

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

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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

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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 they are 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 off setting 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.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.

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 apprised 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 illegally 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 be 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. government 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 Procedures</u>	<u>Full</u>	<u>Total Identified²</u>	<u>Total Assessed²</u>	<u>Identified as Percent 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 obligations⁴⁵. 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. 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 itself⁷ 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.

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