

Fiscal issues and central banking in emerging economies: an overview

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Introduction

The view that central banks have an incentive to monitor the fiscal position of the government rests on at least two grounds. First, the government may be tempted to call on the central bank for finance rather than borrow in capital markets. Second, fiscal policy can have a large impact on the economy due to its effects on aggregate demand, and because perceptions regarding the sustainability of fiscal policy can affect financial markets. Problems in the implementation of fiscal policy could therefore interfere with the two widely accepted goals of central banks, which are to control inflation and contribute to macroeconomic and financial stability. They could also adversely affect the balance sheet or profitability of the central bank.

The risks to central bank goals are particularly high in emerging markets, where fiscal imbalances are frequently associated with economic disruptions and have impaired monetary policy implementation. Such disruptions are rare in advanced market economies, which appear to be less vulnerable to real or financial shocks, and whose governments are less susceptible to financing constraints.

The papers in this volume explore the subject of the meeting on “Fiscal issues and central banking in emerging economies” held at the BIS in December 2002 by focusing on three broad questions. First, how should central banks assess and manage the fiscal position, particularly over the medium term? Second, what is the experience with the use of countercyclical fiscal policy? Third, how do fiscal operations affect central bank balance sheets, and to what extent should such balance sheet effects be a concern? The contributions by central bank participants and BIS staff address these questions by highlighting the issues and discussing cross-country experiences and policies. Within this framework, the papers focus on issues that central banks consider particularly important.

1. Assessing and managing the fiscal position

Measurement issues

To choose a fiscal target, policymakers must first decide how to assess the fiscal position. This raises a number of problems, such as what should be included in measures of the fiscal position and how debt sustainability should be evaluated.

Many central banks prefer to monitor the fiscal operations of the central government because the data are more readily available. However, subnational governments, public corporations or extra-budgetary entities also affect the fiscal position of the government. Relying on central government data may not always lead to problems but, in a number of very visible cases, local authorities or other government-linked entities have incurred deficits that eventually had to be absorbed by the central government, or that led to money creation.

¹ This overview in particular, and the volume in general, have greatly benefited from the cooperation, comments and statistical input of the central banks invited to the meeting. Thanks also go to John Hawkins for his work in editing this volume, to Lizzie Locke and Karina Tarling for secretarial assistance, to Arwen Hopkins, Nigel Hulbert, Tom Minić, Alison Spurway and colleagues in the Monetary and Economic Department of the BIS for editorial suggestions and to Liliana Morandini and Gabriela Salvisberg for production assistance. This paper has benefited from comments by Palle Andersen, John Hawkins, Dubravko Mihaljek, Madhusudan Mohanty, Bruno Tissot, Philip Turner and William White. Opinions expressed are those of the author and not necessarily shared by the BIS or the central banks involved.

Recent experience also highlights the importance of using more comprehensive public sector accounts, which allow an assessment of the impact of quasi-fiscal activities and of the contingent liabilities of the public sector on the government's fiscal position. Government guarantees, pension liabilities or financial sector distress may ultimately add to the government's fiscal burden. For example, China's fiscal deficit could be as high as 5-6% of GDP (IMF estimates) if the government's quasi-fiscal liabilities from the banking system were included, compared to the 2-3% official estimate.

At the same time, it may be important to focus on net as well as gross debt to the extent possible. In this way, account can be taken of assets that may generate income to service debt. For example, in Brazil there are very liquid government assets (deposits of the social security system, tax collected by all government levels but not yet transferred to the treasuries, demand deposits of all levels of government - including treasury deposits at the central bank) that are potentially available immediately. These total nearly 7% of GDP, according to the paper by Goldfajn in this volume. As discussed further below, central banks often engage in fiscal operations that affect their balance sheets and remit profits to the government. Consolidating a government's fiscal position with the central bank can also provide valuable information.

A number of papers highlight the need to capture changes in government worth in a more forward-looking (and economically more sensible) way. For instance, there is a clear willingness to move away from cash methods of accounting when recording government expenditure and revenue, and instead to use the time of accrual (ie when the claim arose rather than when it was paid). Furthermore, privatisation receipts should be regarded as a capital transaction rather than current revenue. And future liabilities arising from current policies should be considered, although this may be empirically difficult. Such methods can all give a more accurate impression of the government's fiscal position. For example, the Czech public sector deficit for 2002 is estimated at 0.5% of GDP using a cash-based method, but a much higher 3.9% of GDP using a method that explicitly excludes privatisation revenues. Accrual methods also lead to higher estimates of the fiscal deficit in Hungary (see the respective contributions by Matalik and Slavik and by Kiss in this volume).

The rationale for, and implications of, various types of consolidation, as well as experience with or implications of the use of non-cash methods of accounting, are highlighted in a number of the contributed papers included in this volume as well as in the paper by Mihaljek and Tissot.

The sustainability of fiscal policy

A key question confronting policymakers and purchasers of government securities in emerging economies is the sustainability of fiscal policy. Some theoretical models of the long run stress "solvency", defined as ultimately repaying all debt. To achieve this, the present value of future fiscal surpluses must exceed the outstanding net public debt. In the short run, sustainability is more closely related to liquidity as it implies that interruptions in financing, rescheduling or default can be avoided without sudden adjustments in revenues or expenditures. Such an assessment is not easy; see IMF (2003). A low ratio of public debt to GDP is a useful indicator of the likely sustainability of a government's fiscal policies. A low ratio means that the government will be able to repay its debt under most conceivable economic conditions, so that investors will usually require a low sovereign risk premium. In contrast, if debt levels exceed a certain threshold, a country may find itself constrained in adopting expansionary policies, as it may experience higher sovereign risk premia and volatility in its costs of financing.

For example, in his contribution to this volume, Chung reports that Korea had ample scope to adopt expansionary fiscal policies to offset the impact of the financial crisis in 1997. The importance of a low level of public debt is also illustrated by the contrasting experiences of Chile and Brazil (respective public debt ratios of 14% and 49% in 2000) during the episode of financial turbulence observed in emerging economies starting around May 2002. Spreads on the debts of both economies rose significantly, but the increases in spreads in Chile from relatively low levels was not a major concern. In contrast, in Brazil, spreads rose from 780 basis points to a clearly unsustainable 2,700 basis points. (The sustainability of Brazil's debt in the face of shocks of this kind is the subject of Goldfajn's paper.)

The threshold debt ratio above which a country becomes vulnerable to shocks that may threaten sustainability is not precisely identified. Marshall suggests net debt of 25-30% of GDP in his paper; see also IMF (2002, 2003). Much depends on the level of private saving - the higher this is, the higher the threshold is likely to be. It also depends on a country's history of default and level of economic and institutional development; see Reinhart et al (2003). Experience suggests that this threshold is much

higher in the developed countries than in emerging market economies. It also depends on economic and political conditions and so varies widely among emerging economies. Public debt ratios in Asian countries are in some cases as large as in Latin American countries, but are generally thought to be more sustainable, as reflected in credit ratings and sovereign spreads.

For any given debt ratio, sustainability depends on the expected path of the public debt. Such debt dynamics may be described by estimating whether the primary fiscal balance is sufficiently high to prevent the debt ratio from rising; see Blanchard (1990). Mihaljek and Tissot's paper applies this analytical framework to a set of emerging economies, identifying a number of cases in which public debt ratios display a tendency to rise. Underlying these debt dynamics are factors such as the ability of the government to raise revenues or limit expenditures, medium-term growth prospects and the share of public debt denominated in foreign currency. In Hong Kong there is no net public debt but large budget deficits are rapidly depleting (substantial) fiscal reserves, raising sustainability concerns. (See the paper by Peng et al in this volume.)

As noted by Mihaljek and Tissot, debt sustainability may also be influenced by sudden increases in financing costs that may result from shifts in market sentiment. This is a major risk when debt is denominated in foreign currencies - debt/GDP ratios can jump in an alarming way when the exchange rate collapses. Other examples include cases with floating or short-maturity debt.² There are also many examples of countries in which contingent or previously unrecognised liabilities raise debt levels, often very dramatically. For example, as a result of a financial crisis, Turkey's public debt to GDP ratio rose from around 30% in 1999 to nearly 70% in 2001. Accounting for liabilities associated with the resolution of the 1997 financial crisis increased the estimate of the public debt to GDP ratio by two thirds in Thailand (to 54% in 2002) and nearly doubled it in Mexico (to 40%). Accounting for contingent or "hidden" liabilities would raise public debt estimates by 10 percentage points in Brazil and the Czech Republic. (See the respective contributions of Binay, Rattakul, Sidaoui, Goldfajn, and Matalik and Slavik to this volume.)

Other things equal, a country also appears to be more vulnerable to debt sustainability problems the larger is its external public debt (denominated in foreign currency) and the smaller its export revenues. In addition, the total external debt of the country may also matter, even if this debt is largely private, because debt servicing problems of the private sector may affect the exchange rate and the cost of financing of the government. Moreover, there have been cases in which the government has, for various reasons, assumed the debt obligations of the private sector. Due to much lower national saving rates and trade openness, the ratio of external debt to exports is several times higher in Latin American economies than in Asian countries with comparable ratios of public debt to GDP.

The preceding discussion thus suggests that, at any given point in time, debt sustainability will depend on the level of debt and underlying long-run fundamentals (the rate of growth of the economy, the real rate of interest, primary balance) as well as market sentiment that may influence the cost (and even availability) of financing. For this reason, the analysis of debt sustainability is often implemented by examining alternative scenarios. For example, the paper by Goldfajn argues that Brazilian public debt is likely to be sustainable under most plausible scenarios. Stress tests reported by Sidaoui suggest that Mexico's public debt will deteriorate in the medium term only in the most adverse case.

The actual (as opposed to the projected) performance of countries in achieving medium-term fiscal consolidation is described in a number of country papers. For example, Vijayaledchumy describes how Malaysia's public debt ratio fell from 103% of GDP in 1986 to 32% in 1997 before rising to around 44% in 2001. Fiscal stimulus packages implemented since the crisis of 1997-98 appear to have had no adverse effects on market sentiment. Marcus highlights South Africa's success in reducing budget deficits from close to 8% of GDP in the early 1990s to around 2% of GDP currently. In contrast, as noted by Mohan and by Uribe and Lozano respectively, India and Colombia were unable to sustain reductions in fiscal deficits in the 1990s. As discussed by Sidaoui and Vyugin respectively, Mexico and Russia are in a situation where the short-run fiscal position is temporarily favourable, but steps need to be taken to ensure that this is sustained in the long run.

² For a discussion of these effects, see Calvo et al (2002) and Goldstein and Turner (2003).

Transparency, communications and perceptions

Participants at the meeting discussed the relative merits of transparency in measures of the fiscal position, particularly with regard to hidden liabilities. In developed countries, the case for transparency seems unambiguous. While it may occasionally lead to adverse shifts in market sentiment, greater transparency appears unlikely to destabilise developed financial markets. On the contrary, transparency might well increase the confidence of investors, thus enhancing market liquidity. In addition, transparency could lead to a more efficient allocation of resources, and, by allowing government debt to be priced correctly, should create incentives for policymakers to maintain a sustainable fiscal position.

The benefits cited above could also exist in emerging economies. For instance, the importance of market discipline in shaping policy and curbing fiscal dominance (a situation in which fiscal policy ultimately governs price determination) is highlighted by the experience of Israel (see Sokoler's contribution to this volume). Nonetheless, the disclosure of problems that had previously been hidden can also lead to sudden changes in the perceived sustainability of public debt and interruptions in liquidity. For example, Goldfajn's analysis suggests that markets may have misinterpreted Brazil's disclosure of contingent liabilities ("skeletons") as reflecting a trend rather than a one-time increase in the debt ratio. The questions of how to ensure that data are interpreted correctly, and the timing of disclosure, warrant further examination.

A related question concerns the best strategy for communicating fiscal policy. In his paper, Farfán reports that a 1999 Peruvian fiscal law "requires the publication of a three-year macroeconomic framework containing the fundamental principles of fiscal policy, as well as macroeconomic forecasts ...". The law also spells out approval and publication arrangements intended to enhance understanding of fiscal policy intentions.

Fiscal targets or rules

Many emerging market economies have sought to limit deficits and curb the growth of public debt by adopting fiscal rules or targets, some supported by legislation. For example, in response to fiscal imbalances, in 2000 the Chilean government adopted a fiscal rule that targets a 1% central government structural surplus. In that same year Brazil adopted a fiscal responsibility law, which set an annual primary surplus target. It also set limits on expenditure and public debt, imposed rules for offsetting increased expenditure or tax revenue declines and controlling public finances during election years. In Malaysia, the government has no formal rules, but unwritten arrangements require that revenue exceed current expenditure and debt service payments have to be limited to 20% of such expenditure. The papers in this volume reveal that the approaches to such rules vary widely, raising a number of questions about their design.

Ideally, a target or rule should be sufficiently restrictive to achieve a desired fiscal goal in the medium term, while allowing automatic stabilisers to smooth incomes over the business cycle so that policy has an element of countercyclicality. This suggests that it may be appropriate for a country to adopt a medium-term or structural target, like Chile. In practice, however, emerging economies do not always rely on such targets. One reason may be that, as discussed below, automatic stabilisers appear to be weak, which may explain why countries have implemented countercyclical fiscal policy by engaging in off-balance sheet spending or sharply increasing the structural deficit. As described by Peng et al in their paper, Hong Kong is an example of the latter.

Another reason, relevant where debt sustainability is a concern, is that policymakers may find it necessary to achieve consistent reductions in budget deficits or debt ratios to reinforce credibility, rather than risk having markets misinterpret a cyclical increase in the budget deficit as indicating a permanent relaxation of fiscal policy. Under these conditions, a fiscal policy geared to medium-term fiscal sustainability may be procyclical. Because of the size and volatility of interest payments in some countries, the overall deficit may not accurately reflect fiscal policy effort, and the primary balance may provide a clearer signal, so targets are sometimes expressed in terms of the primary balance.

The importance of sustainability considerations in the setting of fiscal balance targets is apparent in a number of the contributed papers. Farfán notes that Peru targets a declining path for overall fiscal deficits that is consistent with a sustainable public debt ratio (and the central bank's inflation target). Sidaoui points out that Mexico's efforts to consolidate its fiscal accounts do not give it room to engage in countercyclical fiscal policy; on the contrary, fiscal policy in Mexico has been procyclical.

Appropriately designed fiscal rules could play a role in resolving the relationship between central and subnational governments in emerging markets. Subnational budget deficits have required restructuring or bailouts in a number of countries. In China before 1994, deficit spending by provincial or local authorities directly influenced money creation by The People's Bank of China. A number of tools are available to curb subnational fiscal deficits. These include deficit ceilings, restrictions on borrowing from central banks, limits on borrowing from commercial banks, rules on the use of borrowed funds, limits on the annual issuance of debt, limits on the outstanding stock of debt, and the absence of central government guarantees.

Effectiveness and flexibility

Given the apparent popularity of fiscal rules, one may also ask whether they are usually effective. The picture is mixed. A study by Bayoumi and Eichengreen (1995) suggests that fiscal rules are effective, but some of the research and examples cited by Mihaljek and Tissot indicate that they often are not. For example, while recently adopted fiscal rules in Brazil and Chile appear to have succeeded in curbing deficits, there are several examples in which countries have had difficulty in implementing rules. Experience with various rules in curbing subnational deficits has also been mixed. Part of the problem may be moral hazard: central governments are often reluctant to allow subnational governments to default, giving the latter little incentive to curb deficits.

While further research is needed to identify the reasons for these mixed results, it is apparent that the perceived costs of implementing rules often outweigh the benefits. The incentive to adhere to a fiscal rule under varying economic conditions should therefore be taken into account when designing the rule, for example by allowing for flexibility during cyclical downturns.

The role of incentives in the implementation of fiscal rules may also be highlighted by the experience of central and eastern European countries that are expected to join the euro area. Given that EMU accession may reduce long-term interest rates, one might expect there to be strong incentives for compliance with the fiscal provisions of the Maastricht Treaty. But so far fiscal consolidation has remained limited in central and eastern European countries. Rozkrut points out that the stringency of the Stability and Growth Pact will require a significant tightening of Polish fiscal policy in the near future, which may lead to significant costs in terms of growth.

2. Countercyclical fiscal policy and central banks

In response to the slowdown in the global economy since 2000, emerging economies have used various combinations of fiscal and monetary policies to dampen the external demand shock. However, the policy mix has varied, as countries have often resorted to easier monetary policies in response to sluggish growth, but have not always adopted countercyclical fiscal policies. What is the role of fiscal policy in stabilising business cycles in emerging economies? The contributions of central banks, and the paper by Mohanty and Scatigna in this volume, highlight the following points.

First, alternative measures of fiscal policy provide a mixed picture of policy responses during the recent slowdown. Around half of a set of 23 emerging market economies experienced rising budget deficits, suggesting that policy may have been countercyclical. But it is hard to judge because estimates of the structural, or the cyclically adjusted, budget balances are often not available in emerging economies.

Second, in contrast to advanced economies, automatic stabilisers appear to play a relatively small role in offsetting fluctuations in output in emerging economies. Low tax elasticities and the low share of taxes to GDP limit the role of revenue stabilisers. Expenditure stabilisers also tend to be small because of a large proportion of fixed expenditures and the general absence of (expensive) unemployment insurance. For this reason, many countries have resorted to discretionary fiscal policy to offset demand fluctuations. Measures of structural deficits tended to rise during periods of slower economic growth. The tactics varied, including boosting spending on employment-oriented programmes or projects thought to have high expenditure multipliers, switching expenditures from imported to domestically produced goods, the front-loading of expenditures and off-budget government investments tending to boost demand.

Third, the standard theoretical Keynesian case for using countercyclical fiscal policy in emerging economies subject to large shocks must be qualified by a number of factors. Small, or even negative, fiscal multipliers may result if confidence is damaged and interest rates rise, crowding out domestic investment.

Fourth, notwithstanding the obstacles cited above, fiscal policy has played an important role in boosting demand in a number of emerging economies. A notable example is Asia, where fiscal stimulus was used by many economies in the wake of the 1997-98 financial crises. Examining behaviour over a longer time period, Mohanty and Scatigna find that underlying fiscal balances improved during “good” times (when output growth picks up sharply) and deteriorated during “bad” times (when output growth falls sharply), suggesting some countercyclicality, with Asia apparently able to respond more strongly to slowdowns than Latin America. One explanation is that Asia is much less subject to financing constraints than is Latin America.

Fifth, monetary policy has also eased in a number of countries during the slowdown that began in 2001, apparently facilitated by low inflation (in the context of large output gaps in a number of countries), and the easing in global monetary conditions. The analysis of Mohanty and Scatigna suggests that monetary policy has played a larger role than fiscal policy in attempting to offset this slowdown, especially in Latin America. In some countries (China and Singapore), this was accompanied by fiscal deficits, so both policies were supportive. In other countries, however, monetary policy had to be tightened, for reasons discussed below.

Improving the effectiveness of countercyclical policy

As discussed above, and in more detail by Mohanty and Scatigna, emerging markets face special challenges in attempting to implement countercyclical fiscal policy. Automatic stabilisers are generally less effective, and financing constraints may limit the feasibility and effectiveness of stabilisation policy. What is the most appropriate fiscal policy response to these conditions?

There is no simple answer to this question. For credit-constrained economies engaged in fiscal consolidation, a procyclical fiscal policy in the short run - in which the underlying fiscal position will not deteriorate during a downturn - may be the only feasible (or appropriate) policy response. This point is made by Sidaoui in his contribution to this volume. In some circumstances, procyclical fiscal policy during a downturn may ease financing constraints by increasing confidence in government policies. This appears to have been the experience of Brazil in 2003, when the overachievement of fiscal surplus targets and reassuring government initiatives were associated with sharp declines in Brazilian sovereign spreads.

In most cases, emerging economies not facing financing constraints are able to adopt a medium-term structural fiscal target, allowing automatic stabilisers to work. For instance, Peru is attempting to design a system in which temporary deviations from fiscal targets are allowed during downturns, with provisions made for ensuring a return to target. (See Farfán’s contribution to this volume.) In Chile, the adoption of a structural surplus target has helped improve credibility and ease credit constraints for at least two reasons: (1) investors can tell more easily if deviations from the long-run fiscal stance during “bad times” are sustainable; and (2) a longer horizon makes authorities less susceptible to pressures to relax fiscal policy during “good times”. In addition, better access to credit can improve the operation of automatic stabilisers, thus enhancing the effectiveness of countercyclical policy.

Fiscal and monetary policy

The credibility of fiscal policy has a large influence on the conduct and effectiveness of monetary policy. Monetary policy is more effective when the private sector believes the government will not resort to inflationary deficit financing. This provides an additional tool for macroeconomic stabilisation. As long as inflation expectations are low, monetary policy can be used to offset a downturn during periods when fiscal policy cannot be expansionary. For several reasons, monetary policy may be the preferred tool for countercyclical policy, as it has a shorter implementation lag, a more predictable impact and is more easily reversed.

A credible fiscal policy not only facilitates an activist countercyclical monetary policy, it might also be a prerequisite for monetary policy effectiveness. Otherwise the perception that fiscal policy will be dominant (ie monetary policy will eventually adjust to the financing requirements of the government) would have adverse economic consequences. The contributed papers and Mohanty and Scatigna cite

a number of examples where such a conflict between fiscal and monetary policy is present. One example is provided by Israel, where the government's failure to meet deficit targets resulted in an upward shift in the term structure of interest rates as inflation expectations rose, and in higher exchange rate volatility. The Bank of Israel was compelled to raise rates during a cyclical downturn to maintain the credibility of its inflation target.

One factor which might lead to fiscal dominance is a high public debt burden. Some countries, such as Malaysia in the 1980s and 1990s (see Vijayaledchumy's contribution to this volume), have avoided such dominance by massively reducing the government's role in the economy.

Public debt and monetary policy

Aside from being affected by the size of the public debt, monetary policy effectiveness is influenced by the maturity of public debt and its composition. The share of short-maturity debt in emerging markets has tended to decline. However, the remaining maturity of public debt is still relatively short, especially in Latin America. Furthermore, there are debts indexed to short-term interest rates, inflation and the exchange rate (equivalently, there is debt denominated in foreign currencies that is not hedged). For these reasons, many emerging economies are still vulnerable to the risk of interruptions in financing. This has played a role in recent crises in Argentina, Brazil and Turkey.

The reliance on floating or short-maturity or exchange rate-linked debt may induce perverse monetary authority responses; see Goldstein and Turner (2003). To illustrate, a central bank would be reluctant to ease if the resulting currency depreciation would raise the burden of foreign currency debt. Hence, the indexation of public debt may also influence the channels of monetary policy transmission, sometimes in unexpected or perverse ways. Another example is that a currency depreciation is generally to be countered by higher domestic interest rates. However, if the public debt is indexed to short-term interest rates, the cost of the debt will rise, heightening uncertainty about sustainability and possibly accentuating the depreciation. As debt is often indexed to the exchange rate, currency depreciation will aggravate the public debt burden. Indexation of the public debt played a significant role in the recent difficulties experienced by Brazil and Turkey.

3. Central bank balance sheets and fiscal operations

Central banks are not like ordinary financial institutions. On the one hand, their primary purpose is not to maximise profits, but to achieve macroeconomic and financial stability. On the other hand, central banks are in a position to generate unusually large profits. They have the sole right to issue domestic currency, and because they are able to raise (seigniorage) revenues they have an economic or franchise value that is not reflected in conventional measures of central bank capital.

Governments often seek to capture central bank revenues in a number of ways that may impair the mandate of the central bank to control inflation. For example, the government may rely on central bank credit or seigniorage revenues to finance its deficits. As such deficit financing may involve increases in money creation and in inflation, it runs counter to the goals of the central bank.

In recent years, as commitment to macroeconomic stability has strengthened, reliance on central bank financing of government deficits and on seigniorage has declined. As noted in the paper by Hawkins in this volume, central bank lending to governments is now generally prohibited or limited. Overdrafts are allowed with somewhat more frequency. Central bank purchases of government bonds in the primary market (which in some cases may reflect the direct monetisation of government debt) are allowed without restrictions in only three out of 14 emerging markets surveyed, while purchases in the secondary market are generally allowed. An example of institutional changes supporting greater central bank independence is Peru. Farfán's paper provides details on the constitutional changes that

established central bank independence there, and describes legal restrictions on central bank financing to the public or private sector.³

In line with lower inflation, currency seigniorage as a percentage of GDP has fallen in a set of emerging markets from an average of 1.8% in the early 1980s to 0.5% in 1999-2001. Seigniorage from banks' balances with the central bank is also small, ranging from lows of 0.1% of GDP to a high of 1.5% of GDP. The modest revenues partly reflect the impact of financial liberalisation and lower reserve requirements. The paper by Hawkins spells out the different measures of seigniorage.

The net income of the central bank will also depend on the principles governing the transfer of central bank earnings to the government. In a large number of cases, the amounts are set by law. In others, the government may decide (China or India). In the emerging markets surveyed, the central bank usually has no discretion on the allocation of profits (one exception is the Monetary Authority of Singapore, which can decide after allocating minimum proportions to reserves and to the government). The amounts transferred range from 25% of profits in Peru to 100% in Israel.⁴ In some cases, such as the Philippines, the government also taxes some of the financial transactions and the profits of the central bank. This raises the question of whether the government should obtain revenues through profit distributions from the central bank or by taxing the central bank. In his contribution to this volume, Tetangco argues against taxing the central bank. In the case of the Philippines the government is in effect taxing the central bank's open market operations, reducing its ability to implement monetary policy.⁵

The government may also call on central banks to undertake a variety of quasi-fiscal operations (examples are given below) that expose central banks to potential losses that may deplete their capital. This raises the question of whether policymakers should care about low central bank capital or losses. The issue of low capital may not arise if the government is always willing to recapitalise the central bank. And even if it does not, low capital may not pose a problem for a central bank whose operations are profitable. However, a low level of capital may pose problems for a central bank that incurs losses and whose credibility is thereby impaired. Under these conditions, the ability of the central bank to meet its monetary objectives will depend on its ability to maintain an adequate amount of capital to deal with possible losses, or to avoid involvement in potentially costly quasi-fiscal activities, or both.

In some countries, the desired capital of the central bank is made explicit and should ideally be related to the shocks that could affect the central bank balance sheet. In addition to policy lending, there are two main examples of quasi-fiscal activities that result in losses or deplete central bank capital: (1) central bank intervention in foreign currency markets; and (2) central bank involvement in restoring financial systems in the aftermath of crises.

Central banks have incurred losses by hedging the currency exposure of domestic residents, or by engaging in sterilised intervention in foreign currency markets. As discussed by Marshall, one example of the latter case is Chile, which purchased foreign currency and sterilised the monetary effects by issuing interest bearing liabilities that paid a higher rate than the foreign assets it had acquired. The result was a persistent operating loss. There were no obvious adverse effects on the central bank's ability to reduce inflation. One reason may be that the overall fiscal position of the consolidated government (including the central bank) appeared to be sustainable.

Central banks have also been involved in rebuilding the financial sector in many emerging economies, including Chile, India, Indonesia, Korea, Mexico, Malaysia, Poland, Thailand and Turkey. In the first five cases, the central bank had to absorb some losses from these operations. In some other cases, such as Malaysia, the central bank books were better insulated. In what may be interpreted as forms of policy lending, The People's Bank of China provides an undetermined amount of financing to asset management companies holding non-performing loans, while the central bank in Hungary has incurred losses from providing development credit financed by foreign borrowing.

³ While these results suggest that central banks face reduced pressures to finance government borrowing, they should be interpreted with care. If banks passively acquire government bonds, the central bank may still indirectly finance government deficits through the banking system.

⁴ See the table on page 77 of this volume.

⁵ For a general discussion of issues associated with the taxation of the financial sector, see the papers in Honohan (2003).

Central banks are often expected to rebuild their balance sheet out of their own resources in the aftermath of crises. This may take a long time, or create incentives to tax the financial system, for example by raising reserve requirements. A poorly capitalised central bank may therefore find itself adopting measures that discourage financial sector development. An alternative is for the government to step in to recapitalise the central bank. However, there may be substantial disincentives for fiscal authorities to do this. Central bank accounting of losses is often not transparent, and stepping in to recapitalise a central bank may involve making losses more visible and subjecting its management to political debate.

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