencies. So it is widely agreed in all manufacturing as well as service industries that improvement in service quality will certainly contribute to a positive reputation. Finally the following hypothesis was proposed by wang et. al. (2003) 'banks overall service quality has a positive impact on bank reputation.

Relationship between bank's overall product quality and reputation

Product quality has become a priority of managers if they are willing to build a strong reputation for their firm (Wang et. al., 2003). This is because customers value products as well as services in the course of accumulating the judgment over time about quality, which determines the effectiveness of the reputation building activities of a firm especially in service industries (Nguyen and Leblenc, 2001). So Julian and Ramaseshan (1994) stated that, delivering quality product and service to customer is essential for success and survival in today's competitive banking environment. The provision of products and services of high quality enhances reputation, improve customer retention, attract new customer through word of mouth, and increases financial performance and profitability. Finally the following hypothesis was proposed by Wang et. al., (2003) "bank's overall product quality has a positive impact on bank reputation".

Relationship between corporate social performance and bank reputation

Reputation has recently received increased attention by scholars as an important theoretical construct for the study of corporate social performance (Business and Society, Vol.41, No.4, December 2002, special issue). This has resulted from the recognition that stakeholder's resource allocation decisions are based on an overall evaluation of organization's corporate social performance. Zeller, Lapenu and Greeley, (2003) stated that the social performance of an organization (whether a private-for-profit firm, cooperative or NGO) comprises the relations of the organization with its clients and with other stakeholder groups. On the other hand, reputation is stakeholder's assessment of the credibility of the organization's projection. Reputation therefore comprises a holistic evaluation of organizations image, framed by stake holder's personal value regarding corporate social performance. More specifically, corporate reputation comprises a global perception or net assessment of the organizations social behavior based on stakeholder's instrumental or normative expectation.

Operational Definitions

Summaries of the operational definitions of the measured variables that have been used are listed in Table 1.

Table 1: Operational Definitions of Measured Variables

Measured Variable	Operational Definitions
Bank's overall service quality	defined by Gonoroos (1984)
Product quality	defined by Garvin (1988)
Corporate social performance	defined by Woods (1991)
Bank reputation	defined by Nguyen and Leblenc (2001)

Research Questions

This study investigates the following research questions:

1. Is there any significant relationship between overall service quality of bank and bank reputation in the context of banking industry of Bangladesh?
2. Is there any significant relationship between overall product quality of bank and bank reputation in the context of banking industry of Bangladesh?
3. Is there any significant relationship between corporate social performance and bank reputation in the context of banking industry of Bangladesh?

Hypothesis

The hypotheses derived from the research questions are:

1. There is a significant relationship between overall service quality of a bank and bank reputation in the context of banking industry of Bangladesh.
2. There is a significant relationship between overall product quality and bank reputation in the context of banking industry of Bangladesh.
3. There is a significant relationship between corporate social performance and bank reputation in the context of banking industry of Bangladesh.

Development of Conceptual Framework

The researchers have developed a conceptual frame work for this research using variables, such as banks overall service quality, banks overall product quality, corporate social performance and bank reputation. According to Ticehurst and Veal (2000), a conceptual framework indicates how the researcher views the concept involved in a study, especially the relationship between concepts.

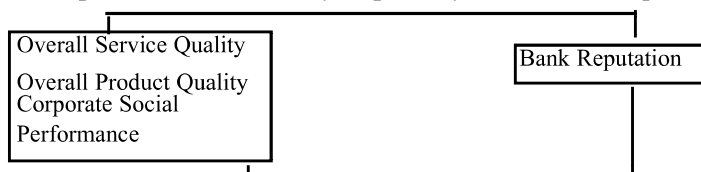


Figure 1. Conceptual Framework of Research Variables and their Relationships

Methodology

Research Design

This study has been designed to test its hypotheses by conducting a co-relational research. The conceptual framework of the proposed model depicts the pattern and structure of the relationships among the set of measured variables. The framework illustrates the name of research variables and their relationships. (Figure 1) In this study the researchers have investigated the relationship between overall service quality, overall product quality, corporate social performance and bank reputation in the context of banking industry in Bangladesh. According to Cooper & Schindler (2003), the research that studies the relationship between two or more variables is referred to as a co-relational study. That is why a co relational research design has been adopted in this study in order to detect the appropriate answers of research question and to test the hypothesis.

The purpose of this study is these to investigate the causal relationship among the measured variables. Here bank's overall service quality, overall product quality and corporate social performance are considered as independent variable and bank reputation is considered as dependent variable. In this research, the researchers intended to identify whether any relationship exists between these measured variables or not. So the research attempts to find out if any changes in the independent variable have any effect on the dependant variable as well, thereby proving that a relationship exists

Research Approach

For purpose of the study, the researchers have gathered information from the clients who maintain regular transaction in their deposit account & those who are taking regular service for inland remittance and foreign exchange. A structured questionnaire was used for the study. The rationale behind administering questionnaire to collect data is :

1. It takes relatively less time to fill up a questionnaire
2. Personal interview is both time consuming & costly
3. The data gathered by questionnaire is easy to put in a quantitative analysis

Sampling Method

The sample of this study was chosen from clients who had taken service from 10 renowned private commercial banks in Dhaka city during the data collection period. The researchers used simple random sampling method to determine the

sample size from the population. Malhotra (2003) categorized simple random sampling as a probability sampling. The sampling frame was the client database of each bank. From this database the researchers collected the name of clients, and from them information was received during the survey period. The list covers all clients of the bank who deposit and withdraw cash on a regular basis. The sample size was 80. In the previous researches conducted on similar topic the sample size was 100 to 200 (Wang, et.al., 2003). But due to time limitation the present researchers only used a sample size of 80.

Survey Instrument

A structured questionnaire was used in this study to collect data from the respondents. The questionnaire is divided into four sections. First section consists of Bank's overall service quality, second section consists of bank's overall product quality, third section consists of bank's corporate social performance and last section consists of bank's reputation.

The first 9 questions have been set to measure the respondents' opinions regarding bank's overall service quality. This scale was taken from Wang et. al., (2003) and has a reliability of 0.89. Questions (10 – 18) measure the bank's overall product quality regarding product convenience and product availability. These have been used by Wang et. al., (2003) and have a reliability of 0.80. The next 2 questions (19 – 20) are expected to measure bank reputation. This has been taken from Wang et. al., (2003) and has a reliability of 0.81. The last 4 questions measure corporate social performance. The scale was developed and used by Quester and Lim (2003) with a reliability of 0.55. For all of these variables, the previous researchers had used 7 point Likert scale starting from 1 for "strongly disagree" to 7 for "strongly agree". Therefore, the researchers have used 7 point Likert scale to measure all these variables.(Please see the Questionnaire in Appendix)

Pilot Test Questionnaire

A pilot test was conducted to detect weakness in designing instruments and to provide proxy data for selection of probability sampling (Cooper and Schindler, 2003). According to Malhotra (2003), pre-testing refers to the testing of the questionnaire on a small sample of respondents in order to identify and eliminate potential problem. The researchers also conducted a pre-test to evaluate the questionnaire for clarity and relevance.

Data Analysis Procedure

Pearson's Correlation analysis was used to find out whether any relationship exists between the independent and dependent variables. After collecting the data, correlation matrix for the variables was prepared and the researchers used stepwise regression to test the strength of associations between the study variables. The Statistical Package for Social Science (SPSS) version 11 was employed to analyze the data collected from the survey.

Results of the study

The results of quantitative analysis of data are presented in table 2

Table 2: Reliability Coefficients and Descriptive Statistics

Variables	Number of Items	Alpha Values	Mean	Std.Deviation
Overall service quality	9	0.9261	5.2167	1.32438
Overall product quality	9	0.9315	4.5028	1.41432
Corporate social performance	9	0.5509	6.1375	0.81024
Bank Reputation	2	0.8049	4.6500	1.56989

n= 80

Table 2 depicts the calculated value of alpha, mean and standard deviation of the studied variables. The questions in the questionnaire to approach the variables were obtained from various articles. The alpha values, means and standard deviations have been calculated by SPSS 11 through input of research data.

The survey was done with a questionnaire having a 7 point likert scale as the response format. The alpha values represent the reliability of each studied variable. The value of alpha ranges from 0 to 1. The nearer the value of alpha to 1, the better the reliability. If the value is low, either there are too few items or there is very little commonality among the items (Churchill, 1979). At the early stages of research, Nunnally (1978) suggested that the reliability of 0.50-0.60 is sufficient, although a coefficient of 0.7 or above is desirable (Hair et al., 1998). The total alpha of the study is 0.9553. Table 2 lists alphas for all variables for private commercial banks in Bangladesh. The means have been calculated by taking the average of all the answers of the questions in each variable. The calculated mean for bank's overall service quality is 5.2167 with a standard deviation of 1.32438. This shows that on an average people think fairly positively about overall service quality as the value is above 4 which is a point that shows the indifference of people's opinions. The mean for overall product quality is

4.5028 and has a standard deviation of 1.41432. So it can be interpreted that respondents generally have slightly positive perceptions about bank's overall product quality. Corporate social performance has a mean of 6.1375 and a standard deviation of 0.81024. This shows that people have a positive perception on corporate social performance. The mean value for bank reputation is 4.6500 with a standard deviation of 1.56989. This gives the idea that the general people have on an above average perception regarding bank reputation. The standard deviation shows how much people's opinion differs from the mean value for each other perception

Table 3: Correlation Analysis

Service quality	Product quality	Social performance	Bank reputation	Overall
service quality	-	0.832**	0.500**	0.809**
Overall product quality		0.335**		0.742**
Corporate Social Performance			-	0.362**
Bank reputation			-	

** . Correlation is significant at the 0.01 level (2 tailed)

A correlation analysis was conducted on all variables to explore the relationship between 2 the independent variables with and dependent variable. The bivariate correlation procedure was subject to a two tailed statistical significance at two different levels, highly significant ($p < .01$) and significant ($p < .05$).

The strength of correlation coefficient (r) is as follows:

0.0 to 0.2	Very weak, negligible
0.2 to 0.4	Weak, low
0.4 to 0.7	Moderate
0.7 to 0.9	Strong, High, Marked
0.9 to 1.0	Very strong, very high.

The results of correlation analysis for all the variables are shown in Table 3. It examines the correlations among bank's overall service quality, overall product quality, corporate social performance, and bank reputation in the context of private commercial banks in Bangladesh. The variable, overall service quality, is significantly and strongly positively correlated with the dependent variable bank reputation ($r = .809$, $p < .01$). Overall product quality is found fairly and positively correlated with bank reputation ($r = .742$, $p < .01$). The variable, corporate social performance, is weakly and positively correlated with bank reputation ($r = 0.362$, $p < .01$). Banks overall service quality is also significantly and positively correlated with bank's overall product quality ($r = 0.832$, $p < .01$). But overall service quality

is very moderately correlated with corporate social performance ($r=0.500$, $p<.01$), and overall product quality is very weakly correlated with corporate social performance ($r=0.335$, $p<.01$).

Table 4: Linear Regression (enter method)

Independent Variables	R	R ² R ²	Adjusted estimate	Std. error of the
Overall service quality	0.820	0.673	0.660	0.91524
Overall product quality				
Corporate So-performance				

In table 4 linear regression shows how much independent variable is influencing dependent variable. From the R² it is very apparent that overall service quality, overall product quality, and corporate social performance have 67.3% influence on bank reputation. In the above table 4 the adjusted R square (R² adj) shows how well the linear combination of independent variables in the regression analysis predicts the percentage of total variance of the dependent variables.

Table 5: Stepwise Regression of Bank Reputation

Dependent variable bank reputation				
Independent				
Variables	B	SE B	β	R ²
Overall service Quality	0.960	0.079	0.809**	0.655

Further, stepwise regression has been shown in order to find out which one of the three components influence the clients to consider as a key antecedent of bank reputation. Table 5 shows the result of the analysis. At this stage, the overall service quality ($p < .01$) is found to be significantly related with bank reputation, while the rest two (Overall product quality, and Corporate social performance) fail to be considered. It implies that the bank's clients still consider service quality as a main driver of bank reputation. Overall product quality and corporate social performance are excluded from the regression equation because they don't have significant association and hence it would not fit into it. From the R² it is apparent that, overall service quality explains 65.5% of the variance of the bank reputation. Regression coefficient (B) reflects the relative impact of IVs on DV. Hair et al. (1998) cautioned that beta coefficients should be used only as a guide to the relative importance of the independent variables included in the equation, and only over the range of values for which sample data actually exist. The beta (β)

value indicates the effect of IVs on DV to the effect on DV of other IVs at each stage, because this value reduces regression coefficient to a comparable unit, the number of standard deviations. Standard Error of the Beta (SEB) coefficient is the standard error of the estimate of beta (B). In case of SEB, a small standard error implies a more reliable prediction.

Assessment of research hypotheses

Hypothesis 1

There is a significant relationship between bank's overall service quality and bank reputation in the context of banking industry of Bangladesh.

The result of correlation analysis depicts that banks overall service quality is positively and significantly correlated with bank reputation ($r = 0.809$, $p < .01$). It is obvious that a positive correlation exists between service quality and reputation because if people get best service from the bank he will recommend that bank to others, thus reputation enhances. Thus, the result of correlation analysis provided support for hypothesis 1.

Moreover, the result of stepwise regression also depicts that in overall service quality of a bank ($p < .01$), is found to be statistically significantly related with bank reputation. Significantly and positively related predictor variable, service quality explained 65.5% of the bank reputation. Hence, the result of stepwise regression support hypothesis 1.

Hypothesis 2

There is a significant relationship between overall product quality and bank reputation in the context of banking industry of Bangladesh.

The result of correlation analysis depicts that bank's overall product quality is positively and strongly correlated with bank reputation ($r = 0.742$, $p < .01$). Thus, the result of correlation analysis provided support for hypothesis 2.

However, the result of stepwise regression described that overall product quality of a bank within the context of Bangladesh failed to enter into the regression equation which indicates that it is not significantly associated with bank reputation. Therefore, the result of stepwise regression analysis provided no support for hypothesis 2. As far as theory and previous empirical studies are concerned; it should support the hypothesis but may be the inattentive and whimsical responses of the respondents created the unsupportive nature of the result of regression analysis.

Hypothesis 3

There is a significant relationship between corporate social performance and bank reputation in the context of banking industry of Bangladesh.

The result of correlation analysis depicts that corporate social performance is positively but weakly correlated with bank reputation ($r = 0.362$, $p < .01$). Because social performance indicates social responsibility and firm, contribution to social welfare that makes a good perception among clients. Thus, the result of correlation analysis provided support for hypothesis 3.

However, the result of stepwise regression described that corporate social performance of a bank within the context of Bangladesh failed to enter into the regression equation which indicates that it is not significantly associated with bank reputation. Therefore, the result of stepwise regression analysis provided no support for hypothesis 3. As far as theory and previous empirical studies are concerned; it should support the hypothesis but may be the inattentive and whimsical responses of the respondents created the unsupportive nature of the result of regression analysis.

Significance of the Study

Business organization's success is recognized as the dominant factor of the loyalty of the customer/client towards the brand or organization. It is commonly known that customer satisfaction is related to customer loyalty, which in turn is related to profitability (Hesket et al, 1994; Storbacka et al, 1994). On the other good reputation derives from the factor of clients overall satisfaction, and these two variables can achieve profitability. The study will make the following significant contribution in the context of banking industry in Bangladesh.

First, this study will help the researchers to extend their understanding of the relationship between bank's overall service quality, overall product quality, corporate social performance, and bank reputation. The results of this study will expose the importance and impact of their relationship in the banking sector in Bangladesh.

Second, the present study will help the bank's manager to better understand of how to hold loyal clients by satisfying their overall needs, and hold the client's trust upon the banks which thus results in good profit, and enhances reputation as well.

Finally, as the present research considers bank, there is always scope for further study in other service organizations in Bangladesh like hospitals, hotels, telecommunication companies, airlines, etc.

Recommendation and Conclusion

From the result of the correlation analysis it is found that three studied independent variables are strongly and positively correlated with the dependent variable. But the result of stepwise regression, reveals that only overall service quality is significantly related to bank reputation and thus is an important driver for bank reputation for clients. So overall service quality should be taken especial care for the benefit of the bank. Although different kind of banking card or product, and scheme have been introduced in our country by foreign banks, still majority people are not aware about that. This is because banking products are completely different from other product and their functions are also vague and complex in people mind. So management of banks should take effective measure so that they can bring their product to peoples mind and make them understand about their products attributes. Furthermore, managers should improve quality of their product overtime with the changing environment. The survey result of this study indicates that the main reason for a customer planning to switch to a new bank is that the new bank provides a greater variety of bank products. Therefore, if managers were to become convinced that product quality plays an important role in the process of positive reputation buildingtake measure to improve it. On the other hand every corporation should contribute in nonprofit oriented social welfare activities which build a positive image in peoples mind and thus the reputation of bank increases. Corporate social performance represents their belief, values, behavior, culture, etc and can be also considered as promotional activity. Finally it is very important for any retail bank in Bangladesh to take effective measures to improve service quality, product quality, and corporate social performance if they are to build and enhance their reputation and thus attract a large share of profitable customers and maintain a sustainable competitive advantage in the long run.

References

1. Aaker, D.A. (1996), *Managing Brand Equity*, the Free Press, New York, NY.
2. Barich, H. and Kotler, P. (1991), "A framework for marketing image management", *Sloan Management Review*, Vol. 32 No. 2, pp. 94-104.
3. Beatty, R.P. and Ritter, J.R. (1986), "Investment banking, reputation, and underpricing of initial public offerings", *Journal of Financial Economics*, Vol. 15 Nos. ½, pp. 213-32.
4. Barney, J.B. (1991), "Firm resources and sustained competitive advantage", *Journal of Management*, Vol. 17 No. 1, pp. 99-120.
5. Carroll, A.B. (1979), "A three-dimensional conceptual model of corporate social performance", *The Academy of Management Review*, Vol. 4, No. 1, pp. 497-505.
6. Cooper, D.R., & Schindler, P. S. (2003).
7. *Business Research Methods (8th ed.)*. McGraw-Hill.
8. Caminiti, S. (1992). "The payoff from a good reputation", *Fortune*, Vol. 125 No. 3, pp. 49-53.
9. Churchill, G. A. J. (1979). A paradigm of developing better measures of marketing constructs. *Journal of marketing research*, 16,64 – 73.
10. Cronin, . and Taylor, S.A. (1992), "Measuring service quality: a reexamination and extension", *Journal of Marketing*, Vol. 56 No. 3, pp. 55-68.
11. Dabholkar, P.A., Shepherd, C.D. and Trope, D.I. (2000), "A comprehensive framework for service quality: an investigation of critical conceptual and measurement issues through a longitudinal study", *Journal of Retailing*, Vol. 76 No. 2, pp. 139-73.
12. Davis, K. (1973), "The case for and against business assumption of social-responsibilities", *Academy of Management Journal*, Vol. 16 No. 2, pp. 312-22.
13. Dowling, G.R. (1986), "Managing your corporate images", *Industrial Marketing Management*, Vol. 15 No. 2, pp. 109-15.
14. Eidson, C. and Master, M. (2000), "Top ten...most admired ...most respected:who makes the call?", *Across the Board*, Vol. 37 No. 3, pp.16-22.
15. Garvin, D.A. (1988), *Managing Quality: The Strategic and Competitive Edge*, The Free Press, New York.
16. Gatewood, R.D., Gowan, M.A. and Lautenschlager, G.I. (1993), "Corporate image, recruitment image and initial job choice decisions". *Academy of Management Journal*, Vol. 36 No. 2, pp.414-27.

17. Gronroos, C. (1984), "A service quality model and its marketing implications". *European Journal of Marketing*, Vol. 18 No. 4, pp. 36-44.
18. Hall, R. (1993), "A framework linking intangible resources and capabilities to sustainable advantage", *Strategic Management Journal*, Vol. 14 No. 8, pp. 507-18.
19. Haskett, J.L., Jones, T.O, Loveman, G.W, Sasser, W.E. Jr and Schlesinger, L.A. (1994), "Putting the service profit chain to work", *Harvard business review*, March April, pp 105 11.
20. Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (1998). *Multivariate data Analysis* (5th ed.). NJ: Prentice Hall
21. Julian, C.C. and Ramaseshan, B. (1994), "The role of customer-contact personnel in the marketing of a retail bank's services", *International Journal of Retail and Distribution Management*, Vol. 22 No. 5, pp.29-34.
22. Lehtinen, U., & Lehtinen, J.R. (1982). Service quality – a study of dimension, unpublished working paper, *Service Management Institute*, Helsinki, 439-60.
23. Lewis, R.C., & Booms, B. H. (1983). The marketing aspects of service quality, in Berry, L.L., Shostack, G., & Upah, G. (EDs), *Emerging Perspectives in Service Marketing*, American Marketing Association, Chicago, 99-107.
24. Levin, R. I., Rubin, D. S. (1998). *Statistics For Management* (7th ed.). Prentice Hall., NJ. Mahon, J.F. (2002), "Corporate reputation: a research agenda using strategy and stakeholder literature", *Business and Society*, Vol. 41 No. 4. pp. 415-45.
25. McAlexander. J.H. Kaldenberg, D.O. and Koeing H. (1994) "Service quality measurement" *Journal of Marketing*, Vol. 57 No. 3 pp. 53-70.
26. Malhotra, N.K. (2003). *Marketing Research: An Applied Orientation* (3rd ed.). Prentice Hall. McAlexander, J.H. Kaldenberg, D.O. and Koeing H. (1994) service quality measurement "*Journal of Marketing*", Vol. 57 No. 3 pp. 53-70.
27. Nguyen, N. and Leblanc, G. (2001), "Corporate image and corporate reputation in customers retention decisions in services", *Journal of Retailing and Consumer Services*, Vol. 8 No. 4, pp.227-36.
28. Nakra, P. (2000), "Corporate reputation management: "CRM" with a strategic twist", *Public Relations Quarterly*, Vol. 45 No. 2, pp. 35-42.
29. Nunnally, J.C (1978). *Psychometric theory* (2nd ed.). NY: McGraw Hill.
30. Preston, L.E. and Post, J.E. (1975), *Private Management and Public Policy: The Principle of Public Responsibility*, Prentice-Hall, Englewood Cliffs, N.J.

31. Parasuraman, A., Berry, L.L., & Zeithaml, V.A. (1991). Refinement and reassessment of theSERVQUAL scale, *Journal of Retailing*, 67 (4), 420-50.
32. Parasuraman, A., Zeithaml, V.A., & Berry, L.L. (1985). A conceptual model of service quality and its implication for future research, *Journal of Marketing*, 49, 41-50.
33. Parasuraman, A., Zeithaml, V.A., & Berry, L.L. (1988). SERVQUAL: a multiple-item scale for measuring consumer perceptions of service quality, *Journal of Retailing*, 64(1), 12-40.
34. Parasuraman, A., Zeithaml, V.A., & Berry, L.L. (1994), Alternative scales for measuring servicequality: A comparative assessment based on psychometric and diagnostic criteria, *Journal ofRetailing*, 70(3), 201-30.
35. Preece, S, Fleisher, C. and Toccacelli, J. (1995). "Building a reputation along the value chain at Levl Strauss", *Long Range Planning*, Vol. 28 No. 6, pp. 88-98.
36. Rao, H. (1994),"The social construction of reputation: certification contests, legitimation, and the survival of organizations in the automobile industry: 1895-1912", *Strategic Management Journal*, Winter special issue, Vol. 15, pp. 29-44.
37. Rust, R.T., Zeithaml, V.A. and Lemon, A.n. (2001), *Driving Customer Equity: How CustomerLifetime Value Is Reshaping Corporate Strategy.*, Free Press, New York,NY.
38. Shapiro, C. (1983),"Premiums for high quality products as returns to reputations",*QuarterlyJournal of Economics*, Vol. 98 No. 4, pp. 659-79.
39. Schneider B and Bowen, D (1995), *Winning the service game*, Harvard Business School Press, Boston, M.A..
40. Storbacka, k,Strandvik, T. and Gonoroos (1994). Managing customer relationship for profit: the dynamic for relationship quality", *International journal of service industry management*, Vol.5 No.5, pp. 21 38.
41. Ticehurst, G. W., & Veal, A. J. (2000). *Business Research Methods*. NSW: Longman. Tabachnick, B. G., & Fidell, L. S. (2001). *Using multivariate statistics* (4th ed). NY: HarperCollins.
42. Weigelt, K. and Camerer, C. (1988),"Reputation and corporate strategy: a review of recent theory and applications", *Strategic Management Journal*, Vol. 9 No. 5, pp. 443-54.
43. Wood, D.J. (1991), "Corporate social performance revisited", *The Academy of ManagementReview*, Vol. 16 No. 4, pp. 691-718.

44. Wang. Y.G and LO, H.P. , Hui.Y.V (2003), “The antecedents of service quality and product quality and their influences on bank reputation: evidence from the banking industry in China”, *Managing service quality*. Vol 13 No 1, pp 72-83.
45. Zeithaml V.A, Berry LL and Parasuraman, A (1996) “The behavioral consequences of service quality” *Journal of marketing* Vol. 60 pp. 31-46.
46. Zeller, Lapenun and Greeley. (2003) “measuring social performance of micro finance institution.

Agricultural and Rural Financing Policy and Programme for The Banks in Bangladesh

MD. MAIN UDDIN*

Abstract *Agricultural sector contributes near about 19.29% of GDP (Source: Ministry of Agriculture) and about 72% people live in rural area in Bangladesh (Source: World Bank report 2012). Agricultural & Rural investment sector provides us food security and generates employment opportunity which plays an important role for sustainable development of the economy. Different policies & programmes in this sector have supported cost effective Agricultural & labor force output. The objectives of the study are to analyze the different policies & programmes have been taken by the different Banks in this country for investing in this sector. For the study information & data we have collected information from Bangladesh Bank Agricultural & Rural credit policy and programme guideline for FY-2013-14 and different banks policies & Agri & rural investment products guideline. It is found that Specialized Banks, State-owned commercial Banks, Private Commercial Banks, Foreign Banks have followed the up to date Bangladesh Bank policy & programme guideline. Banks share their view for introducing new idea & concept in this area.*

Introduction

Agricultural & Rural investment has support steady growth of the developing country like Bangladesh. It can provide substantial welfare gains for ultra poor, poor, marginal people and thereby could play an important role in reducing poverty. In comparison of our previous food security we found our tremendous

* Senior Vice kPresident & Regional Manager, Sylhet, EXIM Bank, Head Office, Gulshan, Dhaka

improvement of this sector. Enrichment of rural economy of the country is directly & indirectly supported by this sector.

Objective and Methodology

- The study aims is to identify periodical improvement of Agricultural & rural investment in Bangladesh to analyze different banks support for making the policy effectively applicable. It also informed us how systematic growth in this sector. To observe the present position in this sector we collect information form 1) State owned Banks 2) Specialized Bank, 3) State-owned commercial Banks 4) Private commercial Banks, 5) Foreign Banks, 6) Private Islamic Commercial Banks.

Agri & Rural Lending/Investment by Banks: The Early Phase

- The initiative of increasing banking access to the rural farmers began in 1977. At that time 6 (Six) nationalised Banks namely Sonali, Janata, Agrani, Rupali, Pubali & Uttara Bank have disbursed Agri & Rural credit/investment including Bangladesh Krishi Bank (BKB).
- To facilitate timely delivery of agricultural credit/investment to the farmers, lead bank system was introduced in 1977. Under this system, each union (the bottom layer of the administration) comprising several villages has a designated bank branch for disbursement, monitoring & recovery of agri & rural credit/investment.
- Now, agri & rural lending is mandatory for all scheduled banks.
- Currently 56 banks are engaged in agricultural & rural lending through their own branches and/or through MFI partnership,
- Unlike most central banks, Bangladesh Bank has been playing an accentuated role in facilitating agricultural & rural credit/investment.

Banks in Agricultural Lending/Investment

- Bangladesh Bank draws up annual agricultural credit/investment policy and programme each year.
- This policy and programme includes rules, regulations, priorities, disbursement and repayment schedule for common crops along with their cost estimation with a view to providing a handy and contemporary guideline for banks involved in agricultural credit/investment programme.

Agri & Rural Credit/Investment Policy Emphasis

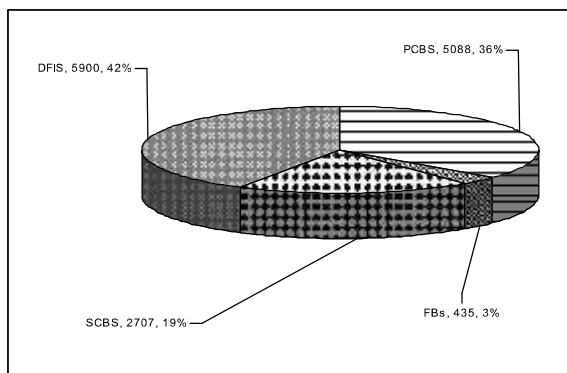
- The core spirit of the policy is that the share-croppers and marginal farmers will get priority in getting agricultural credit/investment.
- The policy also directs banks for providing collateral free credit/investment to farmers who are cultivating not more than 5 acres of land against crop hypothecation.
- At least 60% of the agricultural & rural credit/investment target of each bank goes to cultivation of crops.
- Adequate priority to the other core sectors viz. fisheries and livestock as well as for income generating activities.
- Emphasis on credit/investment disbursement publicly in an open and transparent manner.

Agri & Rural Credit/Investment Programme

- The Annual Agricultural Credit/investment Programme sets forth directives to assist banks for providing agricultural credit/investment to the farmers in an easy manner.
- The Programme consists of Credit/investment Norms for more than one hundred major crops. The credit/investment norms provide a disaggregated calculation of how much cost is required for seeds, fertilizer, irrigation, labor, etc. for per acre production of each of the crops.
- The programme also provides a calendar for credit/investment disbursement and recovery matching with the seasons for sowing/planting and harvesting of crops adding a considerable grace period for each crop.

Agri & Rural Credit/Investment Target

- The annual agricultural credit/investment disbursement target is primarily set by the banks themselves. But Bangladesh Bank closely monitors each bank's targets with a view to ensuring the indicative target to be realistic.
- In the recent years Bangladesh Bank keeps eye that the indicative target increases at least 5-10% each year.
- In 2012-2013 the target increased by 2.4% over the previous year reaching Tk 14,130 crore, an amount which is around 7% of the national budget declared by the government for FY 2012-2013, which is shown in the following pie chart:



- Bangladesh Bank does not inject fund in the field of agriculture with the only exception of meeting the demand based refinance claims from Bangladesh Krishi Bank (BKB) & Rajshahi Krishi Unnayan Bank (RAKUB) against government guarantee.

Agri & Rural Credit/Investment: MFI Partnership

- With most foreign and private banks having branch network only in the urban and metropolitan areas, Bangladesh Bank allows banks with limited branch network to provide agricultural & rural credit/investment in partnership with the micro-finance institutions licensed by the Micro-credit regulatory Authority.
- To ensure that the bank funds disbursed through MFI partnership goes in agriculture, it is considered as disbursement by bank only when the fund is disbursed to the actual borrowers and not the MFIs.

Agri & Rural Credit/Investment: Profit/Rate

- In this era of liberalization, banks set their own interest/profit rates for different sectors.
- Bangladesh Bank with a view to better combating the global economic recession introduced an interest/profit rate cap of 13% for certain sectors, including agriculture.
- However, the interest rate for crop credit/investment by the state owned banks (which take up the lion's share of agri-credit/investment market) ranges from 8% to 10% normally.

Agri & Rural Credit/Investment: Performance

- Bangladesh Bank has taken a strong stance so that the agricultural/rural credit/investment policy and programme is properly implemented by the concerned banks.
- The Agri & Rural Credit/investment Policy and Programme for the FY 2012-2013 mentions possible awards and punitive measures, respectively, for the success and failure of implementing the policy.
- Success in agricultural credit/investment disbursement will be considered a positive factor for according the approval for opening new branch/Authorized Foreign Exchange Dealership License, while punitive measures might be taken against the bank(s) failing to achieve targets.

Inclusive Banking: Farmers Account @ Tk 10

- To increase banking access of the farmers, recently Tk 96.74 lac accounts of farmers have been opened by the State-owned Banks with an initial deposit of Tk.10 /- only.
- In 2012-13 financial year, in this account the amount of disbursement, savings, foreign remittance and Inland remittance are, respectively, Tk.294.12 crore, Tk.105.63 crore, Tk.47.81 crore and Tk.19.49 crore.
- Substantial amount of Taka has already been disbursed by the Govt. to the farmers as input assistance for diesel through these accounts.
- Bangladesh Bank is motivating the concerned banks to make maximum use of these accounts through savings mobilization, credit/investment delivery, and remittance delivery.

Special Refinance for Share-Croppers

- The access to finance for the sharecroppers had been not up to the mark till the recent times.
- Bangladesh Bank took on a special refinance program of Tk. 50.00 crore exclusively for the share-croppers.
- Beneficiary: 3.00 lac sharecroppers across 181 upazilas under 39 districts of Bangladesh.
- BRAC, a reputed MFI, is getting refinance from Bangladesh Bank under this programme upon disbursing credit/investment to the sharecroppers provided that 100% bank guarantee has been placed to ensure recovery of the central bank's fund.

- Interest/profit rate at farmer level: maximum 10% while BRAC is receiving refinance at the prevailing bank rate (currently 5%).
- The repayment schedule: farmers will repay 70% of the total outstanding within two months of the harvest while the rest 30% is to be repaid on equal monthly installments till harvest.

Refinance for Solar energy and Biogas

- Around 70% people in Bangladesh are outside the electricity facility while around 90% are outside the natural gas network.
- Bangladesh Bank introduced a refinance scheme of Tk.200.00 crore to encourage, among other environment friendly initiatives, the use of: bio-gas & solar energy in houses and business institutions in rural areas, and solar energy driven irrigation pumps in off-grid areas of the country.

Agri & Rural credit/investment: Monitoring & Recovery

- Bangladesh Bank has taken a stern stance against the culture of credit/investment waiver as part of restoring credit/investment discipline in the banking sector,
- With a view to ensuring desirable recovery and to ensure that the fund is properly being used for production, a three-tier monitoring mechanism is in place.

Agri & Rural credit/investment: Monitoring & Recovery

- The District Agricultural Credit Committee has been playing an effective role in successful implementation and coordination of the Agriculture and Rural Credit/investment Programme at field level under 'Lead Bank' system.
- In view of the participation of all banks in rural credit/investment operation and in order to make the agricultural credit/investment activities more effective and coordinated, the scope for representation of private and foreign banks in the District Agricultural Credit Committee alongside the State-owned Commercial and Specialized Banks has been created by Bangladesh Bank recently.

Implementation of Agri/Rural credit/investment in 2012-13

- An amount of Tk.14,667.49 crore was disbursed in 2012-13 financial year against the target of Tk.14,130.00 crore, which is 103.80% of the target.
- In 2012-13 financial year some 33,10,024 farmers got Agri & rural credit/investment, of whom 4,44,546 were women that got Tk.1245.00 crore.
- In 2012-13 financial year, an amount of Tk.9302.10 crore was disbursed among 24.41 lac small and marginal farmers.

Recovery of Agri & Rural credit/investment in 2012-13

- Recovery rate of Agri & rural credit/investment was about 70% in 2012-13 financial year. Private and foreign commercial bank's recovery rate was 90%, where as state owned & specialized banks, recovery rate was 59%. Comparatively, private and foreign commercial banks achieved better recovery than state owned and specialized banks.

Financial Inclusion: BB Strategic Plan

- With most people of Bangladesh still outside the coverage of the banking system, recently Bangladesh Bank, the central bank of the country, has announced its first five-year strategic plan for 2010-2014 to add an impetus to the country's economic development through financial inclusion bringing in more people under the banking network.

Agri & Rural investment sectors & sub-sectors

Conclusion and Recommendation

The paper focuses on the different Bangladesh Bank policies & programmes regarding Agri & rural investment sector. New seed policy, vermincompost, solar energy, eco-friendly investment also considered under agri & rural investment. In each Fiscal year before publication of Agri & rural policy & programme guideline Bangladesh Bank asked for suggestion from different Banks & Institutions for their newly developed idea or concept about policy guideline. We hope Banks field level findings about policy issue will be admitted in published policy guideline. Now private commercial banks are generating their network to provide direct investment among farmers instead of MFI's. Our recommendations are to introduce international experience & proven experience in our policy & programme guideline. We may use our mobile phone networks to provide different policy information among farmers.

Short Term Investment	Long Term Investment
1.1 Crops investment (without Tea)	2.1 Irrigation Equipment
a) Ropa Aman	a) Deep Tube well
b) Rabi Crops	b) Shallow Tube well
1) Boro	c) Low Lift Pump (LLP)
2) Wheat	d) Hand Pump Tube-well, Water Pump, Treadle Pump
3) Potato	2.2 Livestock Development
4) Sugarcane	a) Cattle for plough
5) Mustard Seeds/Nut	b) livestock development
6) Others Rabi Crops(Pulse, Winter Vegetable, etc)	1) Beef Fattening
c) Summer Crops	2) Dairy Farm
1) Aush/ Bona Aman	3) Goatery / Ram farm
2) Jute	4) Duck / poultry farm
3) Maize	2.3 Farm Machinery
4) Other Summer Crops (Sesame & Other Summer Crops)	a) Power Tiller
d) Cotton	b) Tractor
e) Other Crops (Zinger & Arum)	c) Harvesting & Threshing Machinery
1.2 Fisheries Sector Development	d) Other Agricultural Equipment
a) Fisheries	2.4) Nursery & Horticulture (Banana, pineapple)
b) Shrimp cultivation	2.5) Betel Cultivation
c) Aquaculture	2.6) Mushroom Cultivation
d) Fish Fry cultivation	2.7) Income Generating Activities
1.3 Salt Cultivation	2.8) Local Transportation (Boat, Rickshaw, Van, Bullock card, etc)
1.4 Other short term activities(like Banana plantation & other)	2.9) Water Basin Management
1.5 Warehousing & Marketing	2.10) Other Long Term Activities (Sericulture)

The Situation of Female Child Domestic Servants in Urban Areas of Bangladesh: A Case Study

UMME HABIBA RAHMAN*

Abstract *Engaging female child domestic servants by well-to-do families is a common phenomenon in Bangladesh, particularly in urban areas. On the basis of a survey, this paper highlights the factors that compel female children to undertake the work, the type of work, the female child workers have to do, and the opinion of parent/guardian and employers about these workers. The paper makes some plausible recommendations to civil society and policy makers for improvement in the situation of these female child domestic servants.*

Introduction

Social norms and economic realities mean that child labour is widely accepted and very common in Bangladesh. Many families rely on the income generated by their children for survival, so child labour is often highly valued. Additionally, employers often prefer to employ children because they are cheaper and considered to be more compliant and obedient than adults. When children are forced to work, they are often denied their rights to education, leisure and play. They are also exposed to situations that make them vulnerable to trafficking, abuse, violence and exploitation. Millions of children are reported not to attend school; however, estimates vary. Among children aged 5-14, about five million, are economically active. “Child labour” is a narrower concept than “working children”. According to the International Labour Organisation (Child labour is work that exceeds a minimum number of hours, depending on the age of a child and on the type of work) definition, working children aged 5-17 are 7.4 million, working children aged 5-14 are 4.7 million, child labourers aged 5-17 are 3.2

* Umme Habiba Rahman P.h.D.

million, and 421,000 are child domestic workers in Bangladesh¹. Again BBS report shows there are about 3.2 million child labourers in Bangladesh².

Bangladesh ratified the United Nations Convention on the Rights of the Child (CRC) in 1989. There are 54 articles in this chapter for the proper development of children in the context of family, society, economy and politics. The constitution of Bangladesh puts much emphasis on ensuring the rights of children. Article 15 of the constitution recognizes the provision for government help to destitute children as fundamental responsibility of the state. But child situation is not satisfactory. A large number of school- aged children are engaged in the organized and unorganized labour market. More or less they are deprived of their fundamental rights. In Bangladesh the use of child labour is gradually being recognized as a multidimensional social problem.

Kofi A. Annan, a former Secretary General of the United Nations in his statement said that “There is no trust more sacred than the one the world holds with children. There is no duty more important than ensuring that their rights are respected, that their welfare is protected, that their lives are free from fear and want, and that they grow up in peace”(The state of the world children -2000).

Up to what age a human being will be considered as child? There is difference of opinion in this regards. Child related laws of Bangladesh also shows different age limit in this respect. The International Labour Organization Convention-1973 prescribes that the completion of 14th year of age is the minimum requirement of admission of children to employment in least developed countries (ILO-1973). Even though child labour is legally prohibited in Bangladesh, yet it is officially recognized.

Ahmed and Quasem in their study “Child Labour in Bangladesh” conducted in four villages of Bangladesh show that children contribute 22% of total labour supply. Some boys work as much as the adults (261 man-days), but on average girls spend more time in productive work than boys (Ahmed and Quasem-1991).

Helen Rahman in her study-”Situation of child domestic servants” conducted on 224 child domestics from five residential areas of Dhaka city, identified the following crucial reasons for a child to become child domestic, when a child does not have parents or a relative to take care of him/her with the hope that their employers would help them to attain a better future through a better job or through marriage and to support their families economically (Rahman- 1992).

The case study of ten girl child domestics by Momen (1993) narrated patterns of exploitation of children in domestic service in Bangladesh. As the case studies reveal, the working condition of all the 10 respondent children were oppressive and these children were often subjected by unusually long working hour everyday,

16-17 hours, without adequate rest or breaks. The kind of task that they were to perform was not consistent with their age or physical abilities. At the same time it is rather frustrating to note that though the children were rendering a variety of services to their employers, they paid very low wages, as low as TK 50-150 per month. On the other hand, four of them stated that they were not paid any wages at all, but they worked on the basis of “pate-bhatey” literally meaning ‘work in exchange of food’ (Momen -1993).

In our case study ‘child domestics’ or ‘domestic workers’ are defined as children under the age of 15 who work in other people’s households, doing domestic chore, caring for baby and run on errands among other tasks. This case study focuses mainly on the life of child domestics i.e. who work full time in exchange for food, clothing, shelter and sometimes remuneration.

2. Rationale of the study

Domestic service is one of the world’s oldest occupation and one in which female children have traditionally played a part. Though the largest group of female child workers are employed as domestic workers, yet their exact information (daily life, working situation, working period, leisure, place of sleeping, delivered food, payment etc) is out of sight of the society. Their jobs are invisible and belong to the informal labour market, which is unregistered and does not show up in employment statistics. So in small scale we tried to represent the exact information associated with the child domestics. This study will help to assess the situation of female child domestic servants participating in urban areas of Bangladesh.

3. Objectives of the study

The main objective of the study is to identify the situation of female child domestic servants participating in urban areas of Bangladesh. The specific objectives are as follows:-

- To investigate the socio-economic background of the domestic servants.
- To study the factors which compel them to enter the domestic labour force at tender age.
- To know the service condition and working condition of these children.
- To study the life pattern, use of leisure, exploitation, aspiration, job satisfaction etc.

4. Methodology of the study

The study was conducted in Kushtia Town and covered female children who are employed as domestic workers. Forty-two randomly selected samples were interviewed from July to August -2010. Samples were selected from some areas

like Majampur, Courtpara, Thanapara, Kalishankarpur, Pearatala, Aruapara etc. Three sets of structured questionnaire were used to collect information. First one was at child level, to gather information about the work situations and daily lives of working children. The methodology emphasized listening to the children's personal stories. We asked them about their daily activities, their families, their earnings, and how they got their present employment. Second one was on children's parents and the last one was on current employers. Average, percentages, ratios, two-way frequency tables etc were utilized for the analysis.

5. Limitations

Though we attempted to make the study a comprehensive one but there may remain limitations as very small samples were surveyed. In addition, as the sample was randomly selected they might not have represented the information exactly about all the child domestic servants. In most of the cases, employers/housewives were present at the time of interview, which put a mental pressure on the respondents. In some cases, they insisted on answering the questions on behalf of the domestic servants.

6. Findings of the study

6(a) Socio-economic background of the households of female child domestic servants

Among surveyed female child domestic servants, 52.38 had parents, 23.81% had only mothers, and 16.67% had only fathers. Children who had both parents were not so helpless than who had none (Annex table: 1). The average size of the family was not so large and had similarity with the national average of Bangladesh, which was 5.6 persons per household. The average income of the family was comparatively very low. It was only Tk. 3650 per month (Table: 1). Perhaps it was the main reason for compelling their female children to start domestic work so early in life.

In addition to money wage they (domestic servants) are provided with food, clothing, and shelter and in some cases primary treatment.

Annex table: 2 shows the land holding status of the household of the female domestic servants. It shows that 42.86% of households have no lands and 54.76% had homestead only.

The literacy status of the heads of the household of the female domestic servants is shown in annex table: 3. It shows that only 12% of household heads are literate (Primary 10.60% and Secondary 1.40%). Those have knowledge of reading writing and numeric are considered here as literate. But the remaining 88% are

Table 1: Highlights of the survey

No.	Variables	Female Domestic Servants
1	Average age (years)	11.25
2	Average age at which they started domestic work(years)	9.20
3	Education (%)	
	(1) illiterate-	83.33
	(2) literate-(a) Primary	14.28
	(b) Secondary	2.38
4	School going children	9.52
5	Average family size	5.6
6	Major reasons for joining domestic work force so early in life-(%)	
	(1) Poverty-	64.10
	(2) Compelled by guardian-	17.00
	(3) Death / illness of guardian-	7.14
	(4) Father got second marriage and declined to bring up	4.76
	(5) No attitude for learning	0.00
	(6) Others	7.00
7	Average monthly earning (Tk)- (excluding food, cloth and shelter)	255.00
8	Average family income (Tk)-	3650.00
9	People with whom they live (%)	
	(a) Parents-	14.00
	(b) Employers-	79.00
	(c) Relatives-	7.00
	(d) Others-	-
10	Average contribution of domestic child worker to family income (%)	5.24
11	Average No. of working hours-	13.50
12	Availability of weekly holidays (%)	0
13	Dissatisfaction to wage paid (%)	85.72
14	Sleeping place (%)	
	(a) Floor at kitchen-	32.00
	(b) Floor at bedroom-	55.00
	(c) Corridor	9.00
	(d) Others-	4.00
15	Having Mosquito nets (%)	15.00

illiterate who are even unable to write their name. Note that, literate here means those who are able to read and write their name only.

Annex table: 4 provides the information about occupations of the household heads of the domestic servants. It shows that 38.10% (28.57 % Rickshaw/Van puller + 9.53% Small business) of the household heads are engaged in self-activities.

Again, 26.19% household heads are day labour (bidi worker, hotel workers, mason, carpenter etc) and 23.81% are engaged as domestic servants. The highest 28.57% of household heads are engaged as rickshaw van pullers. In maximum cases mother of the children worked as maidservants. The average monthly income of the household heads was not at all satisfactory.

6(b) Different aspects of child domestic servants

The survey highlights indicate that most of the female domestic servants entered the work force at tender age because of dire economic necessity. This is evident from the study of the economic background of the children and their guardians/parents. Here we found that on an average the female children entered the domestic work as early as 9.2 years. At present their average age is 11.25 years. The main reason is that earning is most important to survive in life.

Majority (83.33%) of the female domestic servants were unable to read and write, which meant that they had never been to school nor had been taught at home. Only 9.52% of the domestic servants reported that they were going to school. Here it is very important to mention that most of the school going domestic servants are the employee of university and college teachers.

Although domestic servants have to perform a variety of domestic task within the household but on an average 46% of them reported that they receive a monthly wage of only Tk. 255 per month. But the remaining 54% worked on the basis of "patebhatey" i.e. work in exchange of meals. At the time of interview most of them (78%) told that they are promised an Eid-bonus, which is not fixed. Besides these, an important information was found that a large number of female domestic servants (49%) were engaged with the condition that their employers would arrange their marriage when the time (marriageable age) comes.

This study gives us a fairly good picture of the working conditions of the domestic servants. Generally they have to get up early in the morning (78% before 6 a.m). Most of them brush their teeth with charcoal (63%) and tooth powder (25%) and the remaining 9% uses brush and toothpaste. After washing hands and mouth they have to wash pots and pans. Then they sweep the rooms and help the mistress in preparing breakfast. After preparing breakfast at 8-9 a.m they have to serve breakfast at the dining table for the whole family. We found that 47.53% female servants have to prepare breakfast by themselves but the remaining 52.47% have helped the mistress in preparing breakfast.

About 89% domestic servants told that they have to take breakfast after the completion of all family members, and after breakfast they have to assist the mistress in cooking

lunch. They find out stones from rice and prepare vegetables for cooking. Again they serve lunch for the whole family. After lunch they wash dishes and then eat themselves sitting in the kitchen floor and they sweep the rooms again. Some of them (29%) have to serve tea to the tutor. At 9-10 P.M they serve dinner to the family. Again they wash dishes, clean up everything and eat their own dinner. Then they go to sleep at 10-11 p.m. On an average they work 13-15 hours per day.

From our study it is seen that child domestic workers rarely have a place of their own to sleep. They sleep in any available space, such as kitchen floor (32%) or on the bedroom floor of their employer's children (52%) and even in the corridor. Although all the members of the employer's family use mosquito nets, the domestic servants rarely have any such net. In our study it is found that only 13% of the domestic servants have mosquito nets but the remaining 87% have not, which is clearly a violation of one of the children's rights set out in the CRC (United Nations convention on rights of the children) in 1989 to protect them from anything that is harmful to the children's health or physical, mental, spiritual, moral or social development.

Most of the domestic servants have no weekly holiday. Normally on the occasion of Eid-festival they get the opportunity of holidays to meet their parents/guardians and relatives. Watching TV is their only recreational media. In our study 72% respondents reported that they get the opportunity of watching TV, but 21% of them reported that they are deprived of this opportunity and the remaining 7% gave no response (Annex table—8).

Many of the respondents reported that they are locked in the house when the whole family goes somewhere for a few hours. This is a troubling case. If fire or any other problem arises in the room, they would not be able to escape. This was the obvious restriction on the children's personal freedom. This is also a violation of one of the rights of children, —"to freedom of association and to be protected from cruel inhuman degrading treatment", set out in the CRC in 1989.

In response to the question whether they were physically punished or not (in the form of slaps, hair pulling and other abuse), 30.95% respondents admitted that sometimes they were punished, 26.19% respondents said they were not punished, and the remaining 42.86% respondents had no response. Verbal abuse in the form of scolding was apparently common to them.

6(c) Parents/Guardians' views about female child domestic workers

The parents/guardians of the female child domestic servants reported that because of serious poverty they are forced to send their children out to work. In response

to the question why they place their children in domestic employment, we found multiple answers. A part of them (19%) reported that it was to gain a bit of income for the family, 21% of them reported that it was “for a better future” for the child; 16% reported that the main reason was the greater security for the children, which means both economic and social security i.e. security from social hazards of life. The answer of the remaining part (44%) was varied in nature.

The guardians of the domestic servants also reported that because of entering the work force at an early age their children did not get the opportunity to go to school. Thus their life is being spoilt as they are being deprived of education and hence they will have passed their whole life in misery. None of the guardians said that they compelled their children to work because they (child) had no attitude for learning i.e. each and every guardian feels the necessity of education of his or her children.

6(d) Opinion of the employers of female domestic workers

In response to the question why female children were employed as domestic servants, they (employers) stated that female children are more appropriate than the adult to do the domestic works. The employers reported that they were good workers and could do odd jobs. According to their opinion, major reasons for keeping female child labours as domestic servants are:-

- * The female children are comparatively more obedient.
- * They are cheaper to engage.
- * They are hard working.
- * It is easy to train them up.
- * They are better to help their mistress in domestic work.
- * They can look after their crawler child easily.
- * It is easier to provide accommodation facilities to them.

Most of the employers comment that poverty and too many children forced poor families to send their children to work. They also recommended that child labour should be controlled through creation of jobs for poor families, giving financial support to them by Government and spreading information regarding family planning and universal primary education. They also comment that the prevailing “Food for Education” program can play a vital role in reducing the child labour if it is adopted all over the country for a long period of time.

7. Conclusions and recommendations

The poor economic context of Bangladesh has pushed the female children of the poor families to become domestic servants. They are forced to engage in such work for their own survival and to support their families economically. Domestic

service is therefore one of the world's oldest occupation and one in which female children have traditionally played an important part. Within every household a wide variety of domestic tasks need to be undertaken: Cleaning, Laundry, Food preparation, Cooking, Shopping and looking after young children. Typically, there are no specified hours or tasks allocated to them. They do what their employers ask them to do, at any time of the day or night but they get the lowest status and poorest remuneration as compared to all occupations and exploited. On the whole, there is no fixed rate of wages for child labour in the unorganized sector. In a country where more than half of the population live below poverty line, the child labour has significant contribution to family income. Even if we desire, we cannot abolish child labour over night. But in this context it is essential to take an effective plan at national level to fix up their task, working hours and minimum wage level within a very short time.

Therefore we make the following recommendation for gradual improvement in the situation of female child domestic servants:

- * The state, society, parents and international agencies need to play complementary roles in eliminating child labour.
- * A comprehensive national policy on child care, protection and development should be imposed aiming at developing the children as human resource.
- * Domestic servants should be given 2-3 hours off in the middle of the day for School attendance and school hours should be adjusted accordingly.
- * Special community-based, door to door campaigns would be the most effective means for communicating with the households to convince them to allow their domestic servants time off for schooling.
- * They should be protected from economic exploitation and performing any work that interferes with her education or is harmful to her physical, mental, spiritual or social development.
- * They should be provided the freedom of expression and freedom of association.
- * They should have the right to maintain regular contact with their parents.
- * They should be protected from all forms of sexual exploitation and sexual abuse.
- * The goals for "SAARC DECADE OF THE GIRL CHILD" in South Asia should be implemented properly in Bangladesh.
- * Legal protection should be provided so that no employers can hire female child labour for heavy, unkind, and hazardous work, which may hamper their physical and mental health.

Reference

1. Ahmed, A and Quasem, M.A (1991), Child Labour in Bangladesh, Dhaka.
2. Bangladesh Bureau of Statistics, Report on National Child Labour Survey, 2002-2003.
3. Banu, Nasim. Bhuiyan, Shajahan and Sabhlok, Smita, "Child Labour in Bangladesh", International Journal of Technical Cooperation, 4 (1), Summer, 1998.
4. Friedman, S.A, 'Because they're Girls: Targeting the most Intolerable Forms of Child Labour and addressing the invisible Labour of Girls; Geneva-1997.
5. Innocenti digest; Child domestic work, Main Issue, UNICEF, Florence Italy.
6. International Labour Organisation(ILO), Baseline Survey on Child Domestic Labour in Bangladesh, 2006
7. ILO, "Strategies and Action against Child Domestic Work", draft report, ILO/IPEC1998.
8. Momen, M.A. (1993), Case Studies on Abuse and Exploitation of Children in Domestic Servant in Bangladesh (Dhaka city). Bangladesh Shishu Adhikar Forum, Dhaka.
9. Rahman, G.S. (1981), "Laws Relating to Children in Bangladesh", Bangladesh Shishu Academy, Dhaka.
10. Rahman, Helen (1992), Situation of Child Domestic Servants. UNICEF, Dhaka.
11. Robertson, A, Domestic Work: A Modern form of Slavery, Leuven. April 1997
12. Society for the protection of the Rights of the Child, SPARC newsletter, no.8 Sep-1996.
13. UNICEF, The State of the World's Children 2000 and 2010.
14. UNICEF, Daily Lives of Working Children, Bangladesh 1997

Annex Table 1 : Status of Parents of the domestic servants (alive or dead)

Circumstances	No of domestic servants	Percentage (%)
Father and mother both are alive	22	52.38
Only mother is alive	10	23.81
Only father is alive	07	16.67
None is alive	03	7.14
Total	42	100

Annex Table 2 : Family land holding status of the domestic servants

	servants	
Have no land	18	42.86
Have homestead only	23	54.76
Have cultivable land & homestead	1	2.38
Total	42	100

Annex Table 3 : Literacy status of the heads of household of domestic servants

Literacy status	No of domestic servants	Percentage (%)
Literate	05	11.90
Illiterate	37	88.90
Total	42	100

Annex Table 4 : Occupation of heads of household of the domestic servants

Types of Occupation	No of domestic servants	Percentage (%)
Domestic Servants	10	23.81
Rickshaw/van-Pullers	12	28.57
Day labours	11	26.19
House wives	03	7.15
Small business (tea stall, vegetable shop etc)	04	9.53
Others	02	4.76
Total	42	100

Annex Table 5 : level of education of working Children

Level	No of domestic servants	Percentage (%)
0	35	83.33
I-V	06	14.28
VI and above	01	2.38
Total	42	99.99

Annex Table 6 : No. of brothers and sisters of the domestic servants

Number of Brothers/sisters	No of domestic servants	Percentage (%)
1	04	9.52
2	06	14.29
3	10	23.80
4	06	14.29
5	07	16.67
6	05	11.90
7 and above	04	9.53
Total	42	99.99

Annex Table 7: General happiness of domestic Servants

Variable	No of domestic servants	Percentage (%)
Very happy	00	00
Happy	09	21.43
Not Happy	26	61.90
No response	07	16.67
Total	42	100

* Since most of the cases, at the time of interview, the housewives were present, so the information about happiness may not be represented exactly.

Annex Table 8 : Opportunity to watch TV

Variables	No of domestic servants	Percentage (%)
Get opportunity	28	72
Do not get	9	21
No response	4	7
Total	42	100

Annex Table 9 : Physical Punishment*

Variable	No of domestic servants	Percentage (%)
Absence of Punishment	11	26.19
Presence of Punishment	13	30.95
No Response	18	42.86
Total	42	100.00

*We tried our best to collect exact information about physical punishment but, due to the presence of housewives, the information given by the domestic servants about their punishment may not be accurate.

Money and Prices in Bangladesh: Some Preliminary Analysis

ANISUL M. ISLAM*
MUHAMMAD MAHBOOB ALI**
CHU V. NGUYEN**

Abstract *This paper conducts an investigation of the long run relationship and short run dynamics between money supply and aggregate price level in Bangladesh employing the unit root tests and the Engle-Granger co-integration test and error correction methodologies. The co-integration tests suggest that there is a long run equilibrium relationship between money supply and prices, with the relationship being stronger for broad money (M2) than its narrower counterpart M1 money. The short-run dynamic analysis shows similar strong and stable relationship between M2 money and prices but not with M1 money. Further, the modified Granger causality tests within the error-correction framework show that there is unidirectional causality flowing from M2 money to prices, but short-run independence between M1 money and prices.*

Introduction

Inflation is a major macroeconomic issue for every country in the world and is of serious concern for the general public, businesses, academics and researchers, development partners, international organizations, and policy makers. Given that controlling inflation (keeping inflation low and stable) is a major macroeconomic policy objective of any country, understanding inflation and predicting its future course and taking appropriate steps ahead of time to control are major challenges

* Presidency University, Bangladesh

** University of Houston, Downtown

for policy makers in both rich and poor countries, including Bangladesh. Controlling inflation is important not only to preserve the internal and external value of money, but also because high inflation has many adverse effects on society including hidden redistribution of income and wealth, uncertainty in decision making, output fluctuations, export competitiveness, and even political and social instability in a high inflation country, among others. Further, once a country enters into a phase of persistent high inflation and falls into a high inflation trap (Hooker, 2002), it becomes very difficult and also costly on society to bring down the inflation to a long-run sustainable level.

The literature on this topic at both theoretical and empirical levels, particularly with reference to the relationship between money supply and inflation is enormous, and often filled with heated debates and controversies. On the theoretical front, the classical quantity theory of money in terms of the well-known Fisher's (1911) equation of exchange posits not only a unidirectional causal linkage flowing from money supply to prices, but also the relationship is hypothesized to be proportional under assumed conditions of full employment and constant velocity of money circulation (money changing hands over a given period of time). The modern quantity theory of money a-la Milton Friedman (1956) retains the causality aspect of the relationship of the classical formulation with slight modification in the nature of the relationship by hypothesizing a strong and stable, if not proportional, relationship between money supply and inflation. In this view, money matters strongly and inflation is viewed essentially and purely as a monetary phenomenon.

Bangladesh is a densely populated poor developing country in South Asia. The relationship between money and inflation is of utmost importance for the country's population in general and of policy makers in particular. While some other studies have been conducted on this topic in the context of Bangladesh, sophisticated research with long-time series data using advanced econometric techniques has been lacking. This paper proposes to empirically examine the relationship between money supply and inflation for this country focusing on empirically testing the monetarist hypothesis in terms of money supply's role in explaining historical inflation in Bangladesh. The paper will conduct empirical tests to examine the existence of any long-run co-integration relationship along with its corresponding short-run dynamics using the error-correction method based on the existence of any co-integrated relationship. The paper will use for the first time the most elaborate quarterly time series data hitherto undertaken spanning from the early years of the country's independence to the present and utilizing more advanced econometric techniques. The quarterly time-series data

would cover the period from 1972 to 2011 covering the entire monetary history of the country and would be collected from various sources such as Economic Trends of the Bangladesh Bank and International Financial Statistics of the International Monetary Fund.

Engle-Granger Cointegration Methodology

The long run relationship between oil price and general price level can be described by the following equation:

$$P_t = \alpha_0 + \alpha_1 M_{it} + u_t \quad (1)$$

Following Engle-Granger (1987) methodology, the short-term dynamics of the relationship between them can be represented by the following dynamic short-run dynamic error correction model (ECM).

$$\Delta P_t = \beta_0 + \sum \beta_{1s} \Delta M_{it-s} + \sum \beta_{2s} \Delta P_{t-s} + \beta_3 U_{t-1} + v_t \quad (2)$$

where P_t is the quarterly Consumer Price Index (CPI); M_{it} represents money supply ($i = M1I$ or $i = M2I$ both in index form), u and v are random disturbance terms and Δ is the first difference operator. Equation (2) is the dynamic error correction model that captures the short run response of the change in the inflation rate to the change in money supply. The coefficients of ΔM_i and ΔP represent the short run responses to the change in money supply and lagged changes in CPI over different lags, respectively. In the Engle-Granger (1987) two-step approach, the order of integration for each variable in Equation (1) is determined before conducting the co-integration test. In the first step of the Engle-Granger approach, the long run equilibrium relationship between money supply and prices as specified by Equation (1) is estimated using ordinary least squares method. In the second step, the short run relationship is estimated with v_t replaced by the one-period lagged residuals from estimated Equation (1), i.e. estimated u_{t-1} . All equations were estimated using natural logarithmic transformations of original variables: $p = \log(P_t)$ and $m_{it} = \log(M_{it})$ and M_{it} with respect to both M1 and M2 are converted into index form with the same base as CPI, thus all variables being index numbers with 1985=100 as the base period.

We have conducted a battery of unit root tests to determine non-stationarity of consumer price index and two money supply variables. Although the ADF test (Dickey and Fuller, 1979) is more commonly used as unit root tests, this test assumes that errors are statistically independent and have a constant variance (Enders, 1995). Phillips and Perron (1988) developed a generalization of the Dickey-Fuller procedure that does not require the restrictive assumptions of ADF

tests. PP tests can be applied even in situations where the disturbance is weakly dependent and heterogeneously distributed. We have also reported the results from the more powerful KPSS tests. The justification of KPSS test is found in Kwiatkowski et al. (1992). argues that traditional unit root tests (ADF and PP tests) fail to reject a unit root because they have low power against relevant alternatives and propose instead a more powerful test known as the KPSS test, which tests the null hypothesis of stationarity against the alternative of a unit root.

Preliminary Empirical Results

The preliminary empirical results are presented below under several sub-headings as follows. The figures and tables referred to in this section are placed at the end of the paper immediately before the reference section.

Testing for Non-Stationarity in the Variables

Figure 1 shows the quarterly time trend of the three level variables, CPI, M1I, and M2I from 1972.Q2 to 2011.Q1. The three lines show that there is some trending (co-integrating) relationship between M1I and CPI on the one hand and the M2I and CPI on the other hand as the two bi-variate series seem to move together with a common trend and all three variables seem to be non-stationary as individual series. This non-stationarity needs to be confirmed by formal unit root tests as discussed below.

As outlined earlier, all three unit root tests have been conducted with intercept (C) and trend (T) terms as appropriate along with the associated optimal lag structure. The results are reported in Table 1. The unit root test results is somewhat mixed in terms of alternative unit root tests. The ADF test shows CPI to be stationary but M1I and M2I are non-stationary. The Philips-Perron test shows that CPI and M1I are stationary while M2I is non-stationary. But the most powerful of the three tests, the KPSS test shows that all three relevant variables, CPI, M1I, and M2I, are non-stationary. Although the test results are mixed, we will rely more on the KPSS tests and accept that the three variables are non-stationary (having unit roots or being integrated of order one $I(1)$) in their level forms.

Engle-Granger Co-integration Test Results

Based on the above-reported graphical trend and more formal unit root test results, long-run equation (1) needs to be estimated using any co-integration methodology. Since the relationship is bi-variate in nature, we would be able to use the Engle-Granger two-step method to find the co-integrating relationship. In

the Engle-Granger method step 1, equation (1) has been estimated using the OLS method with quarterly data from 1972.Q2 to 2011.Q1. The estimated coefficients of the Engle-Granger long-run co-integrating equations are reported in Table 2 for alternative money supply M1I or M2I variables in second and third columns respectively. The long run elasticity coefficient of M1I is found to be 0.59 while that of M2I is 0.48, both being positive but less than unity. In terms of conventional statistical criterion, these two elasticity coefficients are found to be statistically highly significant at better than 1% level as shown by very high t-values. In addition, the adjusted R^2 values were very high for both equations showing high explanatory power for the two alternative money supply models in explaining prices in Bangladesh. Further, the F-statistic representing significance of the overall regression was found to be highly significant at better than 1% level. However, given that the R^2 values are larger than the corresponding D-W statistic in both models, the regression results could be representing a spurious relationship (Granger and Newbold 1974).

However, since the variables were found to be non-stationary, the above-mentioned conventional criteria are not appropriate in evaluating the price and money supply relationships. We need to conduct step 2 of the Engle-Granger method to determine the existence of co-integration based on whether the residuals from these two long-run equations are stationary or not. If the residuals are stationary, then the long-run equation would indicate the presence of co-integration between the variables in that equation. Accordingly, three alternative unit root tests were now applied on the residuals RESM1 derived from the M1 money equation and RESM2 derived from the M2 money equation and these unit root tests are depicted in Table 3.

With respect to RESM1, it is shown to be non-stationary by the ADF test, but was found to be stationary based on other test unit root tests, i.e. the Philips-Perron test and the more powerful KPSS test. Since two out of three unit root tests shows stationary, we are inclined to conclude that RESM1 is stationary and hence conclude that there exists a long-run co-integration between M1 money supply and CPI. With respect to RESM2 residuals, all three unit root tests indicate stationarity and hence strong evidence for the existence of long-run co-integration between M2 money supply and CPI. These results confirm that both M1 and M2 money supply have a long-run co-integrating relationship with each other in the sense of having common trends and co-movements, the results being stronger for the M2 equation than the M1 equation. The co-integration results thus indicate the elasticity coefficients reported from the long-run equation are reliable indicator that of the long-run impact of M1 and M2 money supply on the CPI variable.

Short-Run Dynamics and Error-Correction Model Estimates

To capture the short term dynamics of the model and the speed of the adjustment to long run equilibrium, we estimated the error correction model as specified in equation (2) earlier. In estimating this ECM model, the optimal lag length of eight ($k^*=8$) is used for the M1 equation and five lags ($k^*=5$) for the M2 equation, which were determined by a number of lag-length criterion selections statistics such as AIC (Akaike Information criterion), FPE (Final prediction error), LIR (sequential modified LR test statistic), SC (Schwartz criterion), and HQ (Hannan-Quinn) information criterion. The error correction term in Equation (2) is given by the coefficient of lagged residual derived from estimated equation (1). Since lagged residuals are included in equation (2), this short-run dynamic error-correction model can be estimated by the OLS method.

The results of the ECM model estimates are shown in Table 4. The short-run dynamic model for M1 performed very poorly with most lagged coefficients being statistically insignificant (except the intercept and $\Delta p(-7)$ term), low adjusted R^2 value (only 0.03), and low and statistically insignificant F-statistic to judge the overall regression. Further, the D-W statistic of course shows no autocorrelation in the data. The coefficient of the lagged residual variable $RESM1(-1)$ is of utmost interest and came out with the expected negative sign indicating stability, but the coefficient value is small and statistically insignificant with a value of only 0.02. In contrast, the short-run dynamic model for M2 money performed much better than M1 model. Although most lagged coefficients are statistically insignificant (except the $\Delta p(-4)$), these estimates are more acceptable with a reasonable adjusted R^2 value 0.08 and a statistically highly significant F-statistic to judge the overall regression to be significant. Further, the D-W statistic shows no autocorrelation in the data. Most importantly, the coefficient of the lagged residual variable $RESM2(-1)$ is of expected negative sign to indicate stability, and is statistically significant at better than 1% level, giving further confirmation of the existence of long-run co-integration between M2 money supply and consumer prices. The coefficient value of $RESM2(-1)$ at -0.10 for this error-correction term shows that any short-run deviation of the consumer prices adjusts to its long-run equilibrium with a speed of adjustment at the rate of 10% per quarter (or about 40% per year). In other words, the results suggest that when CPI is disturbed by an external shock and deviates from its long-run path, the M2 money supply will adjust at the above speed to bring prices back to its long-run equilibrium path. Given the above result, it becomes clear that the Short-run dynamic model corresponding to M2 model performed much better than the M1 model, indicating that M2 money supply is more important and significant in explaining both long-run co-integration and short-run dynamics for Bangladesh.

Conclusion

In this paper, we have explored the long run relationship and short run dynamics between money supply and consumer price index employing the unit root tests for non-stationarity followed by the Engle-Granger methodology of co-integration and error-correction methodology for the short-run dynamics. The empirical results suggest that all three variables are non-stationary (I(1)) in their level forms. Engle-Granger co-integration tests suggest that there is a long run equilibrium relationship between M1 money and M2 money with consumer price level, albeit a bit weaker test result for M1 money than M2 money model. The results from the error correction model suggest that the long run relationship is stable, that is, in the presence of a shock, the system moves back to the equilibrium. However, the coefficient of the lagged error correction term being insignificant for the M1 money equation, the M1 and Price long-run relationship reported earlier cannot be confirmed by the error-correction model results. In contrast, the coefficient of the lagged error correction term in the M2 equation was statistically highly significant with the expected negative sign, thus giving further confirmation of the long-run relation reported earlier between M2 money and prices. The estimated speed of adjustment with respect to the M2 equation was found to be 0.10, or about 10% per quarter (about 40% per year) which appears to be reasonable.

Figure 1: Quarterly Time Trend in M1I, M2I, and CPI: 1972.Q2 – 2011.Q1

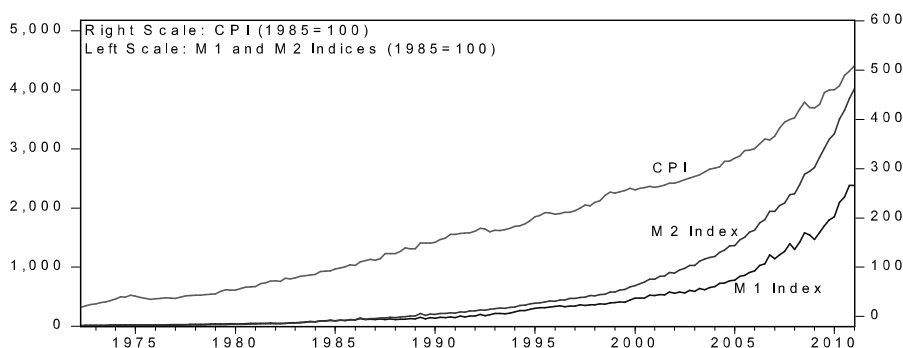


Table 1: Results of three Alternative Unit Root Tests

A. Augmented Dickey-Fuller Test: Null of Unit Root

Variables	Lags	Level	First Difference
ln CPI	8	-4.21*(C,T)	—————
ln M1I	8	-2.25 (C,T)	-5.09*** (C)
ln M2I	5	-0.58 (C)	-5.63*** (C)

B. Phillips-Perron Test: Null of Unit Root with D dummy)

Variables	Lags	Level	First Difference
ln CPI	8	-3.85** (C,T)	————
ln M1I	8	-4.15* (C,T)	————
ln M2I	5	-2.49 (C,T)	-20.02*** (C)

C. KPSS (Kwiatkowski-Phillips-Schmidt-Shin) Test: Null of No Unit Root (Stationarity)

ln CPI	8	0.36*** (C,T)	0.50 (N)
ln M1I	8	0.16** (C,T)	0.11 (C)
ln M2I	5	0.32*** (C,T)	0.39 (C)

Notes: (1) The McKinnon critical values for ADF and PP Tests: (With both intercept and trend) are: (a) 1% = -4.07; (b) 5% = -3.46; and (c) 10% = -3.16 respectively; (With only intercept) are: (a) 1% = -3.48; (b) 5% = -2.88; and (c) 10% = -2.58; (without intercept and trend) are: (a) 1% = -2.59; (b) 5% = -1.94; and (c) 10% = -1.62 respectively. (2) Critical values for KPSS Test: (with both intercept and trend: (a) 1% = 0.22; (b) 5%=0.15; and (c) 10% = 0.12; respectively; (with intercept only): (a) 1%=0.74; (b) 5%=0.46; and (c) 10% = 0.35 respectively; (without intercept and trend) (a) 1%=0.73; (b) 5% = 0.46; and (c) 10% = 0.35 respectively. (3) (a) *** = significant at 1% level; (b) ** = significant at 5% level; and (c) * = significant at 10% level. (4) Letters in parentheses after the coefficients represent the following characteristic included during the unit root tests and in determining the critical values as appropriate: C = Intercept; T = Trend; and N = None (No Intercept; No Trend).

Table 2: Estimates for the Engle-Granger Long Run Co-integration for M1 and M2 Models

Long-run co-integration equation: $p_t = a + b m_{1it} + e_t$			
Models	Alternative	M1 Model Estimates Dependent Variable: $p_t = \ln$ CPI	M2 Model Estimates Dependent Variable: $p_t = \ln$ CPI
Coefficient Estimates			
Intercept		1.8802*** (45.4238)	2.3942*** (102.7304)
$m_{1t} = \ln M1_t$		0.5902*** (76.1491)	
$m_{2t} = \ln M2_t$			0.4761*** (114.1999)
Adjusted R ²		0.9741	0.9888
F-Statistic		5798.68***	13041.61***
Prob. of F-Statistic		0.0000	0.0000
D-W statistic		0.1196	0.1547

Notes: (1) Values in the parentheses below the coefficients are the relevant t-values; (2) *** = significant at 1%; ** = significant at 5%; and * = significant at 10% level

Table 3: Results of the Unit Root Tests for Engle-Granger Long-run Regression Residual derived from the equation:
 $\ln P_t = a + b \ln M_{it} + \ln u_t$; $i = \ln M1I$ or $\ln M2I$

A. Augmented Dickey-Fuller Test: Null of Unit Root ()

Variables	Lags	Level	First Difference
RESM1	8	-0.81 (N)	-4.51***(N)
RESM2	5	-3.19***(N)	_____

B. Phillips-Perron Test: Null of Unit Root with D dummy)

Variables	Lags	Level	First Difference
RESM1	8	-3.05***(N)	_____
RESM2	5	-3.54***(N)	_____

C. KPSS (Kwiatkowski-Phillips-Schmidt-Shin) Test: Null of No Unit Root (Stationarity)

RESM1	8	0.35 (C)	_____
RESM2	5	0.36 (C)	_____

Notes: (1) The McKinnon critical values for ADF and PP Tests: (without intercept and trend) are: (a) 1% = -2.59; (b) 5% = -1.94; and (c) 10% = -1.62 respectively. (2) Critical values for KPSS Test: (without intercept and trend) (a) 1%=0.73; (b) 5% = 0.46; and (c) 10% = 0.35 respectively. (3) (a) *** = significant at 1% level; (b) ** = significant at 5% level; and (c) * = significant at 10% level. (4) Letters in parentheses after the coefficients represent the following characteristic included during the unit root tests and in determining the critical values as appropriate: C = Intercept; T = Trend; and N = None (No Intercept ; No Trend).

**Table 4: Engle Granger Short-run Error-Correction Model
Estimates for M1 and M2 Models**

M1 and M2 Models	M1 Model Estimates Dependent Variable: p_t $k^* = 8$ lags	M2 Model Estimates Dependent Variable: p_t $k^*=5$ lags
Coefficient Estimates		
Intercept	0.016752*** (2.6283)	0.009351 (1.28)
p(-1)	-0.036412 (-0.43)	0.077171 (0.90)
p(-2)	-0.034330 (-0.42)	0.001971 (0.02)
p(-3)	0.047919 (-0.42)	0.083255 (1.00)
p(-4)	0.080231 (0.59)	0.142147*** (1.77)
p(-5)	0.038035 (0.99)	0.109236 1.37)
p(-6)	-0.236575 (0.48)	-----
p(-7)	-0.021174*** (-3.04)	-----
p(-8)	-0.035304 (-0.27)	-----
mi(-1)	0.040771 (-0.47)	-0.004824 (-0.07)
mi(-2)	0.032409 (0.78)	0.095709 (1.43)
mi(-3)	0.051128 (0.61)	0.054431 (0.83)
mi(-4)	-0.018962 (0.99)	-0.037606 (-0.58)
mi(-5)	-0.065962 (-0.37)	-0.051320 (-0.78)
mi(-6)	0.035285 (-1.25)	-----
mi(-7)	0.031632 (0.67)	-----
mi(-8)	0.044659 (0.60)	-----
RESM1(-1)	-0.023603 (-1.10)	-0.102601*** (-3.05)
Adjusted R²	0.03	0.08
F-Statistic	1.25	2.18***
Prob. of F-Statistic	0.23	0.0186
D-W statistic	1.89	1.96

Notes: (1) Values in the parentheses below the coefficients are the relevant t-values; (2) *** = significant at 1%; ** = significant at 5%; and * = significant at 10% level

References

1. Dickey, D.A. and Fuller, W. A. 1979. Distributions of the estimators for autoregressive time series with a unit root, *Journal of the American Statistical Association*, 74:427-31.
2. Enders, Walter. 1995. *Applied Econometric Time Series*. New York: John Wiley and Sons Inc..
3. Engle, R. F. and Granger, C. W.J. 1987. Co-integration and error correction: representation, estimation and testing, *Econometrica*, 55: 251-276.
4. Friedman, M. 1956. *The Quantity Theory of Money - A Restatement*, in *Studies in the Quantity Theory of Money*, Milton Friedman, ed. Chicago: University of Chicago Press, pp. 1-21.
5. Fisher, I. 1911. *The Purchasing Power of Money*, New York: Macmillan, USA.
6. Hooker, Mark. 2002. Are Oil Shocks Inflationary? Asymmetric and Non-Linear Specification versus Changes in the Regime. *Journal of Money, Credit, and Banking*, 34 (March):540-561
7. Granger, C.W.J. and Newbold, P. 1974. Spurious Regression in Econometrics, *Journal of Econometrics* 2: 111- 120.
8. Kwiatkowski, D., Phillips, P.C.B., Schmidt B. and Shin Y. 1992. Testing the Null Hypothesis of Stationarity against the alternative of a Unit Root, *Journal of Econometrics*, 54: 159-78.
9. Phillips, P.C. B. and Perron, P. 1988. Testing for a unit root in time series regression, *Biometrika*, 75:335-59.

Challenges in Microfinance in Agriculture and in Low Population Density Areas: A Note

MD. ABDUS SOBHAN*

Micro credit — the extension of small loans to poor individuals -is meant to be used for income generating activities that will improve the borrowers living standards. Microfinance is a broad term of microcredit. Microfinance, a type of banking service, is provided to the unemployed or low income individuals or such groups who would otherwise have no other means of gaining financial services. Ultimately, the goal of microfinance is to give low income people an opportunity to become self sufficient by providing a means of saving money, borrowing money and providing some form of insurance cover.

Bangladesh is the pioneer and global leader of micro credit. Nobel Laureate Prof Dr Muhammad Yunus introduced the concept of micro credit about three and a half decades ago. The concept has been institutionalized through forming a bank entitled Grameen Bank. The basic concept of the microfinance, which initially started as micro credit, is to alleviate poverty and empower the helpless and less privileged section of the society through generating small entrepreneurship and employment opportunities. However, with the passage of time, the concept has not remained confined within the boundary of credit financing programme. It now encompasses different health and education programs targeted for landless and marginal farmers.

There are many notable achievements of microfinance. These include, among others, the process of financial democratization, breaking the deep rooted myth

* The writer is an Executive Committee (EC) member of BAAS, Life Member of Bangladesh Economic Association and Assistant General Manager of Bangladesh Krishi Bank. He can be reached at e-mail: sobhan_bd2003@yahoo.com.

that poor people neither have the willingness nor the capability to repay loan and the poor don't want to save. Another remarkable achievement of microfinance is its thrust given on commercialization of the provision of financial services to the poor and low income farm families.

The journey of micro finance was not hazardless and without setbacks. Over time, microfinance has been facing the challenges of sluggishness, poor management and financing quality. The main challenges in microfinance are to further improve the enabling policy environment and build up adequate capacity to provide a broad range of services in keeping with the demands of the farmers and the reduction of transaction costs.

Microfinance, especially the micro credit, mainly deals with the off-farm activities as a tool of poverty alleviation program. Initially on-farm and allied agricultural activities were generally overlooked by microcredit operators as in the case of Bangladesh, mainly due to the unpredictability of returns in these sectors. Although the non-government organizations (NGOs) engaged in microfinance in Bangladesh claimed their operations to be the provision of loan to agricultural sector, but the real scene was different. The poor people had taken loans in the name of agriculture but invested in other sectors, which were the great impediments to microfinance activities.

There is a vast scope for microfinance in agriculture sector. There is no denying that the contribution of agriculture to the gross domestic product (GDP) in many countries in the world has declined. But it is still the biggest employer and foreign exchange earner of many countries, particularly in the Asia Pacific region and the Middle East and North African countries. Moreover, amid global environmental and sustainability concerns, huge investment is needed to offset the adverse impact that has already engulfed the agriculture sector. Farmers of such regions are very poor. Most of them are landless, marginal or small. But they are the backbone of the farming system. These farmers have very little access to finance, despite frantic efforts by the commercial banks and other lending windows to extend coverage. This is largely because of structural, managerial and policy apparatuses.

Agriculture needs extended financing not only to bail out the poor farmers from their chronic poverty but also to meet the growing demand for food and maintaining a sustainable food security. There are a lot of challenges in microfinance in agriculture and the challenges can be broadly mentioned from the point of view of farmers, related institutions and policy frameworks.

The challenges that the farmers face are lack of quality seeds, other inputs like fertilizers, fuel, insecticides and pesticides, irrigation facilities, appropriate technology, shortage of agricultural labour, inadequate pest and disease control arrangements, low rate of return and productivity, seasonality, poor agro ecology, natural calamities etc. Besides, there are other challenges for marketing of agro products, distribution channel, price fluctuation and proper packaging, access to finance, timely repayment of loan etc.

The challenges in microfinance from the institutional point of view relate to the absence of strong physical and organizational infrastructure, weak group formation, unplanned loan disbursement, and problems arising out of flawed management and supervision, higher transaction costs both for lenders and borrowers, higher chances of default in repayment, absence of linkage of loan repayment with harvesting of crop, lack of flow of fund, delays in timely disbursement, lack of reliable information about the borrowers, non-availability of information technology, institutional competence and capacity, technical capacity and training. As a consequence, farmers may be dependent upon only one crop with no other external source of income. Loan exemption by the government is yet another problem.

The policy framework of the government also influences the micro financing in agriculture. The challenges in policy framework can be stated as lack of friendly policy of the state or government to finance the activities in the agriculture sector, absence of proper legal framework, supportive interventions and vision in government policy, and inflexible policy of quickly changing operating and regulatory environment. So, creating sustainable financial institutions requires a supportive environment and macroeconomic stability. It is said that microfinance has performed best in those countries where the economic and political environment has allowed flexible interest rates.

Besides, the challenges in micro finance in areas with low population density aroused from some major problems. They face unique problems along with the common ones that are faced by the mainland farmers. But farmers of these low population density areas are generally poor and marginal. The majority of the population in these areas is dependent on agriculture. Low economic activities, accompanied by resource scarcity, force them to lead a sub- standard life. To improve the living standard of the farmers of the hilly areas, mountainous regions, remote chars, islands and coastal areas, it is necessary to undertake economic activities there on large scale. Access to micro financial services in the areas with low population density is very limited because of their geographic fragmentation,

demographic dispersion, economic inefficiency, communication gap and difficult transportation.

Due to the uniqueness of the areas, the challenges of microfinance in areas having low population density are also different. These may be stated as remoteness and scattered areas, inaccessibility, poor communication, absence of coordination among the concerned agencies, poor infrastructure, extreme climate, infertile land, lack of innovative products and appropriate delivery system, high mobility of people, poor quality of governance and financial transparency, absence of external agents, social security and language and persistence of cultural barriers in some areas, full of uncovered business risk and heterogeneous population. Moreover, lack of economic opportunities, confidence among the potential borrowers, reluctance of members to avail themselves of the loan facilities and the reluctance on the part of the staff of micro finance institutions (MFIs) to work in the remote areas are also the major challenges here.

Microfinance technologies in existing forms cannot be tuned to agriculture for reasons stated above. For microfinance to be effective in these areas new innovations are needed; here a tailor-made repayment schedule can be introduced as per the project income and the cash flow of the client. To address the challenges mentioned above, different stake holders should devise policies suitable for extending microfinance to the poor farmers. So, the country should take initiatives that will help bring together diverse stakeholders, financially strong and professionally managed apex development financial institutions, active partnership with farmers' organizations, effective as well as supportive public policies and establishing public private partnerships, thus forming a favorable synergy.

The world is now facing a global food crisis. This crisis is much bigger and challenging particularly for the Asia Pacific and Middle East and North African region. Each and every country should provide their own food security. This security requires, among others, the financing of farming activities to help boost agricultural production. The sooner the country devises the ways to introduce microfinance in agriculture, the better will be the outcome for the over-all development of the country.

As part of their social responsibility, the MFIs need to expand their microfinance services to both agriculture and the areas with low population density by adopting one or combination of measures, as noted above, keeping in mind the twin pillars of microfinance — that are reaching the poor farmers and ensuring sustainability of the MFIs.

Footnoting and writing style of the Bangladesh Journal of Political Economy

1. The Bangladesh Journal of Political Economy will be published in June and December each year.
2. Manuscripts of research articles, research notes and reviews written in English or Bangla should be sent in triplicate to the Editor, The Bangladesh Journal of Political Economy, Bangladesh Economic Association, 4/c Eskaton Garden Road, Dhaka-1000, Bangladesh.
3. An article should have an abstract preferably within 150 words.
4. Manuscript typed in double space on one side of each page should be submitted to the Editor. Submission of electronic version is encouraged.
5. All articles should be organized generally into the following sections: a) Introduction: stating the background and problem; b) Objectives and hypotheses; c) Methodological issues involved; d) Findings; e) Policy implications; f) Limitations, if any; and g) Conclusion (s).
6. The author should not mention his/her name and address on the manuscript. A separate page bearing his/her full name, mailing address and telephone number, if any, and mentioning the title of the paper should be sent to the Editor.
7. If the article is accepted for publication elsewhere, it must be communicated immediately. Otherwise, the onus for any problem that may arise will lie on the author.
8. The title of the article should be short. Brief subheadings may be used at suitable points throughout the text. The Editorial Board reserves the right to alter the title of the article.
9. Tables, graphs and maps may be used in the article. Title and source(s) of such tables should be mentioned.
10. If the Editorial Board is of the opinion that an article provisionally accepted for publication needs to be shortened or particular expressions deleted or rephrased, such proposed changes will be sent to the author of the article for clearance prior to its publication. The author may be requested to recast any article in response to the review thereof by any reviewer.
11. The numbering of notes should be consecutive and placed at the end of the article.
12. Reference in the text should be by author's last name and year of publication (e.g. Siddique, 1992, P. 9. In the list of references, the corresponding entry in the case of article should be in the following manner:
Siddique. H.G.A., "Export Potentials of Ready-Made Garments Industry-A Case Study of Bangladesh". The Dhaka University Studies. III, 1982, pp. 66-67.
In the case of books, the following order should be observed: Author, title, place of publication, publisher, date of publication, page number. As for example: *Hye, Hasnat Abdul, Integrated Approach to Rural Development*, Dhaka: University Press Limited, 1984, pp.3-4.
13. Reference mentioned in the text should be arranged in alphabetical order and provided at the end of the article.
14. The Bangladesh Economic Association shall not be responsible for the views expressed in the article, notes, etc. The responsibility of statements, whether of fact or opinion, shall lie entirely with the author. The author shall also be fully responsible for the accuracy of the data used in his/her manuscript.
15. Articles, not accepted for publication, are not returned to the authors.
16. Each author will receive two complimentary copies of The Bangladesh Journal of political Economy and 25 off-prints.



Bangladesh Economic Association
4/C, Eskaton Garden Road
Dhaka-1000, Bangladesh
Tel : 934 5996, Fax : 880-2-934 5996
Website : bea-bd.org
E-mail : bea.dhaka@gmail.com