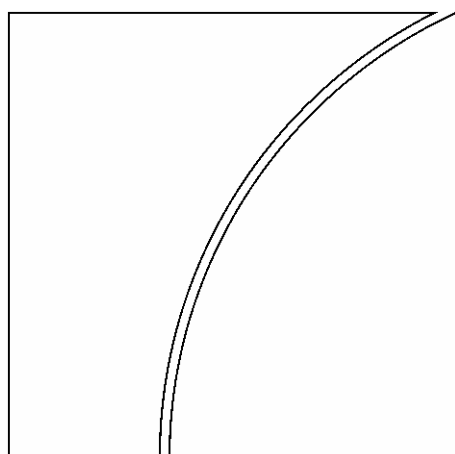




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Contents

Participants in the meeting	iii
------------------------------------------	-----

BIS background papers

Fiscal issues and central banking in emerging economies: an overview Ramon Moreno	1
Fiscal positions in emerging economies: central banks' perspective Dubravko Mihaljek and Bruno Tissot	10
Countercyclical fiscal policy and central banks M S Mohanty and Michela Scatigna	38
Central bank balance sheets and fiscal operations John Hawkins	71

Contributed papers

Are there reasons to doubt fiscal sustainability in Brazil? Ilan Goldfajn	84
Fiscal rule and central bank issues in Chile Jorge Marshall	98
China's monetary and fiscal policy Li Ruogu	107
Fiscal issues and central banks in emerging markets: the case of Colombia José Darío Uribe and Luis Ignacio Lozano	109
Fiscal issues and central bank policy in the Czech Republic Ivan Matalik and Michal Slavik	122
The fiscal deficit and macroeconomic stability in Hong Kong SAR Wensheng Peng, Jiming Ha, Cynthia Leung and Kelvin Fan	131
Calculating the fiscal stance at the Magyar Nemzeti Bank Gábor P Kiss	140
Fiscal issues and central banks in emerging markets: an Indian perspective Rakesh Mohan	146
Fiscal issues and central banks: Indonesia's experience Anwar Nasution	154
The interaction between fiscal and monetary policy in Israel Meir Sokoler	158
The fiscal response to the currency crisis and the challenges ahead - Korea's experience Chung Kyu Yung	167
Fiscal policy in Malaysia V Vijayaledchumy	173
Implications of fiscal issues for central banks: Mexico's experience José Sidaoui	180
Fiscal issues and central banks in emerging markets: the case of Peru Kurt Burneo Farfán	198
The tax-exempt status of the central bank in the Philippines Amando M Tetangco, Jr	208

The monetary and fiscal policy mix in Poland Marek Rozkrut	214
Budget and tax problems and central banks: Russia's experiences Oleg Vyugin	218
Assessing the fiscal policy stance in Singapore Edward Robinson and Angela Phang Seow Jiun	224
The implications of fiscal issues for central banks: the South African experience Gill Marcus	230
Thailand's recent public debt issues Yuwawan Rattakul	234
Some issues in fiscal policy and central banking: the case of Turkey Şükrü Binay	245
Previous volumes from Deputy Governors' Meetings.....	261

Conventions used in BIS Papers

lhs, rhs	left-hand scale, right-hand scale
billion	thousand million
...	not available
.	not applicable
\$	US dollar unless specified otherwise

2001-02 refers to a two-year period while 2001/02 refers to a single fiscal year.

Differences in totals are due to rounding.

Fiscal issues and central banking in emerging economies: an overview

Ramon Moreno¹

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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Fiscal positions in emerging economies: central banks' perspective

Dubravko Mihaljek and Bruno Tissot¹

1. Introduction

Fiscal issues have recently become more prominent in central bank discussions as a result of the widespread adoption of a stable, medium-term orientation for both monetary and fiscal policy. This development has prompted a re-examination of the respective roles of fiscal and monetary policies as stabilisation tools, and a reassessment of the role played by public sector imbalances in some recent emerging market crises. A large volume of analytical work has been devoted to these issues. However, relatively little is known about the way central banks in emerging economies assess fiscal positions in their countries, or about the practical problems that arise for monetary policy from issues such as public debt sustainability, the use of fiscal rules and intergovernmental fiscal relations. These issues are important both for central banks that set monetary policy on their own, taking fiscal policy as given, and for those that have adopted an institutional framework for coordinating monetary and fiscal policies. This paper attempts to fill this void. It is based largely on responses of central banks from emerging market economies to a BIS questionnaire, and subsequent discussions among central bank officials at a meeting held in Basel in December 2002.² The focus in the paper is on *levels* of fiscal balances and, hence, concerns for monetary policy that arise from fiscal sustainability issues. The accompanying paper in this volume by Mohanty and Scatigna discusses how central banks assess *changes* in fiscal positions and their effect on monetary policy.

Section 2 describes different ways of assessing fiscal positions by central banks. Section 3 looks at public debt sustainability. Sections 4 and 5 discuss the use of fiscal policy rules and intergovernmental fiscal relations that might support a more stable medium-term orientation for fiscal policy, and how they affect the conduct of monetary policy. Section 6 concludes with a brief overview of approaches to fiscal consolidation and their implications for monetary policy.

2. How central banks assess fiscal positions

Central government budget

Following the public finance literature (see Box 1), central banks in emerging economies rely on a range of budget balances in their analyses of the fiscal position of the government and the public sector. The choice depends on the aspects of fiscal policy that are of greatest interest to central banks. The most common measure of the fiscal position remains the balance of the *cash-based central government budget*. This is the simplest measure of the fiscal balance and the one linked most clearly to monetary financing of the budget deficit. Moreover, information on central budget positions is usually available on a monthly basis and quite rapidly. Policymakers in central banks therefore rely extensively on updates concerning the central government budget, making various adjustments to arrive at the measures of fiscal position that are relevant for monetary policy. Another rationale for this

¹ The authors thank Marc Klau and Michela Scatigna for valuable research assistance and Palle Andersen, Madhu Mohanty, Ramon Moreno, Philip Turner, Agustin Villar and Bill White for numerous useful comments. The views expressed are those of the authors and do not necessarily represent those of the BIS or central banks attending the meeting.

² The discussion refers to 23 emerging market economies from Asia (China, Hong Kong SAR (hereafter, Hong Kong), India, Indonesia, Korea, Malaysia, the Philippines, Singapore and Thailand); Latin America (Argentina, Brazil, Chile, Colombia, Mexico and Peru); central and eastern Europe (the Czech Republic, Hungary, Poland, Russia and Turkey); and the Middle East and Africa (Israel, Saudi Arabia and South Africa).

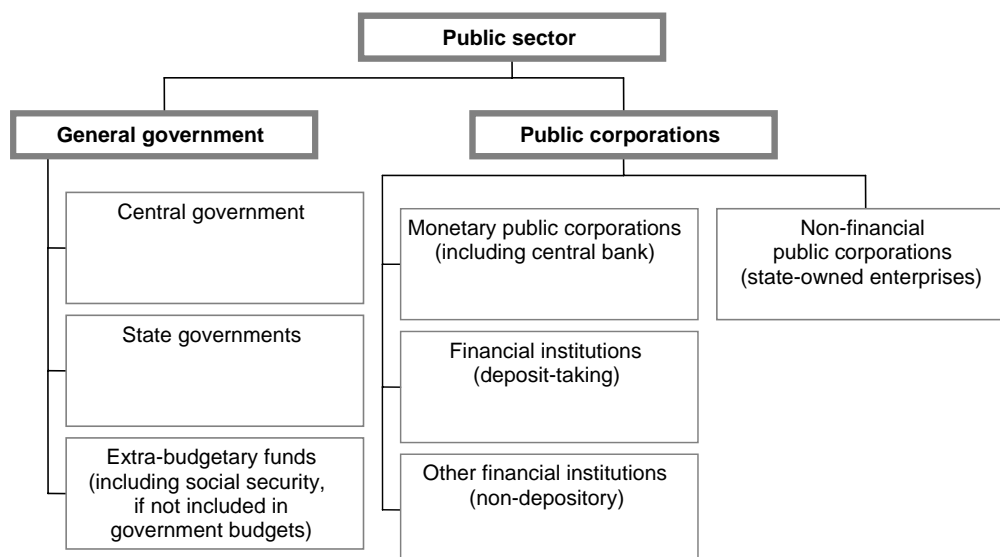
measure is that the central government typically dominates local governments in terms of both size and involvement in financial markets.

Box 1

Measures of the fiscal deficit

According to the public finance literature, there is no ideal measure of the budget balance, but rather a set of different budget balances that could be considered as more appropriate, each applicable to a specific circumstance; see Blejer and Cheasty (1993). Alternative definitions of the budget balance are unavoidable given the scope and operations of the public sector. Jacobs (2002), for instance, considers 22 alternative budget balances for South Africa.

A conceptually most appropriate way of measuring deficits would be to look at the change in the public sector's net worth (assets minus liabilities). In practice, such a measurement is quite difficult, if not impossible, in most countries. The difficulty lies in the valuation of public sector assets. As a result, fiscal deficits are usually measured by looking at the change in public sector liabilities. The conventional measure is the difference between consolidated government expenditure (including interest payments on public debt and subsidies given in the form of loans, but excluding amortisation payments) and total cash receipts (including taxes, non-tax revenue and grants, but excluding privatisation proceeds); see IMF (1986). By focusing on the financing gap that has to be closed by net borrowing, this conventional definition provides both a measure of the government's contribution to aggregate demand (and through this, to the external current account imbalance), and a measure of the crowding-out of the private sector in the financial markets.



With the development of domestic and international financial markets during the 1990s, governments have become less liquidity constrained in carrying out fiscal policy and more adept at separating the impact and accounting of a fiscal action. Cash-based accounting thus increasingly failed to capture adequately the timing of fiscal actions and their impact on the economy. In response, governments worldwide (starting with New Zealand in the late 1980s) have started to move toward resource-based accounting, which facilitates a more comprehensive assessment of the economic impact of government activity and the sustainability of fiscal policy. In particular, the introduction of the accrual (instead of cash) basis for recording transactions and the integration of balance sheets with flows for government are consistent with the need for government behaviour to be determined in the context of its intertemporal budget constraint. Thus, government policies will not be sustainable if they reduce the net worth of government too much. In a parallel effort aimed at improving data comparability, the United Nations developed a measure of the budget balance of the general government based on the UN's system of national accounts (SNA). To a large extent this framework has also been adopted in the 2001 revision of the IMF's *Manual on Government Finance Statistics*.

Countries with a history of high inflation, such as Brazil and Turkey, have tended to concentrate on the *primary balance* (total revenue less non-interest expenditure), as the main measure of their fiscal position because this measure helps them to detect more clearly any deterioration in the fiscal position caused by an acceleration in inflation. When inflation is stable, the primary balance is generally not

affected by the level of inflation because government revenues and non-debt related expenditures tend to follow the evolution of the price level. However, when inflation accelerates, real revenue tends to fall faster than real expenditure due to delays in collection of taxes (the so-called Olivera-Tanzi effect). While this deterioration shows up in both primary and overall balances, the primary balance gives a clearer picture of the effort needed to achieve fiscal consolidation. The reason is that interest payments typically incorporate inflation expectations and therefore tend to be highly volatile in a high-inflation environment. As this volatility is generally beyond the control of the authorities, the overall deficit clouds the picture of the extent of fiscal adjustment that is needed.³ Against this background, it is interesting to note that in the recent episode of rising inflation in Argentina and Brazil in 2002, inflation has apparently led to higher (rather than lower) primary surpluses. This issue is further discussed in the overview paper by Moreno in this volume.

General government budget

In countries with a federal structure of government or large subnational governments, it is necessary to look beyond the central government to the fiscal positions of state and local governments. National fiscal authorities have often been forced to cover the losses and obligations of subnational governments, in particular in Latin America (see Section 5). The coverage of the *general government* in fiscal accounts has improved in recent years, but data on the activities of local governments are usually only available with long delays.⁴ There are also difficulties with data consolidation, which may result in double counting. This creates considerable uncertainty for monetary policy. A related issue is that, despite availability of fiscal accounts on a general government basis and significant improvements in fiscal transparency, the budgetary process and political attention in most emerging economies remain focused on central government budgets.⁵ This is a major concern for central banks in larger countries, where central government frequently accounts for less than two thirds of general government spending. On the other hand, to the extent that local governments are subject to tight borrowing limits, their activities need not affect monetary policy or GDP growth in a significant way.

To verify to what extent it is important to include local governments in the assessment of fiscal positions, Graph 1 compares balances of the central government and the general government, measured in terms of GDP, during 2000-02. In Brazil, Chile, Hungary, India, Thailand and Turkey, the broader definition results in higher fiscal deficits (up to 4% of GDP in India). But in the Czech Republic, Peru, Poland and Russia, central and general government balances were of very similar size, while in Colombia, Mexico and South Africa the central government recorded somewhat larger deficits (in Korea, smaller surpluses) than the general government.

Fortunately, limited time series data available indicate that central and general government balances generally move in tandem. In Asian countries, different deficit (in Korea, surplus) measures widened during 2000-01, and are projected to narrow slightly in 2002. In Latin America and central Europe, central and general government deficits have both increased since 2000, while in Russia the different surplus measures have narrowed since 2000. A panel regression of changes in general government balances as a function of central government balances and a constant suggests that a 1 percentage point increase in the central government deficit raises the general government deficit by an almost identical amount (1.09%).⁶ Thus, the central banks that focus on the position of the central government would not seem to underestimate significantly the changes in the fiscal position of the general government.

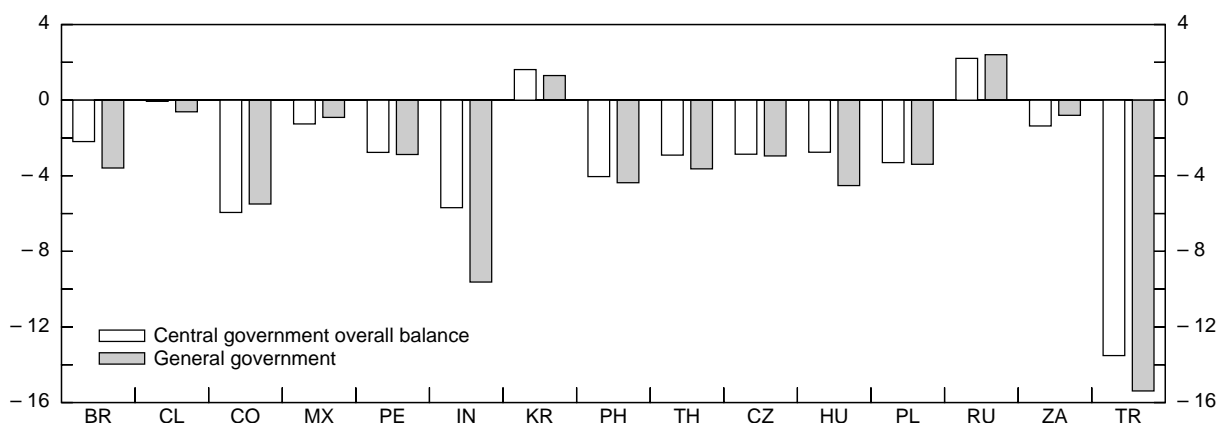
³ Conversely, in a process of disinflation, when expectations lag and the risk premium remains high, the real interest burden tends to rise sharply. By looking at the overall balance one would thus conclude that greater fiscal effort is needed to reduce the overall deficit than by looking at the primary deficit.

⁴ In central European countries, for example, final outturns of local government budgets are only known nine months after the end of the fiscal year. In Korea, fiscal spending and receipts of local governments will only be included in the consolidated fiscal balance beginning in 2003.

⁵ The same is of course true in many industrial countries (eg the United States).

⁶ The regression covers 12 emerging economies for which the data were available for the period 2000-02 (Brazil, China, Colombia, the Czech Republic, Hungary, India, Korea, Peru, the Philippines, Poland, Russia and Singapore). The estimated coefficient on the central government deficit is statistically significant at the 1% test level.

Graph 1
Central government and general government balance¹



BR = Brazil; CL = Chile; CO = Colombia; MX = Mexico; PE = Peru; IN = India; KR = Korea; PH = Philippines; TH = Thailand; CZ = Czech Republic; HU = Hungary; PL = Poland; RU = Russia; ZA = South Africa; TR = Turkey.

¹ As a percentage of GDP; average 2000-02.

Sources: IMF; central banks.

Other fiscal activities

Central banks in emerging economies are increasingly using more comprehensive *public sector accounts* in their analyses. Heightened attention to such indicators has resulted not only from greater availability of fiscal data, but also from the realisation that fiscal accounts often exclude extensive quasi-fiscal activities and contingent liabilities of government and public sector institutions (see the Appendix for a taxonomy of fiscal risks).⁷ The scope of fiscal activities that remain outside government budgets is of considerable importance for central banks because it is difficult to conduct short-run monetary policy without knowing the fiscal position. However, data on such activities are generally not provided to central banks on a regular basis. As a result, for many central banks the margin of uncertainty about the government's fiscal position often amounts to several per cent of GDP. The following examples illustrate that any analysis of a country's fiscal position is far from complete if it overlooks the obligations the government has taken on outside its budgetary system:

- Measured fiscal balances in many Latin American countries during the first half of the 1990s looked better than they really were because they included privatisation receipts "above the line" but did not show liabilities such as pension arrears that were later partly recognised;
- In the Czech Republic, Mexico and Russia sizeable short-term public sector obligations were hidden in the balance sheets of weak financial institutions under government control;
- The crises in Asia, Russia and Turkey have shown that when the stability of a country's financial system is at risk, markets usually expect the government to provide financial support that far exceeds its legal obligation;
- Many emerging economies rely on guarantees, extra-budgetary funds and state development banks as a non-transparent substitute for budgetary subsidies and for bypassing budgetary ceilings on government consumption and investment expenditure. One example is Mexico's public works programme *Pidiregas* (Projects with a deferred impact on public expenditure recording), worth an estimated 4% of GDP. It is financed with funds raised internationally under the guarantee of the federal government. Spending under this

⁷ The paper by Hawkins on central bank balance sheets in this volume discusses how governments may influence the major components of central bank accounts through their quasi-fiscal activities.

programme is not registered “above the line” until the project is finished and received by the public sector.

- China is another striking example of the importance of the broader public sector for the assessment of the fiscal position. The official data show that China’s state budget deficit has hovered at relatively low levels (2-3% of GDP) over the last 20 years, even though fiscal activity extends well beyond the official state budget. Following the formal separation of state-owned enterprise finances from the budget, the government has used the banking system extensively to support state-owned enterprises, and a significant share of these loans has become non-performing. The loan losses of the state-owned banks, although not legally a liability of the government, would have to be covered by additional state resources in the future if deposit liabilities are to be honoured. If the government’s quasi-fiscal liabilities from the banking system were included, the broader fiscal deficit would be significantly larger (estimated at about 5-6% of GDP by the IMF), as would be the level of government debt.⁸

Table 1 indicates to what extent some of these non-traditional budgetary items are being accounted for in the fiscal accounts. Off-budget expenditure by various government-supported entities remains largely unaccounted for. Hungary, India, Indonesia, Israel, Mexico, Peru, the Philippines, Poland, Russia and Thailand estimate but do not include such expenditure in public sector accounts. Similarly, contingent liabilities are estimated but not included in public sector accounts in Brazil, Chile, Colombia, India, Israel, Mexico, Peru, the Philippines, Poland and South Africa.

Table 1
Accounting for special items

Off-budget expenditure	
Estimated but not included in the accounts	Hungary, India, Indonesia, Israel, Mexico, Peru, ¹ Philippines, Poland, Russia, Thailand
Not quantified	Chile, Czech Republic
Contingent liabilities	
Shown as financing or a balance sheet item	Indonesia, Russia
Estimated but not included in the accounts	Brazil, ² Chile, Colombia, India, Israel, Mexico, Peru, Philippines, Poland, South Africa ³
Not quantified	Argentina, Czech Republic, Hungary, Thailand
Government asset sales	
Shown as budget revenue or in government income statement	Argentina, Chile, ⁴ China, Hong Kong, India, ⁵ Malaysia, Mexico, Thailand, Turkey
Special item in budget revenue or government income statement	Brazil, Chile, Hungary, Philippines, Singapore, ⁶ South Africa ⁷
Shown as financing or item in government balance sheet	Argentina, Colombia, Czech Republic, Indonesia, Israel, Peru, Poland, Russia, South Africa, ⁸ Turkey

¹ Included in budgetary accounts. ² Included in the debt calculation and projections. ³ Actual audited data. ⁴ Only capital gains. ⁵ Proceeds from disinvestments in public sector undertakings. ⁶ Included under capital receipts in the budget. ⁷ Disposal of assets (ordinary). ⁸ Disposal of assets (privatisation).

Source: Central bank questionnaires.

⁸ Recognising the stock of non-recoverable bank loans, estimated at between 50–75% of GDP at end-2000 (of which an amount equivalent to 15½% of GDP has been transferred to asset management companies), would raise public debt to 75-100% of GDP as of end-2000; see IMF (2002a).

Table 1 does not reveal considerable variation regarding the types of off-budget expenditure and contingent liabilities that are being accounted for. Most countries identify ex post at least some of what had previously been contingent liabilities in their fiscal accounts; examples would be costs associated with banking failures or the need to clean up liabilities of entities being privatised. But ex ante coverage rarely extends to implicit direct liabilities such as future healthcare, pension and social security obligations of the government.⁹ Central European countries often exclude one-off transition-related expenditure (eg transitional costs of pension reform in Poland) in order to arrive at a measure of the budget deficit that is relevant for projecting a deficit reduction trajectory ahead of entry into European monetary union (see Section 4).

The last part of Table 1 shows how countries account for proceeds from privatisation, an asset item that has become increasingly important for the assessment of fiscal positions over the past decade. Many Asian countries still include proceeds of government asset sales in budget revenue, ie “above the line” rather than as a financing item. Most emerging economies, however, distinguish government asset sales as a special item in the budget, or account for it as a financing item (ie “below the line”). It should also be noted that covering the activities of public corporations in public sector accounts is not always straightforward. Many public corporations are run like private companies and their shares are publicly traded (eg national petroleum companies). Most countries consider only investments of such firms as government capital spending.

An issue of particular concern for central banks in highly indebted economies is how to disclose the information on contingent liabilities to the markets. There is a feeling among many central bankers that disclosure standards for emerging economies have become more stringent than for advanced market economies in recent years. Most central banks agree that appropriate accounting of contingent liabilities (such as local government borrowing, extra-budgetary funds and losses of state-owned enterprises and banks) is necessary in order to provide the right incentives to policymakers and borrowers. However, disclosure of previously unrecorded liabilities may be misinterpreted (Why is the government revealing the “skeletons in the closet” now? Is there more to come?), and sometimes gives speculators an idea of vulnerable points to attack.¹⁰ Markets in particular view sudden jumps in the debt-to-GDP ratio as a sign of debt sustainability problems (see below). There is thus an incentive to reveal contingent liabilities slowly or not at all. One way to avoid such jumps in expenditure is to include items such as loan guarantees in the budget at the time they are approved rather than when they come due. On the other hand, central banks that have dealt extensively with different contingent liabilities feel that one should not wait for a crisis to recognise such liabilities - if markets had not paid attention to contingent liabilities before a crisis, they would certainly do so afterwards.

In summary, although central banks and fiscal authorities in emerging economies are for the most part aware of the need to look beyond the narrow central government budget, their assessments of the fiscal positions of the general government and the public sector are still far from comprehensive. An additional problem is that the budget-making process typically retains a one-year focus in most countries - in particular, line ministries’ concerns rarely extend beyond the current fiscal year. Multi-year fiscal frameworks have been developed mostly in the context of IMF-supported programmes (Indonesia, Korea, Turkey) or EU accession (central Europe), or have been in place as part of narrower budgeting (Hong Kong, Singapore) or planning exercises (India), rather than as part of a comprehensive macroeconomic framework.

At the same time, one should be aware of the fact that different policy questions call for different measures of fiscal position. If, for instance, the question is how to finance the fiscal deficit, it is appropriate to exclude from public sector accounts entities such as fully funded pension schemes or the state-owned enterprises that are not likely to be bailed out by the government. If the main issue is the macroeconomic impact of changes in fiscal positions, then it is appropriate to include pension fund activities because they often affect total liquidity by depositing their receipts with the central bank or the banking system, which affects money supply. If the policy concern is resource allocation, then it is necessary to include the state enterprises as they could crowd out the private sector.

⁹ With the exception of New Zealand, most industrial countries do not account for such items, either.

¹⁰ It has been argued, for instance, that one could not rely on market analysts to interpret the information on quasi-fiscal activities correctly. Even with the IMF’s SDDS there had been misinterpretations of the data, with negative consequences for some governments. Harmonisation of information was therefore not sufficient; one also needed to educate the markets.

3. Debt sustainability

Monetary authorities in emerging economies are specially interested in the issue of debt sustainability at the general government level. One major reason is the necessity to conduct coherent macroeconomic policies: how far can monetary policy be pursued independently over time if the government debt service requirements are mounting uncontrollably? Central bankers may thus be willing to consider the current fiscal position, as noted above, but also to assess its medium-term implications and in particular whether the public debt looks sustainable. This criterion can be theoretically defined as the ability of the government to service its liabilities in the long run. However, this concept is not an objective one since it depends in practice on market expectations, which can change suddenly and markedly. To be sure, lots of countries - including advanced economies - have been subject to much concern when risk premia quickly changed. But this issue is of particular interest in emerging economies, where debt dynamics have more often been unstable. Moreover, fiscal deterioration has been a key factor triggering financial crisis in several emerging economies, although with different intensity across countries.

Public debt sustainability and the conduct of monetary policy

Financial markets are less mature and stable in emerging than in advanced economies: real interest rates are thus considerably higher; economic developments are more volatile; and risk management technology may not be well developed. These circumstances have been the by-product of three fundamental changes: (a) the discontinuation of financing of deficits by the monetary authorities - a recent and striking example of this being India since 1998; (b) the deregulation of interest rate regimes, implying that public debt has increasingly to be served at market-determined rates; and (c) the relaxation of capital controls, which has increased the exposure of emerging markets to sudden shifts in international investors' risk aversion. Certainly, these changes have mostly been welcome, as they helped to bring down inflation and to improve the functioning of these economies. Nevertheless, these circumstances have made the issue of public debt sustainability of particular importance for the conduct of monetary policy in emerging market countries.

First, a deteriorating fiscal situation can directly affect financial conditions. This is obviously linked to the relatively limited size of the bond markets, where the government sector is by far the largest borrower - and sometimes the only significant one for external funds. In these conditions, substantial pressures on interest rates and exchange rates can result from an increase in public borrowing. Moreover, the size of these effects is uncertain, and their signs may depend on the amplitude of fiscal deterioration. For instance, recent developments in central Europe have shown that a moderate increase in the budget deficit can result in an appreciating currency due to higher domestic interest rates. In contrast, a larger fiscal deterioration could lead to an upward adjustment in risk premium, leading to both sharply higher interest rates and a marked exchange rate depreciation (see below).

Second, public debt sustainability and financial markets can interact indirectly. Even without any increase in government borrowings, concerns about the fiscal outlook could affect general confidence, for instance when investors suddenly come to believe - wrongly or not - that debt dynamics are not sustainable over the medium term. This could lead to higher risk premia and trigger unexpected movements in currencies and interest rates, raising the risk of a financial crisis.

Third, public finance fragility is often considered a warning indicator, ie a sign of other - and perhaps hidden - fragilities in the rest of the economy. Hence, markets attach specific importance to fiscal credibility when judging the soundness of macroeconomic indicators. For instance, they tend to be less tolerant of current account deficits if the country is characterised by large fiscal fragilities. Or they will scrutinise more rigorously the health of the corporate and banking sectors. Moreover, worries about public finances can jeopardise institutional commitments and make them unsustainable. For instance, fixed exchange rate arrangements will not look credible and can be attacked in case of fiscal profligacy. Such "spillover" effects played a critical role in triggering the collapse of Turkey's exchange rate regime in 2001.

The confidence channel may also play a significant role when markets perceive the fiscal position as an indicator of the "real" strength of authorities' commitments, which could be fundamentally sustainable but lack enough credibility. For example, the EU accession countries that would like to join EMU have committed themselves to fiscal discipline. For the time being, public deficits can be financed relatively easily, as financial markets anticipate convergence of long-term interest rates with

those in EMU. But a further degradation of their fiscal position, although “sustainable”, could be perceived as a sign of weakening commitment, in particular in the light of the structural problems that still have to be solved as part of EU membership requirements.

More importantly perhaps, fiscal soundness is often a key element of market assessments about the ability of monetary policy to remain independent from political pressures. Thus, perceptions that a loose fiscal policy might eventually dominate a credible monetary policy can indirectly add to pressure on current interest rates. In Argentina, for instance, the difficulties faced by the central government in trying to curb spending by provincial or local authorities before the 2001-02 crisis might have affected market perceptions of the independence of monetary policy.

These aspects of fiscal sustainability not only affect financial conditions, but also have in turn an impact on output and inflation performance and thus interfere with the conduct of monetary policy. For instance, concerns about public debt sustainability in Brazil in 2002 led to a rise in interest rates and to currency depreciation, causing weaker growth but also inflationary pressures in spite of a relatively muted exchange rate pass-through. Systemic risks can also trigger an explicit response from monetary authorities, as central banks could adopt a stricter stance to counterbalance the degradation of investor sentiment. The central banks may also remain cautious with interest rates if they feel that the government has underestimated fiscal risks. They might even try to act pre-emptively to prevent a self-fulfilling deterioration in market expectations.¹¹

A simple approach to assessing public debt sustainability

The basic concept of solvency is a good starting point for any debt sustainability analysis, although it may be deficient in many ways. It states that the present value of future fiscal surpluses must equal the stock of the outstanding net public debt, ie that over time there is no debt left. Public debt is thus considered as non-sustainable if solvency is not respected, assuming ex ante no change in policies. However, such an assessment is not an easy task, not least because a sufficient record of historical data as well as some stability in public finance indicators is required. Meanwhile, several technical assumptions have to be made, and studies on industrial countries have often led to ambiguous conclusions. Such difficulties are likely to be even greater for emerging economies.

In practice, the most obvious indicator to focus on is the ratio of net public debt to GDP.¹² For fiscal policies to look sustainable, the level of the debt-to-GDP ratio needs to be bounded, ie it should not grow without limit. The dynamics of debt also matter. If the “sustainable” level of debt is well above its current level, the country could theoretically experience high fiscal deficits for a long time. But such developments have often been perceived as unsustainable by investors, raising the risk of a crisis. In contrast, a high debt level could be perceived as sustainable if it is decreasing. In Russia, a shrinking debt-to-GDP ratio has recently improved markets’ perceptions of sustainability, although memories of government default are still fresh.¹³

All in all, there is strong evidence that financial markets react adversely when the following two conditions exist in tandem: (a) the public debt is growing rapidly; and (b) the level of debt in relation to GDP is considered as “high”. An easy way to summarise these two conditions is to calculate the government budget balance that is required to stabilise the debt-to-GDP ratio over a given horizon. This kind of assessment generally relies on the view that current policies will be maintained and that growth in the economy will converge to its steady state rate. Under some simplistic technical assumptions,¹⁴ this leads to the following condition:

$$b^* \approx -d (g + \pi) \tag{1}$$

¹¹ For instance, negative sentiment ex ante, despite no evidence that public debt is unsustainable, could lead to higher interest payments, larger deficits, and finally an ex post fiscal degradation.

¹² Because of the lack of data, following calculations are made using gross (and not net) public debt.

¹³ Another factor suggesting that the level of the debt-to-GDP ratio is not a sufficient indicator of public debt sustainability per se is that this ratio can change dramatically following changes in the methodology of national accounts, in particular with respect to the measurement of informal activity.

¹⁴ In particular, both g and π must be well below unity.

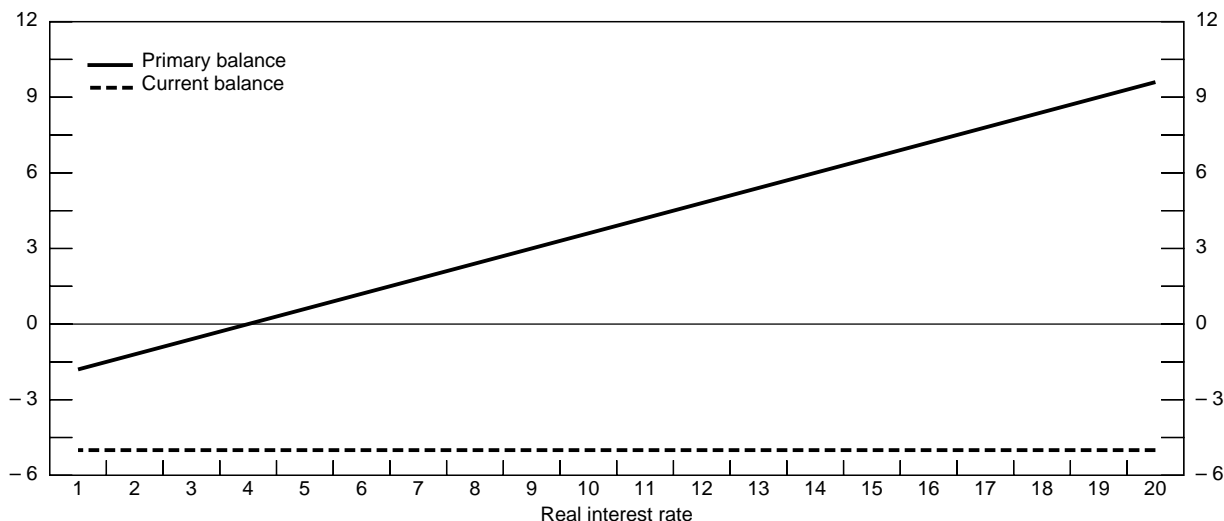
where b^* is the government budget balance (as a ratio to GDP) needed to stabilise the debt-to-GDP ratio,¹⁵ d , g the real growth rate and π the inflation rate (GDP deflator). Both g and π are usually the “potential” rates expected under reasonable medium-term economic prospects. When the debt ratio is on a growing trend - ie when the actual budget deficit ($-b$) is higher than the sustainable deficit ($-b^*$) - the gap between b^* and b indicates the budgetary effort required to stabilise the debt ratio. One can also look at the implied conditions for the primary budget (b excluding interest payments or b_p), since (1) can be rewritten as:

$$b_p^* \approx d(i - \pi - g) \approx d(r - g) \quad (2)$$

where b_p^* is the government primary budget balance needed to stabilise the debt,¹⁶ i the average nominal interest rate applied to the debt and r the corresponding real rate ($i \cdot d$ is thus the interest payments). A third indicator can be the rise in taxes required to stabilise the debt ratio, described as the “tax gap”.

This approach underscores the key parameters influencing the dynamics of debt. For instance, Graph 2 shows how debt dynamics change when real interest rates rise. To conclude, debt sustainability is greater when debt ratios and real interest rates are low, and when the pace of economic growth and the primary budget balance are high.

Graph 2
Fiscal balance required to stabilise the debt-to-GDP ratio¹



¹ As a percentage of GDP; calculated assuming GDP growth of 8% (nominal) and 4% (real) per year, and a public debt-to-GDP ratio of 0.6.

Source: BIS calculations (see equations 1 and 2 in the text).

Rapid changes in debt sustainability prospects

The forward-looking nature of this approach to calculating debt sustainability makes it open to a wide range of economic uncertainties. In particular, a sustainable public debt is identified as one that is consistent with a stable equilibrium path of the economy. But underlying economic policies could change, not least because of political instability and credibility problems. Moreover, output growth has proved to be relatively volatile in emerging economies, implying that developments expected to be sustainable could suddenly turn less favourable. Such changes could result from adverse supply side shocks (eg changes in the terms of trade or natural disasters). Higher risk aversion in global financial

¹⁵ To be sure, all the values of b that are greater than b^* respect the sustainability condition.

¹⁶ The values of b_p that are greater than b_p^* also respect the sustainability condition.

markets has also played a significant role, as seen in 2002. Finally, while most public debt sustainability analyses rely on several independent assumptions for fiscal balances, interest rates and output growth, there are, in reality, interactions between policies and key economic variables (inflation, national savings, accumulation of capital, etc). For instance, poor fiscal prospects could push up risk premia, thus raising real interest rates and reducing debt sustainability prospects in a cumulative way. In contrast, there might also be positive feedback effects in some circumstances. For example, some EU accession countries have argued that current government deficits are essential for launching large infrastructure projects, which should improve potential growth prospects.

Even countries with low levels of public debt can face a marked and sudden deterioration of their fiscal position during times of financial distress. Hence, debt sustainability assessments can change rapidly, with three factors having particularly large and sudden effects on the debt-to-GDP ratio:

- A protracted rise in **interest rates**, with the maturity structure of the debt playing a critical role. For instance, a short-term debt structure implies that the authorities will have to roll over their debt rapidly, leading to a sharp increase in interest payments. This has been an important factor in Turkey, where domestic public debt has an average maturity of only 140 days, and in Brazil, where a significant part of the debt was indexed to short-term rates.
- A sharp depreciation in the **exchange rate**, which will directly lead to a surge in the debt-to-GDP ratio if the amount of public liabilities denominated in foreign currencies is substantial, or if domestic debt has exchange rate indexed instruments. Hence, foreign currency borrowing entails substantial risks in terms of debt sustainability, not least because emerging markets can be affected by sharp and sudden shifts in exchange rates. For instance, the debt-to-GDP ratio in Argentina was lower than in several other economies (emerging as well as industrial) prior to the 2001-02 crisis, but it soared after the collapse of the peso.
- A sudden recognition of **unrecorded public liabilities**, for instance when the government has explicitly or implicitly guaranteed the debt of other agents. Even in Southeast Asia, where countries had generally maintained a track record of fiscal discipline before the 1997-98 crisis, the issue of public debt sustainability arose as implicit state guarantees in the corporate or the banking sector emerged. And in Brazil, it is now assumed that the recognition of already existing hidden liabilities (so-called “skeletons”) could lead to a rise in the debt-to-GDP ratio of around 10 percentage points in the current decade.

To be sure, such sudden increases in the debt level will not automatically signify poor sustainability prospects. For instance, Asian public debts have generally been considered sustainable despite a sharp surge after the 1997-98 crisis, which was mainly seen as a one-off event. Moreover, higher debts were in some cases a consequence of a quick recapitalisation of financial institutions, which was indeed welcome in order to clean up weak balance sheets and allow a resumption of bank lending. Abandoning an unsustainable exchange rate regime can also improve growth prospects and mitigate fiscal worries in turn. This seems to have been the case for Brazil in the immediate aftermath of the 1999 devaluation.

The need for a broader range of indicators

These comments imply that a thorough assessment of public debt sustainability in emerging economies has to take into account the possibility of sudden adverse shocks. In assessing the underlying health (and potential exposures) of the public finances, a number of indicators are often looked at by central banks:

- The **depth and liquidity of domestic financial markets**. This is a key factor allowing stable domestic financing conditions for government borrowings, and also in reducing the need for external funds in difficult times. India has taken various measures since the early 1990s to widen and deepen the domestic market for government securities. Characteristics of the holders of the debt can also become critical, for instance whether they are domestic or foreign lenders. The former are often captive investors in terms of portfolio management, while non-residents are sensitive to swings in global liquidity conditions and in risk appetite for the entire emerging market asset class.
- The **structure of the debt**. If markets were complete and efficient, the composition of debt would not matter in the determination of interest rates. In practice, this is not the case.

Moreover, attempts to keep debt servicing costs low could justify a preference for issuing particular assets. For instance, as the yield curve steepens, long-term borrowing becomes more expensive, and the government might be tempted to shorten maturities or to rely more on floating rate debt. If short-term rates subsequently have to be raised more than initially expected, this would raise the risk to sustainability in the longer run. On balance, it is assumed that debts of longer maturity are safer in terms of refinancing risk. For instance, public debt is quite high in Indonesia, but interest payments are relatively stable because of a rather long maturity structure. Meanwhile, the more public liabilities are denominated in foreign currencies and the lower is the ratio of exports to GDP, the higher is the risk to debt sustainability in case of a significant depreciation of the domestic currency.

- The **quality of public revenues and expenditures**. On the expenditure side, upward pressures can result from factors such as indexation rules or significant discretionary spending power at the lower levels of the government. On the revenue side, a relatively high dependency on specific sectors (oil, tourism) can lead to volatility in tax revenues. Meanwhile, authorities may have only limited capacity to generate additional revenues if the country has a narrow tax base, a large grey economy or a weak tax administration. These characteristics might adversely affect debt sustainability prospects by impeding fiscal adjustment in case of adverse shocks.
- The **current public deficit**. The higher the current budget deficit, the less sustainable is the public debt. Nevertheless, a more sophisticated analysis may be required to determine whether a deteriorating fiscal position is mainly the result of temporary cyclical developments or more permanent structural changes. Other elements, such as privatisation receipts or the possible use of off-budget sources of funding - such as extra-budgetary funds, state agencies and public enterprises - should also be looked at (see Section 2).
- The **track record** of the fiscal authorities. A long period of fiscal discipline helps to foster government credibility, so that markets can be more tolerant of a temporary increase in debt ratios. An important point in this context is whether multi-year fiscal frameworks are in place, allowing pre-announced and transparent rules to fix market expectations. For instance, Poland has a commitment to keep the national public debt under a constitutional limit of 60% of GDP (see below).
- Implicit or **potential public liabilities**. A forward-looking approach to debt sustainability should consider potential liabilities, in particular the risk of a systemic banking crisis requiring large government assistance. Other potential or implicit liabilities may arise from off-budget fiscal operations, implicit state guarantees in the corporate sector, or future pension liabilities set to emerge in pay-as-you-go retirement schemes. Another example is the so-called “transformation institutions” in central Europe. So far, privatisation revenues have covered their losses, but they are expected to accumulate sizeable debts in the future.

To conclude, three points emerge from the experience of emerging market economies. First, the level of debt at which sustainability becomes a problem can differ over time and across countries. Moreover, the exact threshold at which a country becomes vulnerable to default seems highly dependent on market sentiment and resulting changes in interest rates or exchange rates.

Second, given the extent of these uncertainties, it is important to assess thoroughly the risks to debt sustainability, including looking at different stress-testing scenarios. For instance, the paper in this volume by Goldfajn assumes several risks to fiscal prospects before concluding that the Brazilian public debt is sustainable under “reasonable” assumptions. Even so, this approach might underestimate the likelihood of default, since “unreasonable” assumptions might still materialise.

Third, government budgetary projections have often shown a tendency to “official optimism” and assigned a small weight to the possibility of unexpected shocks. It would be desirable that fiscal authorities build in some room for manoeuvre, for instance by looking at scenarios that focus on recent developments of the debt sustainability criterion. A sharp increase in the difference between the current budget deficit and the one that is required for stabilising the debt ratio could serve as a useful warning signal, even though both the level of debt and its rate of change might look “sustainable”.

Table 2

Elements of public debt dynamics, end-2001

	Debt ¹	Debt sustainability criterion ^{1,2}	Currency exposure ^{3,4}	Interest rate exposure ^{3,5}	Debt dynamics ⁶
China	15	1.7	0	0	1.5
India	67	-0.8	5	6	3.2
Indonesia	92	-8.6	55	88	10.3
Korea	19	-4.0	25	25	2.3
Malaysia	44	3.0	17	20	0.4
Philippines	59	-0.6	48	66	-0.7
Singapore	91	-2.8	...	76	3.4
Thailand	22	0.9	36	43	3.0
Argentina	53	0.6	97	43	3.9
Brazil	56	2.6	46	96	3.7
Chile	14	-0.4	...	...	-0.6
Colombia	44	1.8	54	83	5.0
Mexico	34	-0.8	28	72	-2.8
Peru	45	0.4	85	98	-0.7
Czech Republic	17	1.2	...	63	0.7
Hungary	49	-7.2	30	64	-6.0
Poland	40	1.5	35	66	-2.6
Russia	50	-25.0	88	89	0.4 ⁷
Turkey	36	-2.8	58	99	3.0
Israel	95	-1.3	27	78	-1.7
Saudi Arabia	94	-4.9	...	...	2.0 ⁸
South Africa	44	-3.9	15	25	-1.1

¹ Gross, as a percentage of GDP. ² Defined as the difference between the budget balance needed to stabilise the debt and the actual budget balance, average 2000-02; a positive sign implies that the actual budget balance is too low (the deficit is too high) to stabilise the debt-to-GDP ratio. ³ As a percentage of total public debt. ⁴ Defined as the percentage of debt denominated in or linked to foreign currencies. ⁵ Defined as the percentage of floating rate debt or with maturity less than one year. ⁶ Average annual change in the debt-to-GDP ratio during the period 1995-2001, in percentage points. ⁷ Average over the period 1997-2001. ⁸ Average over the period 1996-2001.

Sources: National data; BIS estimates.

Outlook for debt sustainability in emerging economies

One important issue for monetary policymakers is whether they have enough reliable data to assess public debt sustainability. To this end, Table 2 and Graph 3 show some rough indicators: the current level of debt, its recent dynamics, the debt sustainability criterion, and some indicators of debt fragility in the case of interest rates and currency risks.

These indicators clearly show that **highly indebted countries** are in different positions with respect to debt sustainability. For instance, Argentina, Brazil and Turkey show large government liabilities in 2002 as well as a growing trend in the public debt. Some of them have already experienced problems of debt solvency and prospects for other heavily indebted countries could become more acute should adverse shocks occur. Nevertheless, there are other countries where public debt is clearly too high but where the debt sustainability criterion is relatively favourable, suggesting that sustainability problems could moderate in the near future if the current fiscal stance is maintained. One example of this

second group is Indonesia, where public debt increased sharply from a pre-crisis level of around 23% of GDP to almost 100% of GDP. Finally, some countries with a large public debt have limited currency and interest rate exposure (eg India).

Among *low-indebted countries*, the picture is also mixed. Some countries fail to meet the sustainability criterion, suggesting that the current debt-to-GDP ratio is low but rising, and that fiscal worries could rapidly increase in case of adverse events. In particular, public debt in China is moderate but would grow in the future, should hidden liabilities in the banking and corporate sectors be recognised. In contrast, the situation of Korea and Mexico looks relatively favourable: the debt-to-GDP ratio is rather low and decreasing, while the debt sustainability criterion suggests that the authorities have significant room for manoeuvre in case of unexpected shocks.

4. Fiscal rules

Fiscal rules can be defined as specific, binding constraints on the government's range of policy options in areas such as the budget balance, debt, spending or taxation. Policy rules or guidelines that are not legislated are not considered to be fiscal rules in a narrow sense because they do not impose binding constraints on present or future governments, although they may still influence their decisions; see Kennedy et al (2001). This section addresses four issues that have been important from central banks' perspective: the rationale for fiscal rules, their design, experiences with their use and conditions for their effectiveness.

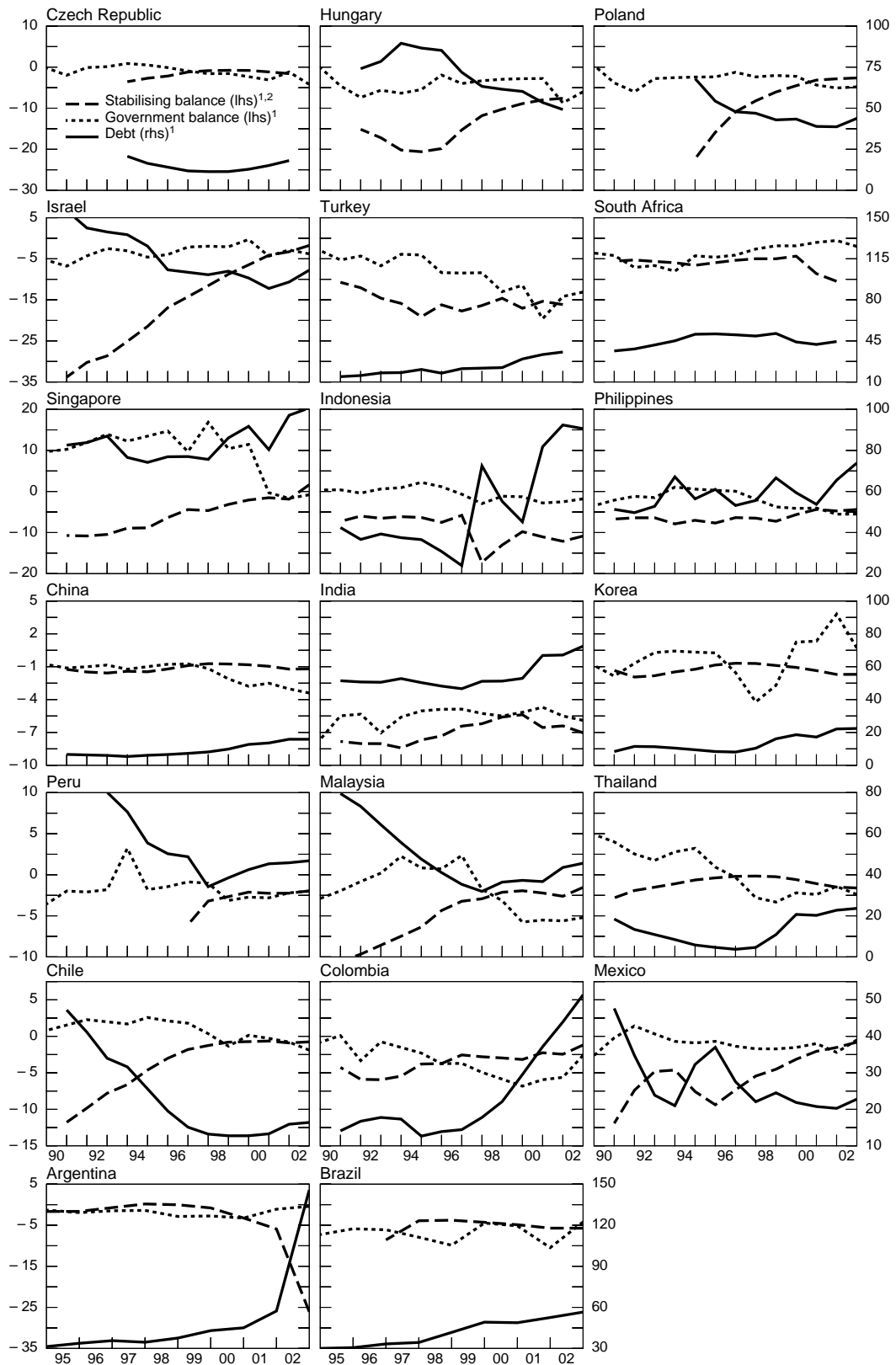
Rationale

Underlying most fiscal rules is a sense that present or future governments may not be willing or able to implement disciplined fiscal policy measures without external pressure. Indeed, the need to establish credibility and, hence, adopt fiscal rules is greatest when initial conditions are problematic. While in theory a discretionary policy can achieve the same outcomes as fiscal rules, and should in fact be superior because it allows greater flexibility, in practice electoral pressure may lead politicians to adopt a short time horizon. This could result in less disciplined and even unsustainable policies over time. Following these arguments, the primary usefulness of a well designed, appropriately implemented set of permanent fiscal rules is that they establish a depoliticised framework for fiscal policy, much like the depoliticisation of monetary policy under successful inflation targeting; see Kopits (2001). With information on macroeconomic prospects being widely available, the budget balance and the level of expenditure would be determined by rules, and only the relative spending priorities and the tax structure would become subject to legislative and public debate. This makes fiscal rules potentially highly attractive to the emerging economies, particularly those wishing to establish a reputation of fiscal rectitude, or those wishing to design a more efficient structure of intergovernmental fiscal relations.

Despite the obvious attractions, the use of fiscal rules has also raised several concerns. The main one is that rules may be overly restrictive and limit a government's ability to engage in countercyclical fiscal policy when required. The difficulties some euro area countries are currently experiencing in meeting the 3% budget deficit norm of the Stability and Growth Pact are an illustration. To be functional, legislation must therefore be written in such a way that it provides some flexibility. But at the same time, the rule should not be so flexible as to become non-binding. In order to be credible, fiscal rules should be viewed as permanent. And in order to be transparent, the rules should be defined in terms of fiscal indicators that are easy to monitor and cannot be manipulated easily. These desirable characteristics of fiscal rules are not easy to fulfil because they involve complex trade-offs. Furthermore, when a government has a margin for "creative accounting", the imposition of fiscal rules may entail an additional trade-off between window-dressing (which is costly in the long run but can help win votes in the short run) and real fiscal adjustment (which is costly in the short run but creates long-term benefits); see Milesi-Feretti (2000).

Graph 3

Public debt and government balance in emerging economies, 1990-2002



¹ As a percentage of GDP. ² Defined as the government budget balance needed to stabilise the (gross) debt-to-GDP ratio.

Sources: IMF, Government Finance Statistics; national data; BIS estimates.

Design

The majority of emerging economies (including China, Colombia, the Czech Republic, Hungary, India, Korea, Mexico, the Philippines, South Africa, Thailand and Turkey) use no formal fiscal rules to bind the national government. However, the budget-making process implicitly involves some controls on the spending and borrowing decisions of the executive branch of the government. For instance, the size of the deficit, levels of expenditure and borrowings must be approved annually by the legislative branch in most countries. In addition, they may be part of an agreed medium-term fiscal plan (Indonesia, Thailand, central European countries). In several Asian economies, this approach reflects a history of fiscal discipline and, perhaps, caution with regard to fiscal policy innovations in general.

Formal fiscal rules that are embedded in legislation have been used in only a few emerging economies. The Basic Law of the **Hong Kong** SAR requires the government to “follow the principle of keeping expenditure within the limits of revenues in drawing up its budget, and strive to achieve a fiscal balance, avoid deficits and keep the budget commensurate with the growth rate of its GDP”.

Argentina and **Peru** both adopted fiscal responsibility laws in 1999. The laws set ceilings for the deficit of the central government and the growth of expenditure, and established fiscal stabilisation funds financed through tax revenues. The intention was to ensure savings in periods of boom that could be used in times of recession. The Argentine law also prohibited the creation of off-budget items, while the Peruvian law set a limit on the increase in public debt.

Brazil's Fiscal Responsibility Law, enacted in 2000, applies to all levels of government. It prohibits financial support operations among different levels of government, sets limits on personnel expenditures, and requires that limits on the indebtedness of each level of government be set by the senate. Annual fiscal targets have to be set within a three-year framework. The law also establishes rules to control public spending in election years.

The central government in **Poland** is bound by two rules: the nominal deficit in the approved annual budget cannot be exceeded without going back to parliament, and the national public debt has a constitutional limit of 60% of GDP. Special prudential measures are triggered when public debt exceeds 50% of GDP. Specifically, the deficits of subnational governments must be lowered, the council of ministers must submit a fiscal consolidation plan to parliament, and issuing of new state guarantees is limited; see OECD (2002c).

Several emerging market economies follow more specialised rules. **Singapore** requires presidential approval if the current government wishes to use reserves accumulated by a previous government, or if the current government needs to spend more than 50% of the net investment income earned during a fiscal year. In **Russia**, the budget law sets a limit on the deficit: the deficit should be less than the sum of fixed investment and interest payments. Many emerging economies have also passed or are considering budget or other legislation requiring the government to reduce the size of the fiscal deficit over the medium term (Indonesia, Korea, Thailand, EU accession countries). **Chile** is a particularly interesting case in that, from 2001, the central government has to generate a 1% surplus on its structural fiscal balance.

Experiences

Empirical research on the effectiveness of fiscal rules in industrial countries is inconclusive, as most rules at the national level have not yet passed the test of time. In a survey of empirical research on OECD countries, Kennedy et al (2001) argue that some of the euro area countries might not have achieved fiscal consolidation without the strict rules embedded in the Maastricht Treaty. There is also evidence that expenditure ceilings embodied in the Budget Enforcement Act have played a significant role in reducing spending of the US federal government; see IMF (2001b). However, in several OECD countries major improvements in structural fiscal balances were made during the 1990s without fiscal rules. Moreover, the adoption of fiscal rules in New Zealand did not prevent recent slippage relative to long-term fiscal goals.

The empirical evidence is even more limited for the emerging market economies given the recent introduction of such rules. Fatás and Mihov (2002) construct a measure of discretionary fiscal policy for a number of emerging economies. Based on this measure they provide evidence that discretionary fiscal policies amplify business cycle fluctuations and reduce the rate of growth, while rules-based fiscal policies help to lower output volatility and positively affect growth. For the countries studied in this paper, the limited evidence available to date is mixed.

Hong Kong established an exemplary record of budgetary performance during 1984-97, when it operated under informal fiscal rules very similar to those stipulated in the Basic Law. However, since 1998 the deficit avoidance rule has been breached in every year. Persistent high fiscal deficits (projected to reach 6% of GDP in fiscal year 2003) have even raised questions about the robustness of Hong Kong's linked exchange rate system, despite high fiscal reserves and the absence of public debt.

In **Argentina**, the deficit ceilings were exceeded in 1999 and 2000; in 2001 they were relaxed and the date at which a balanced budget should be achieved was shifted to 2005 (Table 3). However, the rule was effectively abandoned in 2002, when the economy plunged into deep crisis. Limits on the fiscal deficit set in **Peru's** fiscal responsibility law have also been breached in every year since the law was adopted (formally, congress suspended the limits for 2001 and 2002).¹⁷

Brazil's fiscal responsibility law seems to have been more successful so far. The primary surplus increased from 3½% of GDP in 2000 to 3.9% in 2002, even as the economic situation worsened (Table 4). Most of this improvement was achieved by reducing the deficit of the federal government and central bank, whereas the deficit of states and municipalities increased by almost 2% of GDP in 2002. At the national level, the personnel expenditures were kept well below the legislated limit of 38% of current revenue in 2001. Moreover, the vast majority of municipalities complied with an equivalent limit (60% of current revenue) at their level. However, the primary surpluses have been achieved mainly on the basis of revenue increases rather than expenditure cuts; see Samuels (2002). In addition, most of these increases were temporary (such as the tax on financial transactions), requiring difficult renegotiation in congress before each extension of the tax.

Table 3
Argentina: compliance with the Fiscal Responsibility Law

	Deficit limits ¹		Observed
	1999 Law	2001 Modification	
1999	-1.9		-3.0
2000	-1.1		-3.4
2001	-0.5	-2.5	-5.5
2002	0	-2.0	-2.2
2003	0	-1.3	
2004	0	-0.9	
2005	0	0	

¹ As a percentage of GDP. Limits refer to the central government. Values are estimated as the law established nominal ceilings for the deficit, not for the deficit/GDP ratio.

Source: Braun and Tommasi (2002), p 7.

In **Poland**, the nominal deficit rule has led to overly conservative revenue projections, the inclusion of spending reserves in the budget, and occasional payment arrears. It has also provided incentives to circumvent the limits through creative accounting, and to push expenditure off the central budget into extra-budgetary funds and various special purpose agencies.¹⁸ On the other hand, the constitutional limit on public sector debt has been observed at all times.

¹⁷ The limits were set at 2% of GDP in 2000, 1½% in 2001, and 1% in 2002. In the event of actual or projected recession, the law allowed the deficit limit to be increased by up to 2% of GDP.

¹⁸ The state budget represents only 40% of general government expenditure, while some 3,000 national and local government extra-budgetary funds represent a further 40%. The remainder is accounted for by the budgets of subnational governments.

Poland's experience has been echoed in some countries that do not use fiscal rules in the narrow sense, but rely instead on deficit, spending and borrowing limits in annual budgets. In **Korea**, governments in the past preferred to establish off-budget funds rather than issue bonds, as the latter would have been subject to the scrutiny of the national assembly. However, this was possible only because the general account exhibited surpluses sufficient to cover chronic deficits of special accounts and extra-budgetary funds. In **Hungary**, frustrations with the rigidity of budget procedures and legitimate concerns about the state of public infrastructure have led the authorities to finance an extensive road development programme through a state-owned development bank specially reactivated for this purpose.¹⁹

Table 4
Brazil: public sector developments
 Percent of GDP

	1999	2000	2001	2002
Overall balance	-9.2	-4.6	-3.6	-4.6
Federal government and central bank	-6.9	-3.2	-2.1	-0.8
States and municipalities	-2.4	-2.1	-2.0	-3.9
State enterprises	0.1	0.8	0.6	0.0
Primary balance	3.2	3.5	3.6	3.9
Federal government and central bank	2.4	1.9	1.8	2.4
States and municipalities	0.2	0.6	0.9	0.8
State enterprises	0.7	1.1	0.9	0.7
Interest payments due	12.4	8.1	7.2	8.5
Federal government and central bank	9.3	5.1	3.9	3.1
States and municipalities	2.6	2.7	2.9	4.6
State enterprises	0.6	0.3	0.4	0.7

Sources: Central Bank of Brazil; Institute of International Finance.

Another country with mixed experience has been **South Africa**. On the positive side, a constitutional provision allowing the parliament to adjust the budget proposed by the government proved effective because the parliamentary budget committee had adequate knowledge of fiscal issues. The government's medium-term horizon for fiscal policy, which gave fiscal policy some discipline without making it rules-based, also proved useful because markets could easily detect any deviation from medium-term targets. And the central government's power to take over a province that is not managing its finances properly has been effective in reducing provincial overspending, given that a takeover would have been extremely embarrassing for provincial leadership. However, the provision on criminal sanctions for mismanagement of public institutions, although a priori desirable, had some unintended consequences. Many qualified individuals have become reluctant to accept positions as board members in state-owned enterprises, and government departments have become extremely cautious with spending, which has resulted in significant underspending.

Conditions for effectiveness of fiscal rules

These limited experiences do not clearly suggest conditions under which fiscal rules are likely to fail or succeed. In **Hong Kong**, one possible weakness has been the lack of sanctions for breaching the

¹⁹ The bank issued its own bonds and provided guarantees to commercial banks lending to contractors, while the scope of its activities was estimated at 8-9% of GDP; see OECD (2002a). Beginning in 2003, the bank is no longer involved in the financing of the road development programme.

rules. In **Brazil**, for instance, penalties and sanctions for non-compliance were applied not only at institutional level but also to public officials under the so-called Fiscal Crimes Law, thus significantly strengthening the enforcement of the Fiscal Responsibility Law. But in **South Africa**, as noted above, sanctions for mismanagement of public institutions have led to avoidance of decisions on spending.

In **Argentina** and **Peru**, the rules probably failed because of inherited fiscal fragilities, weak budgetary institutions, and ill-fated timing of the introduction of the rules (during the recession in 1999). More importantly, the experience of Argentina and Peru indicates that fiscal rules need to work over the entire business cycle in order to be effective. If there is a negative shock or a downturn in economic activity, deficit reduction targets can become excessively tight and attempts to satisfy them may exacerbate the downturn. Conversely, if there is a positive shock (eg an increase in the price of commodities that are exported) or a boom in economic activity, fiscal rules that set a limit on the size of the deficit would become relatively easy to comply with. The underlying fiscal position - eg large outstanding public debt - would thus not improve and the procyclical fiscal stance would accentuate the boom. Gavin et al (1996) argue that excessive spending during the booms and, hence, the incapacity to maintain surpluses in good times often sow the seeds of a fiscal crisis, although the crisis becomes evident only when the boom subsides.²⁰ Partly reflecting this concern, the Peruvian authorities revised the fiscal responsibility law in mid-2002, allowing for a transitional period to reach the medium-term deficit target following a recession, but requiring corrective measures when the fiscal programme goes off track in periods of positive growth. An alternative rule for countries with low debt levels could be to limit public debt rather than the budget deficit, so as to leave more room for countercyclical fiscal policy.

In view of the procyclical bias of fiscal policies in many Latin American countries, **Chile's** structural surplus rule deserves particular attention. The structural balance is estimated by removing the effects of variations in copper prices (by using a panel of experts to estimate the long-term price trend) and the economic cycle on revenues (by using revenue elasticity estimates and a measure of potential GDP). This rule is expected to force the government to run high surpluses during domestic booms and periods of high copper prices. Conversely, the rule allows moderate deficits during downturns and periods of low copper prices. The estimated budget deficits for 2001 and 2002 have in fact been consistent with the structural surplus rule.²¹

A further consideration is whether fiscal rules can be used to discipline fiscal policy at different levels of government. The failure of the fiscal responsibility law in **Argentina** has been attributed to the fact that the provincial governments were exempt from the law, ie they were only *invited* to adopt similar fiscal rules. While some provinces followed the rules, others did not. In contrast, **Brazil** introduced its Fiscal Responsibility Law as part of a comprehensive fiscal stabilisation plan, under which the government committed itself to generating a consolidated primary budget surplus for three years. The fiscal positions of subnational governments were made consistent with this overall goal. The federal and most state governments agreed to a debt restructuring plan, while extensive privatisation and closure of commercial banks owned by the states helped create an environment more conducive to fiscal discipline.

A common reason for the failure of fiscal rules has been the lack of commitment to implement the rules. As pointed out in the political economy literature, in contrast to the private market, where shareholders can dismiss managers at any time and thus protect a firm's reputational capital, in politics an election victory provides a multi-year franchise; see Schuknecht (2001). Since the electorate can do very little until the next election even if it feels cheated, some governments may choose to break the rules if they find it would not hurt them politically. Even governments that have established a reputation for tight fiscal policies may take the risk of losing that reputation if they think that short-term fiscal expansion is essential to win the next election.

The potential failure of reputation as a disciplining device is an important reason why fiscal rules should be hard to amend or circumvent, ie designed so as to impose very high exit costs. **Poland's** positive experience with the constitutional limit on public debt illustrates this point. Another example is

²⁰ Financial market failures may contribute to such procyclicality: there is evidence that spreads are procyclical, which means that deficits are financed relatively easily in periods of boom, while exacerbating negative debt dynamics in periods of recession; see Perry (2002).

²¹ See the paper by Marshall in this volume; Ministry of Finance, Chile (2002); and Fiess (2002).

the Maastricht criteria for entry into European monetary union (EMU). These criteria are not part of EU membership requirements and new EU members are not expected to meet them until around 2007 at the earliest. Nevertheless, fiscal policy in accession countries is being increasingly oriented towards satisfying a 3% norm for the deficit of the general government and a limit on total public debt of 60% of GDP. The reason is that fiscal deficits are currently very high in several accession countries (6-9% of GDP). Entering the exchange rate mechanism of the European Monetary System (so-called ERM II) with such a high deficit, with a view to reducing it below 3% in two years, could put pressure on central banks to keep short-term interest rates higher than in the euro area.²²

As illustrated by the *Hungarian* experience in January 2003, this differential would attract short-term capital inflows and could well increase exchange rate volatility.²³ A particular concern would arise if the ambitious deficit reduction strategies were to go off track. Since non-residents are expected to become major buyers of newly issued public debt, given the promise of medium-term sustainability, such an event could lead to a sudden reversal of portfolio capital flows, causing the currency to depreciate sharply. The Hungarian experience in June 2003 partly illustrates this course of events. The accession countries have limited capacity to respond to large movements in capital flows and may therefore find it necessary to satisfy the Maastricht criteria from the moment their currencies enter ERM II. This will require substantial fiscal adjustment in the next few years. Mobilising support for such adjustment will be difficult, however, given the large public expenditure needs and the fact that the deficits can be financed relatively easily at the moment.

5. Intergovernmental fiscal relations

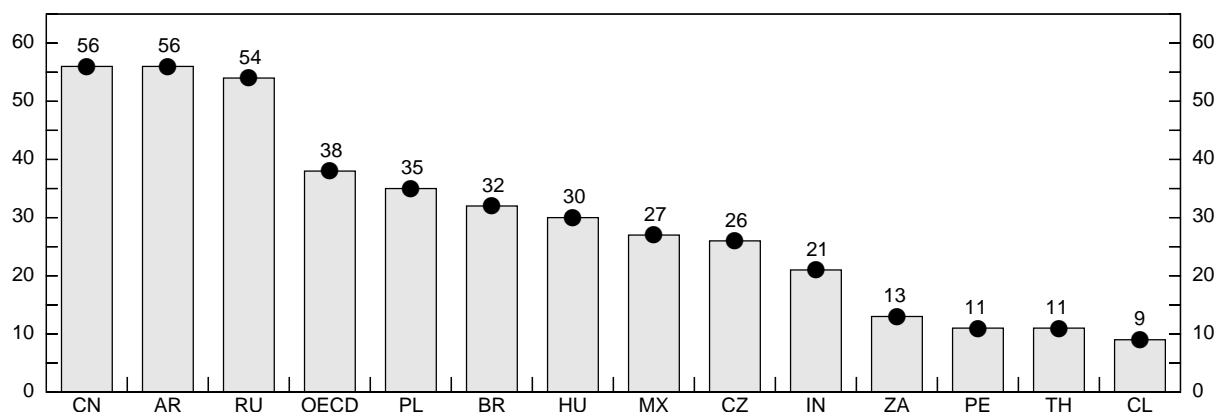
The emerging market economies on average devolve a smaller proportion of public expenditure to subnational governments than do industrial countries (Graph 4). Nevertheless, as most major taxes are typically assigned to the central government, sizeable vertical imbalances (pre-transfer fiscal deficits) frequently emerge at the subnational level. There are also horizontal imbalances, since the revenue-raising capacity of subnational governments varies and different regions may face different cost and demand pressures as they attempt to meet their assigned expenditure responsibilities. As in industrial countries, the gap between revenue and spending in local jurisdictions in the emerging economies is met through intergovernmental transfers (grants and revenue sharing), borrowing by governments in deficit, or a combination of the two.

Inappropriate design of intergovernmental fiscal relations has often led to macroeconomic imbalances and created major problems for monetary policy. Argentina, Colombia, Mexico and Russia have bailed out subnational governments when their deficits or arrears became unsustainable: see Ter-Minassian (1997). Brazil's federal government set up debt restructuring operations three times between 1989 and 1997 to support highly indebted state governments. In 1989, the federal government assumed BRL 11 billion of states' external debt. In 1993, BRL 39 billion of states' debt with financial intermediaries owned by the federal government was refinanced. In 1997, a programme was launched to restructure states' bond debt; by 1999, BRL 87 billion had been refinanced; see OECD (2001a). The experiences of Argentina (Box 2) and China (Box 3) further illustrate the need to restrain and monitor closely subnational governments' borrowing because of widespread expectations of central government bailouts.

²² Participation in ERM II without severe tension for at least two years is part of the exchange rate stability criterion for EMU membership. The remaining criteria pertain to inflation and interest rates.

²³ Short-term capital inflows of approximately EUR 4-5 billion (6-7% of GDP) entered Hungary within a few hours on 15 and 16 January 2003. The inflows were fuelled by speculation that the 15% limit for appreciation of the forint above its central parity against the euro would be lifted. To quell the attack, the central bank cut policy rates by 200 basis points within two days, introduced temporary capital controls and intervened heavily in the foreign exchange market.

Graph 4

Share of subnational in general government expenditure¹

AR = Argentina; BR = Brazil; CL = Chile; CN = China; CZ = Czech Republic; HU = Hungary; IN = India; MX = Mexico; PE = Peru; PL = Poland; RU = Russia; TH = Thailand; ZA = South Africa.

¹ Average for 2000-01, in percentages.

Sources: National data.

Box 2**Monetary implications of provincial government deficits in Argentina**

Until 2001, central government in Argentina was responsible for 44% of total expenditure but collected 82% of total revenue. Provincial governments were responsible for 46% of total expenditure and municipalities for 10%, but together they collected only 18% of total revenue. Debt issuance was more or less proportionate to revenue shares at different levels of government. Since mid-1998, adverse debt dynamics and deflation had led to rising nominal and real interest rates. This raised the cost of refinancing central government debt and led to rising unemployment. Many local governments at first tried to protect public sector employment by borrowing from the commercial banks they owned. This was especially the case in the Province of Buenos Aires, which borrowed heavily from a major commercial bank it owned. As private demand for credit declined with worsening recession, banks were initially willing to lend to provincial governments or invest in their bonds. However, they did so without appropriate risk weighting, keeping government loans and bonds on books at face value rather than market value. The banks thus accumulated large contingent liabilities and had to be recapitalised.

When the state-owned banks could no longer lend to provincial governments, provinces started issuing quasi-money, which was in essence equivalent to bonds and was used to pay provincial government workers. In the Province of Buenos Aires, even the central government accepted local quasi-money, *patacones*, for payment of national taxes. The central bank could in principle have replaced quasi-monies in circulation with its own bills. However, this would have created a severe balance sheet problem since the central bank would have ended up holding quasi-monies as an asset.

Box 3

China's experience with intergovernmental fiscal relations

During the 1980s, China's central government controlled all tax legislative powers, but tax assignment and revenue sharing arrangements were to a large extent negotiated with the provinces. Revenue from certain taxes was designated as "central fixed revenue" and a portion of revenue from other taxes as "local fixed revenue", with the remainder going into a pool of shared revenue. Most shared revenue was split according to formulae stipulated in fiscal contracts between the central government and provinces. The contracts typically fixed revenue transfers with respect to a base year, with annual increments agreed upon *ex ante*. The central government devolved considerable expenditure responsibilities as well as tax administration to local governments.

Given these arrangements, local authorities had an incentive to concentrate on the local tax bases and, to the extent possible, shift the tax bases from those that had to be shared with the central government to those over which they had greater control. This involved promoting the growth of locally owned enterprises and granting generous tax reductions and exemptions in respect of indirect taxes (which had to be shared with the central government). The resources thus "saved" could be retained for local projects. These policies exerted a strong expansionary bias. When the local economy expanded, local tax revenue was boosted. As only a relatively small portion of additional revenue had to be shared with the central government, local spending tended to increase in periods of economic expansion, thus increasing the risk of overheating. The threat of macroeconomic instability could not restrain local spending plans because local governments did not have macroeconomic management responsibilities. Also, local governments that accumulated surpluses could worsen their bargaining position with the central government in negotiations for subsequent contracts.

Intergovernmental fiscal relations also served to weaken the implementation of monetary policy. The influence of The People's Bank of China (PBC) as the central bank was circumscribed at the local levels by the dependency on local governments for housing, education and other benefits for PBC branch workers. The large number of PBC branches, which paralleled the administrative structure of the government, also tended to leave them vulnerable to local political intervention and to weaken headquarters' control. For instance, pressures from local governments to permit local banks to extend credit beyond the planned ceilings had to be accommodated by base money creation, which triggered high inflation in the early 1990s.

In response to these developments, relations between the central and local governments were thoroughly reformed in 1994. On the fiscal side, the central government began introducing a more transparent delineation of revenue sources for the central and local governments and established a national tax administration to collect all central and shared taxes. On the central banking side, the PBC shifted to a system of regional rather than provincial branches in an effort to dilute the influence of provincial authorities. On both fronts, reforms continue to evolve.

Sources: Mihaljek (1998); Tseng et al (1994).

These negative experiences have led governments and central banks in many countries to devise special rules on fiscal positions and borrowing of subnational governments (Table 5). Larger countries in particular limit the maximum size of deficits of subnational governments. And with the exception of India, none of the emerging economies in the sample allow local governments to borrow from central banks. Borrowing of subnational governments from commercial banks is subject to either quantitative limits or prudential regulations. Furthermore, the use of borrowed funds is typically restricted to capital expenditures (the so-called golden rule). In practice, however, it is often difficult to prevent governments from evading the golden rule by labelling certain current expenditures as investments. Moreover, there is evidence that governments often borrow to finance investments that do not have adequate rates of return. In Hungary, for instance, local governments have been freed from borrowing caps for housing development purposes. In an environment of increased bank competition, this has led commercial banks to become very active in the municipal credit market.

Table 5

Specification of rules on fiscal positions of subnational governments

Rule on maximum size of deficit of subnational governments	
Existence of a rule	Brazil, China, ¹ Czech Republic, ² India, Indonesia, Russia, Turkey
No explicit limit	Chile, Hungary, Korea, Peru, Poland, South Africa, Thailand
Borrowing from central bank	
Not allowed	Brazil, Chile, China, Czech Republic, Hungary, Indonesia, Korea, Peru, Poland, Russia, South Africa, Thailand, Turkey
Allowed	India ³
Limit on borrowing from commercial banks	
Existence of a rule	Brazil, ⁴ China, Colombia, ³ Czech Republic, India, Indonesia, Israel, ⁵ Mexico, ⁴ Peru, Philippines, Turkey
No explicit limit	Chile, Hungary, Korea, Poland, Russia, South Africa, Thailand
Rules on use of borrowed funds	
Only for capital expenditure	Brazil, China, Indonesia, Malaysia, Philippines, Poland, South Africa, ⁶ Thailand
No explicit rules	Hungary, India, Korea, Peru, Russia, Turkey
Limit on the annual issuance of debt	
Existence of a rule	Brazil, ⁷ China, ⁸ Colombia, ⁷ Czech Republic, ⁹ Hungary, ⁷ India, ⁹ Indonesia, ⁷ Korea, ⁹ Malaysia, ⁹ Philippines, ⁹ Poland, ⁹ Russia, Thailand ⁹
No explicit limit	Chile, South Africa
Limit on outstanding stock of debt	
Existence of a rule	Brazil, India, Peru, Philippines, Poland, Russia, Thailand, Turkey
No explicit limit	Czech Republic, Hungary, Korea, South Africa

¹ The rule refers to no deficit on current fiscal account. ² Local government guarantees or collateral must cover the planned deficit. ³ Limited facility in order to meet temporary cash flow mismatch. ⁴ Based on limits on net worth of banks. ⁵ Subject to approval by the Ministry of the Interior. ⁶ Short-term debt can be used for bridging finance. ⁷ Based on payment capacity. ⁸ Only for special purposes. ⁹ Based on approval by central government.

Source: Central bank questionnaires.

Virtually all the emerging economies set limits on the annual debt issuance or outstanding stock of debt of subnational governments. The limits are usually tied to the debt servicing capacity of local governments or macroeconomic (especially monetary and balance of payments) considerations. The restrictions may take a variety of forms, including setting annual (or more frequent) limits on the overall debt of individual jurisdictions; limits on external borrowing; reviewing and authorising individual borrowing operations (including their terms and conditions); and centralising all government borrowing, with onlending to subnational governments for approved purposes only (generally investment projects). In India, for instance, federal government approval is required for borrowing by the states if they have outstanding debt to the federal government, as is currently the case for virtually all the states. Only the Czech Republic, Hungary, Korea and South Africa set no explicit limits on the outstanding stock of local government debt.

Table 6

Status of debt of subnational governments

Guaranteed by central government	
Explicit guarantee	Brazil, ¹ Colombia, Indonesia, Malaysia, Poland, ² Turkey ³
Implicit or de facto guarantee	China, Israel, Philippines ²
No guarantee	Argentina, Czech Republic, Hungary, Mexico, ⁴ Peru
Debt to central government has been written off in the past 10 years	
Yes	Brazil, Colombia, Israel, Mexico, Russia, South Africa
No	Argentina, Czech Republic, Hungary, Indonesia, Malaysia, Peru, Philippines, Poland, Thailand
Provisions to compensate central government for the assumption of subnational debt	
Provisions exist	Brazil, ⁴ Colombia, Mexico, ⁵ Turkey ⁶
No provisions	Czech Republic, Hungary, Indonesia, Israel, Malaysia, Peru, Philippines, Poland, South Africa, Thailand

¹ For external debt. ² Limited guarantees by state treasury or other government agency. ³ For limited amount of external debt. ⁴ Except for the Federal District. ⁵ Local debt guaranteed by the local shares of federal revenue must be registered. ⁶ The central government can appropriate subnational shares of revenue or transfers.

Sources: Central bank questionnaires; IMF, *Reports on the observance of standards and codes*; OECD, *Economic surveys*.

Although appealing in principle, sole reliance on market discipline for government borrowing is unlikely to work in most circumstances. This is because one of the key conditions for its effectiveness - orderly and effective insolvency procedures for local government units - is rarely realised. Indeed, most national governments in emerging economies offer either explicit or implicit guarantees for debt of subnational governments (Table 6). Brazil, Colombia, Israel, Mexico, Russia and South Africa have written off portions of local government debt in the past. In most other emerging economies, central governments have restructured subnational government debt, often by assuming much of the debt on terms that were very favourable to local governments, ie without compensating central government for the assumption of subnational debt. Such bailouts are, of course, not unknown to industrial countries: in 1975 New York City went bankrupt and received USD 1.7 billion in federal loan guarantees before re-establishing solvency. The Czech Republic and Hungary seem to be the only countries in the sample where the national government let small local government units default on their debt without coming to their rescue; see OECD (2001b, 2002a).

The importance of bank lending as a source of financing for subnational governments points to prudential regulation as an alternative way to control local government borrowing. However, there is no empirical evidence as yet on the effectiveness of this approach.

- **Colombia** passed the so-called Traffic Light Law in 1997 as a way to increase control over subnational debt by the central government; see Braun and Tommasi (2002). This law brought into effect a rating system for territorial governments based on the ratios of interest payments to operational savings and of debt to current revenues. Highly indebted local governments (red light) were prohibited from borrowing, and intermediate cases (yellow light) were required to obtain permission from the Ministry of Finance. The law was initially not fully effective, as some local governments with a red light rating presented misleading financial information to banks and so obtained new financing. This has led supervisory authorities to rule that debt of any territory with a red rating must be fully provisioned, increasing the cost of such loans for banks. The ruling was strengthened in 2000 with the Sub-national Fiscal Responsibility Law.
- In 2000, **Mexico** established a rule linking banks' capital risk weighting of loans to state governments to the international rating of the governments. The pricing of bank loans thus became a function of the underlying risk of the state government.

- In **India**, banks' investment in state government securities issued outside the regular borrowing programme (which is approved by the National Planning Commission) attracts a risk weight of 20% for the purpose of provisioning. In case of default, such investments are to be treated as non-performing assets, and a 100% risk weight is to be attached with adequate provisioning.

6. Approaches to fiscal adjustment

Most emerging economies recognise the need to reduce fiscal deficits, but as yet few have addressed the problem comprehensively. Most have engaged in piecemeal policymaking to mitigate the most pressing deficit and debt problems. A key issue that arises in this context is how the choice between expenditure reductions and tax increases affects the ability of central banks to maintain price stability. Similar issues arise in the timing and size of changes in government charges, prices charged by state-owned enterprises, subsidies and pension contributions.

Central banks generally have a strong preference for reducing the size of the fiscal deficit by cutting public spending. The bulk of budget expenditure in non-Asian emerging economies studied in this paper (up to 80% in central European countries) is mandated by legislation on social security, pensions and public administration, over which the fiscal and monetary authorities have little or no influence. Nonetheless, it is widely recognised that spending on pensions and social transfers should be limited and better targeted. Any cuts in these expenditures are bound to have a large impact on aggregate demand and, hence, inflation, facilitating the achievement of price stability. In theory, spending cuts can be strategically aimed at unpopular programmes or be spread across diverse constituencies to impose minimal hardship on voters. But in practice such cuts are difficult to implement. Social transfers are widely regarded as acquired rights. In Hong Kong, which does not have a history of the welfare state, immigration pressures have led to a large expansion in social spending in recent years. In central Europe, early retirement schemes have been a costly solution to structural unemployment resulting from the collapse of central planning and enterprise reforms.

Against this background, one approach has been to introduce expenditure ceilings in budgets. However, such ceilings are rarely effective and inevitably lead to requests for their lifting and, subsequently, domestic demand pressures. In Hungary, for example, public sector wages increased at double digit rates in real terms in 2001 and 2002 after being more or less frozen in real terms for two years, thus complicating monetary policy in an environment of slowing growth. Another approach has been to aim the cuts at areas that may have sufficient, if not enthusiastic, support to make them feasible; see IMF (1996). Examples would be unemployment insurance payments, the defence budget, and government bureaucracies, or contracting with private companies for services previously performed by the government. But as the experience of industrial countries shows, implementing such programmes is by no means simple and may create problems - and additional expenditures - of their own.

The second basic approach to fiscal adjustment - raising taxes and other government revenue - is generally less welcomed by central banks because of its direct impact on inflation. Usually it is argued that tax and regulated price increases have only temporary effects on inflation. Higher charges for public services and goods produced by state-owned enterprises also help reduce subsidies by improving cost recovery ratios, and are therefore regarded as essential for medium-term fiscal adjustment. But tax and regulated price increases that would be sufficient to cut the large fiscal deficits in many emerging economies are often politically unacceptable. Moreover, by raising input costs they may create strong disincentives for investment and the growth of private firms. Argentina's ill fortune with tax increases during the 1999-2001 recession clearly illustrates this point. Moreover, in countries such as Brazil and Hungary there has been a series of large increases in public charges in the recent past due to the need for relative prices to "catch up" in an inflationary environment. An additional argument is that the tax burden is too narrowly based in many emerging economies, resulting in very high tax rates for a relatively small number of large taxpayers. From the tax efficiency perspective, such tax rates should rather decline over the medium term, with additional revenue being generated by broadening the tax bases and improving tax administration.

In view of these difficulties, the authorities are often forced to resort to steady increases in tax rates and regulated prices, thereby producing sustained rather than one-off pressure on inflation. If there is good coordination between the fiscal and monetary authorities, such increases need not affect the

ability of central banks to maintain price stability. Many central banks have in practice managed to limit the effects of recent tax and regulated price increases on inflation. Nevertheless, experiences across countries vary.

In India, Indonesia and the Philippines, administered price increases - in particular of petroleum products and electricity tariffs - have in the past often had a strong impact on the overall price level, given the weight of such items in price indices and their linkages to other sectors.²⁴ Tax increases may also have noticeable effects.²⁵ Most central banks in Asia are not consulted explicitly by their governments on the decisions to adjust taxes and regulated prices. However, in Korea, the Philippines and Singapore, there is frequent reporting to relevant ministries and the government of central banks' assessments of the impact of such increases on the CPI. Such consultations help ensure that taxes and regulated prices are not increased by an overly large margin when they would have a significant impact on inflation.²⁶ Central banks in the region monitor actively a range of inflation measures, including measures of core inflation that exclude various one-off changes in taxes and prices. In the Philippines, the central bank uses headline inflation as its target rate, but the impact of administered price changes is considered part of its escape clauses.

Central banks in Latin America have very limited influence on the timing and size of changes in taxes and regulated prices, which are usually decided by municipalities, public enterprises and regulatory agencies. In Brazil, the central bank nonetheless has a voice in the economic policy council, which oversees overall economic policy; see Minella et al (2002). Increases in regulated prices and taxes are not excluded from the targeted (ie headline) rate of inflation in Brazil and Peru; they are excluded for analytical purposes from measures of core inflation in Chile and Peru.

In central and eastern Europe, regulated prices have been rising faster on average than prices of unregulated goods and services since the mid-1990s, thus affecting inflation relatively strongly. Indirect tax increases have on occasion also had a large inflationary impact: in 2002, the Hungarian finance ministry decided to postpone the increase in the tobacco tax - which would have sharply pushed up inflation - at the request of the central bank. In Poland, administered prices are changed at regular intervals, which lends some predictability to their impact on inflation. The Czech, Hungarian and Polish central banks include the impact of tax increases or regulated price changes in their targeted (ie headline) measures of inflation. However, they control for the impact of these increases in their analytical procedures. Monetary policy in these countries will continue to cope with increases in regulated prices, as adjustments in such prices are part of EU accession procedures.

²⁴ For example, prices of petroleum products in India were raised three times between June and September 2002, with an estimated total impact on headline CPI of 0.8 percentage points.

²⁵ The goods and services tax in Singapore was raised from 3% to 4% in January 2003. It is estimated that this increase will lead to half a percentage point increase in CPI inflation in 2003 (inflation in 2002 was -0.4%).

²⁶ In many industrial countries (eg Canada, Switzerland), central banks do not react to the level effects of increases in taxes and regulated prices on the CPI, but lean against the second-round effects (eg those coming from wage increases) of such increases.

Appendix

The fiscal risk matrix

Liabilities	Direct (obligation in any event)	Contingent (obligation if a particular event occurs)
<p>Explicit</p> <p>Government liability as recognised by a law or contract</p>	<ul style="list-style-type: none"> • Foreign and domestic sovereign borrowing (loans contracted and securities issued by central government) • Budgetary expenditures • Budgetary expenditures legally binding in the long term (civil servants' salaries and pensions) 	<ul style="list-style-type: none"> • State guarantees for non-sovereign borrowing and obligations issued to subnational governments and public and private sector entities (development banks) • Umbrella state guarantees for various types of loans (mortgage loans, student loans, agriculture loans, small business loans) • Trade and exchange rate guarantees on private investments • State guarantees on private investments • State insurance schemes (deposit insurance, income from private pension funds, crop insurance, flood insurance, war-risk insurance)
<p>Implicit</p> <p>A moral obligation of government that reflects public and interest-group pressures</p>	<ul style="list-style-type: none"> • Future public pensions (as opposed to government civil service pensions), if not required by law • Social security schemes, if not required by law • Future health care financing, if not required by law • Future recurrent costs of public investments 	<ul style="list-style-type: none"> • Defaults of subnational government or public or private entities on non-guaranteed debt and other obligations • Cleanup of liabilities of entities being privatised • Banking failure (support beyond state insurance) • Failure of a non-guaranteed pension fund, employment fund, or social security fund (protection of small investors) • Default of central bank on its obligations (foreign exchange contracts, currency defence, balance of payments stability) • Bailouts following a reversal in private capital flows • Environmental recovery, disaster relief, military financing

Source: Polackova (1999).

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Countercyclical fiscal policy and central banks

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1. Introduction

The current economic slowdown has focused attention on how far fiscal and monetary policies can support demand in a recession. Indeed, since 2001, many emerging economies have used various combinations of both policies to dampen the external demand shock. While fiscal policy has not been countercyclical in all countries, monetary policy has been relatively more flexible in responding to the growth slowdown. These developments raise several important questions: what factors explain the relative reliance on fiscal and monetary policies in economic stabilisation in recent years? How far has the conduct of monetary policy been helped or constrained by the recent behaviour of fiscal policy? The rest of the paper is organised as follows. Section 2 discusses the role of fiscal policy in the recent growth slowdown. Section 3 provides an assessment of the effectiveness of discretionary fiscal policy. Section 4 turns to the role of monetary policy and highlights the potential coordination challenges facing fiscal and monetary authorities. Section 5 focuses on two specific issues for central banks: the maturity and composition of public debt and the behaviour of long-term interest rates.

2. Fiscal policy in the current slowdown

The sharp slowdown in external demand in 2001 heightened policy challenges in emerging economies. To help revive growth, many countries turned to fiscal and monetary policies to stimulate domestic demand. There is as yet no consensus about what should be the appropriate role of fiscal policy over the business cycle (see Section 3). In the short run, the possible role that fiscal policy could play in stabilising output may occur through the operation of automatic stabilisers and/or discretionary fiscal policy, and the appropriateness and feasibility of either may vary according to the individual country circumstances. Moreover, measuring fiscal policy has always posed a difficult challenge. There has typically been a lack of agreement about the measures of fiscal balance that should be used to judge the fiscal policy stance. In the emerging economies context, the challenges of choosing an appropriate measure of fiscal balance could come from various sources, including the relatively greater importance of state and local governments and quasi-fiscal activities in the fiscal system as well as a high degree of off-budget spending.²

Table 1 shows the widest official measure of government fiscal balance for 23 emerging economies.³ Focusing on the changes in this measure of budget balance, fiscal policy was expansionary in roughly half the countries in 2001, coinciding with a sharp cyclical slowdown. Budget balances in Argentina, Hong Kong SAR,⁴ Israel, Poland, Singapore and Turkey, in particular, showed large negative swings, exceeding, in some cases, 4% of GDP in 2001. Deficits also widened, though to a lesser extent, in Brazil,⁵ Chile, India, Indonesia, Malaysia and Thailand in 2001. In other economies, although the

¹ The paper is based on information provided by the relevant central banks and has benefited immensely from their comments. Special thanks are due to Palle Andersen, John Hawkins, Dubravko Mihaljek, Ramon Moreno, Philip Turner and Bill White for extensive comments on the draft, to Marc Klau for very useful statistical assistance and to Lisa Ireland for excellent secretarial help. The views expressed are those of the authors and do not necessarily represent those of the BIS and central banks attending the meeting.

² See the paper by Mihaljek and Tissot in this volume.

³ For most economies the reported fiscal balance refers to the general government.

⁴ Hereafter referred to as Hong Kong.

⁵ Measured by the public sector budget balance.

overall budget balance improved in 2001, the contribution of fiscal policy to demand in some cases may have been masked by factors such as technical adjustments, off-budget spending and unexpected revenue buoyancy. For example, in Hungary, although the official measure of the fiscal deficit narrowed in 2001, that based on the European Union definition widened by over 1 percentage point of GDP.⁶ China and Malaysia introduced large expenditure stimulus measures in 2001 but revenue growth resulting from tax reforms more than compensated for the spending increase. In Korea, although the fiscal surplus rose in 2001, this mainly reflected the growing surplus of the social security funds; abstracting from this effect, the fiscal stimulus was, nevertheless, sizeable. While fiscal policy continued to be countercyclical in a number of countries in 2002 the dependence on fiscal stimulus seemed to be on the decline. This was particularly true of Asia, where many countries (with the exception of China) had planned either to reduce their fiscal deficits or further increase their surpluses. On the other hand, weaker recovery or fresh concerns of growth uncertainty led to expansionary fiscal policies in Chile, the Czech Republic, Hungary (based on the wider measure), Israel, Poland, Russia and South Africa.

Table 1
Overall budget balance¹

	1995	2000	2001	2002 ²
China	-1.1	-2.9	-2.7	-3.4
Hong Kong ³	-0.3	-0.6	-5.0	-4.8
India	-6.5	-9.4	-9.5	-8.7
Indonesia		-3.3	-3.7	-2.5
Korea	0.7	1.2	1.4	2.0
Malaysia	2.1	-4.5	-4.9	-4.8
Philippines	0.6	-4.1	-4.0	-4.0
Singapore ³	5.4	2.5	-1.8	1.2
Thailand	2.7	-3.6	-3.9	-2.7
Argentina	-1.9	-2.4	-6.8	-1.0
Brazil ⁴	-7.3	-4.5	-5.2	-7.2
Chile	2.7	0.1	-0.3	-3.3
Colombia	-0.4	-5.6	-5.4	-5.0
Mexico	-0.6	-1.3	-0.7	-0.7
Peru	-3.0	-2.7	-2.7	-2.5
Czech Republic	0.3	-3.1	-2.8	-3.4
Hungary	-6.7	-3.7	-3.0	-9.4
Poland	-1.7	-2.1	-4.8	-5.3
Russia	3.2	1.9	2.9	1.1
Israel	-4.4	-2.6	-4.1	-5.0
Saudi Arabia	-5.7	3.2	-3.9	-2.9
South Africa	-4.3	-1.1	-0.5	-1.6
Turkey	-4.9	-11.4	-16.2	-16.1

¹ As a percentage of GDP, general government. ² Projections. ³ Central government. ⁴ Consolidated public sector.

Sources: JP Morgan; national data.

⁶ See Table 1 in the paper by Kiss in this volume.

Cyclical adjustment of budget balance

A more useful way to assess the role of fiscal policy has been to adjust the budget balance to cyclical influences by computing what is known as the cyclically adjusted budget balance (CAB, alternatively known as the structural fiscal balance).⁷ However, as Table A1 in the annex shows, many emerging economies do not, at present, seem to adjust their budget balances for cyclical influences.⁸ Where budget balances are adjusted for cyclical effects, the adjustment is mainly applied to the revenue side, given the relatively unimportant role of unemployment benefits and social security related expenditures in total outlays. Adjustment for commodity price fluctuations is important in Chile, where changes in copper prices have a strong influence on government revenue. In Hungary, extraordinary expenditures, which have no impact on demand at the time of their recording in the budget (bank bailouts, capital transfers for covering losses of public enterprises and debt assumptions), are taken out from expenditure in arriving at the fiscal stance. Other adjustments though unrelated to economic cycles include, for example, changes in fixed investment taxes in China, certain compensation payments to companies in Singapore and non-current revenues in Mexico. In Indonesia, the entire fiscal deficit is treated as structural, even if the government makes a mid-year adjustment to the budget based on the latest macroeconomic indicators (including oil prices and the exchange rate). In India, the government does not compute a measure of CAB, but research done in the central bank indicates that the fiscal deficit is mostly structural.

One question is whether inadequate adjustment of budget balances for economic cycles could affect the central bank's estimates of the effects of fiscal policy. For instance, if fiscal deterioration is due to a temporary revenue loss resulting from a growth slowdown it may not have major implications for debt sustainability and interest rate expectations. Thus knowledge about the cyclical budget balance may provide important information for the conduct of monetary policy. Nevertheless, while useful in theory, it may be hard to compute a satisfactory measure of CAB in emerging economies. For example, estimates of potential output are generally believed to be less precise than in industrial countries, given a large influence of supply side factors and recent structural changes in many countries. Another problem may come from the imprecise knowledge about tax and expenditure elasticities. For example, in Brazil, the tax elasticity tends to be overestimated because of the interaction between high inflation and tax indexation before 1995 and a sharp increase in revenue due to tax reforms in more recent years. Cyclical budget adjustments, therefore, assume a unitary tax elasticity.

Fiscal stabilisation: automatic or discretionary?

Table 2 presents estimates of cyclical and structural deficits of countries where such estimates are available.⁹ The cyclical component of the budget reflects the operation of automatic stabilisers. These are changes in government revenues or expenditures that occur in response to fluctuations in demand and tend to offset them. Some have argued that automatic stabilisers are the primary mechanism by which fiscal policy should react to output fluctuations, as they do not require discretionary tax and expenditure changes that may be subject to time inconsistency problems¹⁰ or implementation lags. Precisely because they are not discretionary, automatic stabilisers are also less likely to affect market expectations adversely. It is also argued that automatic stabilisers are more effective in stabilising

⁷ Another measure used by some countries to assess the role of fiscal policy is the fiscal impulse, which shows how the fiscal stance may have changed with reference to a base year when the actual output was close or equal to the potential. See Heller et al (1986) and the paper by Robinson and Phang in this volume for a discussion of the concept of the fiscal impulse. Fiscal impulse measures are currently used in Hungary (yearly changes in the primary deficit), Indonesia, Korea, Malaysia, Mexico, Peru, Poland, Singapore and Thailand for assessing the fiscal stance.

⁸ Currently the IMF and the OECD publish cyclically adjusted budget balances for industrial countries following two different methodologies (see Hagemann (1999) and Suyker (1999) for details of the two methodologies).

⁹ The cyclical and structural budget balances reported in Table 2 may not, however, add to the overall budget balances in Table 1 because in many cases they apply to different levels of the government.

¹⁰ This is typically the same problem as that facing a discretionary monetary policy: there is a temptation for the government to announce one policy but follow another; see European Commission (2002). Taylor (1995) argues that the possibility that government may repudiate a part of its debt (explicitly or implicitly through inflation taxation) demonstrates the classic time inconsistency problem facing a discretionary fiscal policy.

output fluctuations because they are more predictable and, unlike discretionary measures, they do not require “political forecasting”.¹¹

Table 2
Cyclical and structural budget balance¹

	Cyclical			Structural			Output gap ²
	2000	2001	2002 ³	2000	2001	2002 ³	2001
India ⁴	-0.1	...	...	-9.3	...	...	...
Korea ⁵	0.2	0.1	...	1.0	1.3	...	8.7
Thailand ⁵	-1.0	-0.9	-0.6	-2.5	-2.9	-3.5	-5.4 ⁶
Brazil ^{5,7}	-0.0	-0.3	-0.5	1.9	1.9	1.9	-3.0
Chile ⁵	-0.8	-1.5	-1.6	0.0	0.9	0.9	-2.9
Colombia	-0.5	-0.5	-0.5	-2.9	-2.7	-3.6	0.6
Mexico ⁸	0.6	0.0	-0.2	-1.7	-0.7	-0.4	-0.6
Peru ⁸	-0.1	-0.5	-0.2	-3.1	-1.9	-2.1	-2.5
Israel ⁴	-2.3	-2.5	-2.3	...	...	...	3.6
Czech Republic ^{4,7}	-0.8	-0.3	-0.5	-1.8	-2.3	-5.5	-2.0
Poland ⁴	0.3	-1.2	-0.9	-2.5	-3.3	-4.5	-2.2

¹ As a percentage of GDP. ² Defined as the deviation from potential output, in percent. ³ Estimates. ⁴ General government. ⁵ Central government. ⁶ In real terms. ⁷ Primary balance. ⁸ Public sector.

Source: Central banks.

Automatic stabilisers generally smooth a large component of the demand shock in industrial countries. Estimates suggest that changes in the cyclical budget balance roughly offset one third of the output gap in the United States (Auerbach (2002)). In Europe, the strength of automatic stabilisers, as measured by the variance of output gap cushioned by changes in cyclical deficit, varies between one tenth and one quarter depending on the degree of openness of countries and the structure of their public finances (European Commission (2002)). While similar estimates are not available for emerging economies, recent trends in the cyclical budget balances reported in Table 2 suggest that automatic stabilisers may not be strong in many countries. For example, in 2001 cyclical deficits offset only a small component of the output gap in most countries (excepting Chile and Poland).

A number of factors may account for the weak automatic stabilisers in emerging economies (see Box 1 on effectiveness of automatic stabilisers). For example, automatic stabilisers may be constrained by the combination of low tax elasticity and a relatively low share of taxes in GDP that tends to reduce the responsiveness of revenues to demand shocks (Table 3). The role of expenditure stabilisers may be small because of the general absence of formal unemployment and social security compensation schemes in a number of emerging economies. At the same time, improving automatic stabilisers poses an important challenge: it implies introducing additional welfare and unemployment programmes, which countries may be unable to afford without raising their fiscal deficits. Many participants in the meeting noted that while changing the composition of expenditure towards demand sensitive components can improve fiscal response to cyclical fluctuations, the degree of flexibility in actual practice could be very limited. For example, in India, a high share of committed spending (interest payments and defence) in total expenditure has reduced the degree of fiscal manoeuvre and restricted fiscal policy response during a growth slowdown.

¹¹ See Taylor (2000b).

Box 1

What makes automatic stabilisers work?

Automatic or built-in fiscal stabilisers refer to any element in the budget that acts to offset demand fluctuations by affecting government revenues and expenditures (see Auerbach and Feenberg (2000) and Cohen and Follette (2000) for a recent discussion). These include all output-sensitive federal and state taxes as well as expenditures such as unemployment compensation benefits and other social security benefits that vary automatically with business cycles and without requiring prior legislative authorisation. The effectiveness of automatic fiscal stabilisers, however, depends on a number of factors. A progressive tax system with a high tax elasticity and a high share of taxes in GDP raises the overall response of taxes to economic activity and provides a strong stabilising force to the economy. The extent to which government spending varies with output also affects the effectiveness of automatic stabilisers. Unemployment benefits are generally sensitive to business fluctuations. But certain expenditure components may vary procyclically - wages, in particular, if indexed to inflation - and dampen automatic stabilisers. Nevertheless, the built-in elasticity of the tax system has been generally found to be the most significant element of automatic stabilisers. For example, in the United States, tax stabilisers reduce about 8% of the initial shocks to GDP compared to only 2% by unemployment benefits (Auerbach and Feenberg (2000)).

Automatic stabilisers are more effective if they reduce uncertainty about future income (insurance channel) and create a wealth effect when individuals believe that changes in tax revenues would not alter the government's intertemporal budget constraint (wealth channel). Automatic stabilisers have strong effects if households face significant borrowing or liquidity constraints (liquidity channel). Empirical evidence confirms that a high proportion of liquidity-constrained households and a low degree of income inequality that allow tax changes to be more dispersed across different income brackets help to improve the impact of automatic stabilisers.

At the same time, automatic stabilisers have certain inherent disadvantages or may be ineffective in certain circumstances. For instance, they are relatively ineffective when the source of the shock to the economy is from the supply rather than demand side. Because of their backward-looking nature automatic stabilisers are less useful in preventing a demand shock to the economy.

More importantly, countries facing borrowing constraints may be unable to raise their deficits during a growth slowdown, thus making automatic stabilisers ineffective. This has been an important factor particularly in Latin America where governments faced credit constraints (Gavin and Perotti (1997)). One implication is that when governments are highly reliant on external capital markets they have little freedom with regard to fiscal policy: their ability to run countercyclical fiscal policy crucially depends on the degree of fiscal credibility. Countries with a low degree of fiscal credibility are likely to face credit constraints at a much lower threshold debt/GDP ratio than those with a higher degree of credibility. As a result, while an adverse demand or commodity price shock reduces revenues, governments may be forced to cut spending to restore their external creditworthiness. A consensus view in the meeting was that removing borrowing constraints posed long-term fiscal challenges, including strengthening privatisation, introducing long-term tax reforms, reducing contingent fiscal burdens and committing to a medium-term fiscal plan that enhances market confidence about the fiscal regime.

This also raises a related question: do fiscal rules have implications for automatic stabilisers? Given the limited experience, empirical evidence is still inconclusive about the working of fiscal rules and whether they affect automatic fiscal flexibility. Some argue that rules by definition reduce the automatic response to cyclical fluctuations and in this sense they are sub-optimal.¹² In particular, rules that set overall ceilings on deficits or debts may not leave sufficient room for budget adjustments in the event of a large negative demand shock (Bayoumi and Eichengreen (1995)). On the other hand, others argue that when rules are accompanied by strong commitments and increased fiscal transparency, they improve fiscal performance and may even leave scope for occasional deviation from them without seriously affecting credibility (IMF (2001)).

¹² From a theoretical standpoint, deficit rules (balanced budget laws) are sub-optimal since they prevent budget adjustments needed for intertemporal tax and consumption smoothing (Alesina and Perrotti (1999)). Nevertheless, many countries have introduced fiscal rules with a view to removing political bias from fiscal policy and have included contingent provisions in the law to allow for exigencies. The limited experience in the context of emerging economies suggests that fiscal rules have been breached by many countries, and one of the contributory factors has been their introduction during an economic downturn; see the paper by Mihajek and Tissot in this volume.

Table 3
Structural fiscal ratios¹

	Taxes ²	Direct taxes ³	Interest payments ⁴	Wages ⁴
Asia	14.1	33.3	15.8	28.4
Latin America	14.7	39.4	14.0	18.4
Central and eastern Europe	28.4	50.7	12.4	10.0
<i>Memo item:</i>				
G7	27.1	70.0	11.9	10.8 ⁵

Note: Regional simple averages refer to the following countries: Asia (China, India, Indonesia, Korea, Malaysia, the Philippines, Singapore and Thailand); Latin America (Argentina, Brazil, Chile, Colombia, Mexico and Peru) and central and eastern Europe (the Czech Republic, Hungary, Poland and Russia).

¹ Averages for the period 1997-2001. ² As a percentage of GDP. ³ As a percentage of total revenues. ⁴ As a percentage of government current expenditures. ⁵ Excludes Japan.

Sources: IMF, *Government Finance Statistics*; national data.

Other factors may be equally important. For example, the paper by Chung in this volume attributes the smaller role of automatic stabilisers in Korea than other OECD countries to the relatively low share of public finance in GDP (25% of GDP). In some cases, it may also be the result of a conscious effort by the authorities to avoid countercyclical bias in fiscal policy. For example, the paper by Nasution in this volume points out that in Indonesia the primary goal of fiscal policy is to balance the budget irrespective of the economic cycle. It could also be argued that weak automatic stabilisers do not matter to the extent that governments show sufficient flexibility and discipline in running a discretionary fiscal policy. For instance, in Malaysia, the government consistently maintained a surplus in its current operations, which enabled it to run an active discretionary fiscal policy without having to depend on automatic stabilisers. The paper by Vijayaledchumy in this volume points out that such a fiscal stance has lowered long-term fiscal risks in Malaysia and strengthened the role of countercyclical fiscal policy.

In fact, as Table 2 shows, many countries used discretionary fiscal policy to offset demand fluctuations in the current cycle. Structural deficits were generally large and have widened in the past two years in Colombia, the Czech Republic, Peru, Poland and Thailand. Moreover, to the extent that countries implemented off-budget spending programmes, structural deficit measures reported in Table 2 may understate the true magnitude of discretionary fiscal operations.¹³ For instance, in Mexico, investment spending was boosted in recent years by encouraging the private sector to build infrastructure projects through access to government guaranteed borrowing. Including such spending programmes and adjusting the budget for other effects, the government's structural deficit increased to over 2.5% of GDP in 2001 from below 1% estimated by the conventional deficit measure (see the paper by Sidaoui in this volume). In Hungary, off-budget infrastructure spending financed through state-owned banks and state asset management companies has been an important source of fiscal stimulus. Extra-budgetary spending has also been high in the Czech Republic and Poland. Some countries (for example China, the Philippines and Thailand) also attempted to provide fiscal stimulus by front-loading expenditures in the early part of the year when private demand was weak with the intention (not always successful) of cutting back as the economy recovers. Such temporary through-the-year stimulus programmes may have been successful in kick-starting the economy, although their ultimate effect remains unclear.

¹³ There are other limitations to the use of the CAB as an indicator of fiscal policy stance (see, for example, Blanchard (1990a), Chouraqui et al (1990) and Heller et al (1986)). For example, the CAB does not take into account expectations of future fiscal policy for private sector decisions; it is based on the assumption that consumption depends on current income and tax and expenditure changes have similar impacts on demand; and it does not correct the deficit for movement of key variables such as inflation and the interest rate. In addition, Auerbach (2002) argues that CAB calculated by excluding automatic stabilisers does not necessarily provide the impact of contemporaneous changes in fiscal policy since tax changes may include phase-in provisions that have impacts going beyond the current year or even the current cycle.

Still others attempted to alter the composition of government spending to make fiscal stimulus more effective or add net stimulus to the economy. In Chile, given the structural surplus rule, the government attempted to change the composition of public expenditure in favour of employment-oriented programmes. Similarly, in Thailand, a major thrust of fiscal policy has been to boost rural demand by promoting special spending programmes in the village and small enterprise sector. In Malaysia, the government selected capital projects thought to have large multiplier values. The paper by Kiss in this volume explains why the composition of fiscal stimulus might be important. In Hungary, while an increase in government spending on wages and transfers is found to affect demand more quickly than a similar increase in investment spending or a reduction in consumption taxes, the former kinds of stimulus also lead to a prolonged deterioration in the external balance and higher inflation.

Country experiences also reveal several practical considerations, limiting the use of expenditure switching policies to boost demand. For example, in India timely switching of expenditure to infrastructure projects, with strong backward and forward economic linkages, has not proved easy in view of prevailing spending rigidities. Moreover, the effectiveness of such stimulus measures was hampered by long implementation lags. The paper by Farfán in this volume notes that, while a shift of expenditure from imported to domestic goods could help demand, the complex budgetary process reduced its practical use.

3. Is fiscal policy effective?

The issues

There is little consensus about the impact of fiscal policy on the economy. One mainstream view has been that government should actively use a countercyclical fiscal policy to offset demand shocks to the economy.¹⁴ According to this view, the role for a discretionary fiscal policy is greater when the economy is hit by a large demand shock and automatic stabilisers cannot provide a sufficient degree of stabilisation to the economy. Others have argued that, while a discretionary fiscal policy should generally be avoided, the need for such a policy may arise in special circumstances: for instance, when monetary policy is constrained because of a fixed exchange rate or by the zero lower bound on the nominal interest rate.

A contrary view asserts the relative ineffectiveness of fiscal policy.¹⁵ According to this view, temporary increases in the fiscal deficit have little impact on demand because they imply future tax increases. Permanent changes to fiscal policy to boost the economy, notwithstanding their demand impact, give rise to the problems of persistent deficits and high real interest rates. In the context of the US economy, Blanchard and Perotti (1999) show that fiscal multipliers are usually small, often close to one, and over a long period fiscal deficits largely crowd out private investment. Moreover, Perotti (2002) argues that the effectiveness of fiscal policy may have declined in the past two decades. Some of the plausible, though inconclusive, factors are growing openness, the move to more flexible exchange rates and changes in the behaviour of monetary authorities.

Others argue that fiscal policy may even have a negative multiplier effect in the presence of a high public debt.¹⁶ According to this view, credible fiscal adjustments aimed at permanently reducing public debt can generate growth by lowering the future tax burden, real interest rates and the credit risk premium on international bonds. This view has gained ground from the experience of successful fiscal

¹⁴ This is alternatively known as the Keynesian view. This view assumes that individuals are short-sighted and credit-constrained and hence respond to variations in their disposable income brought about by fiscal policy by changing consumption.

¹⁵ This is familiarly known as the neoclassical view (see, for example, Bernheim (1989) and Feldstein (1982)). According to this view, while discretionary fiscal policy to fine-tune the economy should be avoided, government should allow automatic stabilisers to even out deficits and surpluses over the cycle (Barro (1979)). An alternative and extreme view is the Ricardian school, which argues that tax and debt financing of expenditure have similar impacts on demand (Barro (1974)).

¹⁶ See, for example, Blanchard (1990b), Giavazzi and Pagano (1990a), Giavazzi et al (2000) and Perotti (1999).

adjustments that seem to have led to a sharp rise in investment and growth.¹⁷ An important prediction of this view has also been that fiscal policy may have significant non-linear effects. At low levels of public debt, fiscal policy generates the usual Keynesian effects. However, when the debt levels rise to some critical limit, fiscal policy has unconventional contractionary effects.¹⁸

Notwithstanding the competing views, several practical considerations may limit the use of discretionary fiscal policy in emerging economies. In particular, when the historical association between the fiscal deficit and inflation is strong, countries may be constrained in using the fiscal policy option.¹⁹ Indeed, this is a key point stressed by many country papers in this volume. The concern is that an expansionary fiscal policy may threaten long-run debt sustainability and raise inflation expectations that could adversely affect the central bank's ability to control inflation. Moreover, in relatively open economies fiscal multipliers may be small due to a high degree of external leakage.²⁰ In such circumstances, fiscal expansion to boost demand is likely to worsen the current account balance, with adverse implications for external sustainability.

External constraints on running countercyclical policies may be particularly severe in countries with a history of marked exchange rate volatility if fiscal expansion weakens investors' confidence and triggers speculative currency pressures. In Colombia, fiscal expansion adversely affected the exchange rate because markets at times doubted the government's ability to maintain long-term fiscal sustainability, thereby raising credit risk premia and expectations of devaluation (see the paper by Uribe and Lozano in this volume). On the other hand, as the recent Argentine experience demonstrated, when the exchange rate is fixed, long-term fiscal sustainability assumes a critical importance for continued market confidence on the peg. Even though Hong Kong has no public debt and has maintained a large fiscal reserve to support short-term fiscal stimulus to the economy, investors' perceptions about government's long-run fiscal soundness has had important consequences for how they view the sustainability of the currency board (see the paper by Peng et al in this volume).

Fiscal policy and stabilisation: the historical experience

One indicator of the relative role of fiscal policy in macroeconomic stabilisation is the share of the government sector in total demand. In Asia, following the reliance by many countries on fiscal stimulus after the 1997-98 financial crisis, the share of government consumption and capital spending (excluding bank restructuring costs) in total demand increased by over 1 percentage point between 1997 and 2000, with more substantial increases in Korea, Malaysia and Singapore. In contrast, in Latin America the contribution of the government sector to total demand has either remained stagnant (for example, Mexico and Peru) or fallen (for example, Brazil) in recent years.

A further way to look at the influence of fiscal policy on growth has been to see how the fiscal balance has moved in relation to economic fluctuations over a longer time horizon, including several cycles. Do balances respond differently to an upturn than to a downturn? Does the degree of response vary from a boom to a sharp growth slowdown? Table 4 reports the average changes in the growth rate and the fiscal balance in different regions during two periods - "good" and "bad" - with the former representing those years when growth improved by more than 1.5 percentage points over the previous year since 1980 and the latter in which it fell by a similar order. The table does not show any significant differences in fiscal responses of emerging economies to economic fluctuations: in all regions, fiscal balances improved during "good" times and deteriorated during "bad" times. Nevertheless, some difference is apparent with respect to the degree of fiscal flexibility of different regions during a downturn compared to an upturn. In Asia, for example, fiscal balances seem to deteriorate faster during times of large growth declines than they improve during large growth increases. In Latin America, fiscal flexibility seems to be much lower in a downturn than in an upturn.²¹ Fiscal policy

¹⁷ The often cited examples are the fiscal adjustment experiences of Denmark and Ireland in the early 1980s; see Giavazzi and Pagano (1990a).

¹⁸ See, for example, Perotti (1999) and Sutherland (1997).

¹⁹ Fischer et al (2002) show that the link between fiscal deficit and inflation is much stronger when inflation is high.

²⁰ This is cited as an important reason why fiscal expansion may be relatively unsuccessful in economies such as Hong Kong and Singapore.

²¹ Gavin et al (1996), Gavin and Perotti (1997) and IMF (2002b) argue that fiscal policy has been procyclical in Latin America.

response to growth in central and eastern Europe appears to be stronger than other regions during both “good” and “bad” periods.

Table 4
Fiscal balance and growth¹

	Good years ²		Bad years ³	
	GDP growth	Fiscal balance ⁴	GDP growth	Fiscal balance ⁴
Asia	3.2	0.5	-3.9	-1.0
Latin America	3.9	0.7	-3.0	-0.2
Central and eastern Europe	2.0	2.5	-1.8	-1.3
<i>Memo item:</i>				
OECD	2.2	0.4	-2.2	-0.9

¹ Average of changes; period 1980-2001. ² Defined as those with increases in real GDP growth equal to or greater than 1.5 percentage points. ³ Defined as those with declines in real GDP growth equal to or greater than 1.5 percentage points. ⁴ As a percentage of GDP.

Sources: OECD; national data.

Many factors may account for the observed difference in regional fiscal policy responses. For example, the relatively stronger fiscal response of the East Asian countries to a growth slowdown has been attributed to factors such as their historical record of fiscal soundness prior to the 1997-98 crisis, low inflation, small external financing requirement and a relatively less volatile exchange rate (Table 5). Structural factors such as a relatively low inequality of income, requiring less redistributive bias in fiscal policy, and a diversified tax base have also been cited as important. However, the public debt ratios in some countries have risen to high levels in recent years, suggesting that the room for manoeuvre on fiscal policy may be declining in much of Asia.

Some blame Latin America's borrowing constraint for its weak fiscal response during a recession (Gavin and Perotti (1997)). This constraint has been generally linked to the region's fragile fiscal structure (eg high dependence on commodity taxes and procyclical movement of expenditure), high degree of macroeconomic volatility and a large external financing need in the budget. Moreover, since fiscal performance and macroeconomic volatility tend to be closely correlated in Latin America, an increase in the fiscal deficit is likely to weaken investors' confidence during a growth slowdown and increase credit spreads, preventing countries from running a countercyclical fiscal policy.

One question that arises is the extent to which a procyclical fiscal response may be considered appropriate in certain cases. One view is that if the objective is to reduce output volatility then a procyclical fiscal policy is undesirable. In this case, the economy is simultaneously subject to two types of negative shocks - one arising from the initial adverse demand and the other a negative policy with reinforcing effects. The resulting output volatility can be severe, depending on how other policies move in response to the shock. An opposite view is that a procyclical fiscal policy is not necessarily bad for the economy if it helps to reduce long-term fiscal risks and improves financial market confidence. In such circumstances, it could have substantial positive implications for the economy and may even enhance effectiveness of other policies. The recent experience of Brazil appears to support this view. Brazil responded to the recent financial market volatility by overachieving its primary surplus target during an economic downswing. Notwithstanding its short-term negative demand effects, the fiscal tightening helped to restore investor confidence in Brazil, lowering credit spreads and reopening the country's access to international capital markets.

Table 5
Macroeconomic indicators

	Inflation		Current account ¹		Exchange rate volatility ²		Public debt ³	
	1990s average	2000-02	1990s average	2000-02	1990s average	2000-02	1996	2001
Asia	7.2	3.1	2.9	9.2	3.8	1.6	36.0	58.0
Latin America	435.4	5.9	-7.1	-8.5	14.9	3.8	29.0	37.0
Central and eastern Europe	95.1	9.4	0.6	7.0	33.7 ⁵	1.9 ⁵	44.0	41.0
Others ⁴	25.0	15.1	-3.4	2.2	2.7	3.9	68.0	66.0

¹ In billions of USD. ² Measured as the standard deviation over one-month changes in the bilateral exchange rate against the US dollar. ³ As a percentage of GDP. ⁴ Average for Israel, Saudi Arabia, South Africa and Turkey. ⁵ Bilateral exchange rate against the euro.

Sources: Bloomberg; Datastream; IMF; national data.

The paper by Sidaoui in this volume illustrates the dilemma facing the central bank from a procyclical fiscal policy. In Mexico, a procyclical fiscal bias has increased output volatility, requiring monetary policy to be aggressive in addressing demand fluctuations. This has, in turn, made interest rates more volatile. At the same time, since a procyclical fiscal policy preserved government's fiscal credibility, it allowed monetary policy to play a more effective role in the economy. On balance, Sidaoui argues that a procyclical fiscal policy has worked well in the Mexican context: it has focused fiscal policy on medium-term consolidation and lowered fiscal risks from government's rising contingent liabilities.

Can a medium-term orientation help?

Recent efforts to improve fiscal policy effectiveness have generally been directed at eliminating structural deficits and balancing the budget over the cycle. There have been several motivating factors. One is that a greater commitment of the government to maintain medium-term fiscal sustainability will enhance its fiscal credibility, leading to positive economic outcomes. Moreover, monetary policy is generally thought to be more effective when the private sector believes that the government would not resort to inflationary deficit financing. Yet another argument is that democratic budgetary processes tend to be biased towards short-term employment and output goals. To offset this political bias, it is necessary to focus fiscal policy on medium-term goals and commit the political authorities to formal institutional arrangements such as a deficit or debt rule.²²

Can a medium-term focus make countercyclical fiscal policy easier? Country experiences have generally been mixed. For example, in Chile the recent effort at improving medium-term fiscal orientation seems to have enhanced the role of automatic stabilisers (see Box 2). In 2001, faced with a growth slowdown, Chile allowed its budget balance to go into deficit to accommodate the cyclical effects although, under its new fiscal consolidation programme, the government is committed to maintaining a structural fiscal surplus. Despite adverse external developments, international bond spreads suggest that market confidence in Chile's fiscal policy improved. The paper by Marshall in this volume points out that the new fiscal rule has strengthened the response of fiscal policy to economic fluctuations and provided conditions for a stable monetary regime. To the extent that improved fiscal credibility reduced financing cost for the private sector (through lower sovereign spreads), it had favourable long-term implications for private investment and growth (Le Fort (2002)).

²² See, for example, Alesina and Perotti (1995), Poterba (2000) and Koptis (2001).

Box 2

Chile's experience with medium-term fiscal policy

As part of its effort to improve fiscal credibility, Chile introduced a new fiscal policy framework in 2000 aimed at achieving and maintaining a structural surplus of 1% of GDP in the central government budget starting in 2001. An important objective of the new policy rule is to anchor long-term fiscal expectations and allow automatic stabilisers to play an effective countercyclical role (see Ministry of Finance, Chile (2000)). The new fiscal rule is also expected to: help broaden the planning horizon of the public institutions and thereby avoid the potential procyclical expenditure behaviour in the event of a budget adjustment; boost government saving and investment; and maintain fiscal sustainability in the light of the government's contingent liabilities.

In operating the rule, the central government's structural revenues are computed using estimates of potential output and the long-run copper price. Revenue and expenditure plans are then set so as to achieve the ex ante structural surplus target. In the event of GDP and copper prices deviating from their potential and long-term values, the cyclical budget balance is allowed to adjust to the full extent. The central government has pursued a tight fiscal policy since the introduction of the new policy rule and achieved an actual structural surplus of 0.9% of GDP in 2001. The overall budget balance, nevertheless, was in deficit in 2001, reflecting the cyclical impacts on the budget. To promote transparency in the estimation of the structural surplus, the government has instituted a commission of experts, who recommend the reference copper price and the output gap each year. The degree of transparency in operating the rule is expected to strengthen with the government adopting the IMF fiscal transparency codes (IMF (2002a)).

The commitment of the authorities to the new fiscal policy rule has been strong. Despite the recent increase in the unemployment rate, the government has resisted the pressure to relax fiscal policy. Market confidence in Chile's fiscal soundness has strengthened following the achievement of the targeted structural surplus in 2001.

On the other hand, Peru's recent experience suggests that fiscal adjustments to improve medium-term sustainability may have short-term growth implications, especially if fiscal rules do not allow for sufficient adjustment of balances during a severe recession. The fiscal transparency and responsibility law in Peru, introduced in 1999, envisaged a maximum fiscal deficit target of 2% of GDP in the event of a recession. But this limit, found inadequate to cushion the economy against the global slowdown in 2001, was suspended. The law is now being revised to include a transitional phase for reaching the medium-term target following an extraordinary situation (implying a deviation from the target) and also provisions that would ensure a return to the fiscal target.²³

Several alternatives have recently been suggested to improve fiscal policy responses to cyclical fluctuations without sacrificing the medium-term fiscal objective. For example, some have argued that fiscal authorities should respond to output fluctuations through a fiscal policy reaction function similar to a monetary policy reaction function (Taylor (2000a)). Such a reaction function could link the actual deficit to a constant structural surplus (to provide the medium-term fiscal anchor) and the output gap. The reaction coefficient on the output gap could be chosen depending on the strength of the authorities' desire to smooth output fluctuations by using fiscal policy.²⁴ To prevent misuse of the rule, its proponents have proposed an independent fiscal board along the lines of monetary policy boards for its implementation.²⁵ One important advantage of such a rule is that it would reduce the time lag of policy response and might insulate fiscal policy from political pressures.

At the same time, several practical difficulties could complicate the operation of a fiscal policy reaction function. For example, it is argued, democratic concerns could make its implementation difficult. There are also disagreements about the operating mechanism. Should it include only tax adjustments or spending changes, or both? What should be the magnitude of response? Who should coordinate policy - an independent fiscal or monetary policy board?

²³ See the paper by Farfán in this volume.

²⁴ In the US context, Taylor (2000a) has proposed a fiscal policy reaction function of the following type: $S = s + 0.5(y - y^*)$, where S is the overall budget balance as percentage of GDP, y and y^* are logs of actual and potential output and the constant (s) is the ratio of targeted structural budget surplus to GDP.

²⁵ Among the other proponents of an independent fiscal board are Eichengreen et al (1999) and Wyplosz (2001). Practical limitations to operating a fiscal policy reaction function are discussed by European Commission (2002) and Seidman (2001).

4. Can monetary policy take up the slack?

Monetary policy in the recent slowdown

In a number of emerging economies, monetary policy has been relaxed in quite a substantial way over the past two years. As Table 6 shows, many countries cut policy rates in 2001, some to historically low levels: rate cuts were typically accelerated during the second half of 2001 following increased uncertainty in the global economy. Monetary stimulus was also significant in 2002, even though a few countries rolled back rate cuts or further raised rates during the year.

The exchange rate also seems to have played a major role in demand stimulation in the current cycle - in particular during 2002, as a number of countries saw significant falls in their real exchange rates. In Latin America, exchange rate depreciations have been led by a series of recent financial crises. Similarly, speculative currency pressures played an important role in South Africa in 2001, while much of the recent appreciation appears to be a correction of that overshooting. In central and eastern Europe, rising capital inflows have played an important part in the recent appreciation of the exchange rate.

Some of the general factors that may explain the relatively greater reliance put on monetary policy in the current slowdown are the recent decline in inflation, large negative output gaps in many countries and the substantial global monetary easing since the beginning of 2001. In Asia, inflation has declined to low levels during the past two years, while China and Hong Kong have seen price declines. This was also true for a number of countries in Latin America (notably Columbia, Peru and Mexico) where inflation has fallen to low or moderate levels. On the other hand, inflationary pressures increased in others (Argentina, Brazil and Venezuela), led by problems of debt sustainability, political uncertainty and large depreciations of the exchange rate. In central and eastern Europe, strong exchange rates have generally lowered inflation and external competitiveness, prompting central banks to cut interest rates.

The sharp cuts in policy rates have also been explained by many analysts as a pre-emptive move by central banks in the absence of overt inflationary pressures and expectations of a prospective deterioration in demand conditions. Other practical considerations may have also played a role in putting more emphasis on monetary policy in output stabilisation. For example, monetary policy lags (decision and implementation lags) are generally shorter than those of fiscal policy and its impact is thought to be more certain. Moreover, interest rates can be adjusted more flexibly than tax and expenditure policies - so that interest rate reductions can be "taken back" more easily as the economy strengthens.

Table 6
Selected policy indicators

	Change in policy rates ¹		Change in real effective exchange rates ²		Inflation rate	
	2001 ³	2002 ³	2001 ³	2002 ³	2001 ³	2002 ³
China	0	-27	4.2	-1.3	-0.3	-1.0
Hong Kong	-475	-50	-0.2	-11.3	-3.5	-1.8
India	-150	-25	2.3	8.7	2.2	3.3
Indonesia	309	-463	6.7	21.9	12.5	8.7
Korea	-125	25	0.9	4.0	2.8	3.7
Malaysia	-50	0	5.6	-4.0	1.2	1.3
Philippines	-575	-75	3.3	-6.1	3.9	2.6
Singapore	-169	-19	-2.1	-2.4	0.0	0.4
Thailand	75	-50	4.0	-3.6	0.8	1.4
Argentina	-550	250	1.6	-59.5	-1.6	41.1
Brazil	321	585	-10.1	-32.6	7.7	10.2
Chile	-107	-350	-9.5	-5.2	2.6	2.8
Colombia	-219	-318	5.5	-16.1	9.0	8.2
Mexico	-1029	36	8.0	-9.9	4.4	5.8
Peru	602	-291	6.7	-4.0	-0.1	1.5
Venezuela	671	533	4.9	-36.1	12.3	29.9
Czech Republic	-50	-200	10.2	3.3	4.1	0.6
Hungary	-125	-125	13.3	8.9	7.0	3.4
Poland	-750	-475	10.6	-10.0	3.6	0.7
Russia	613	-971	10.1	-4.8	18.7	15.1
Israel	-282	374	...	...	1.4	6.8
Saudi Arabia	-446	2	2.2	-7.3	0.0	-0.8
South Africa	-250	400	-29.6	33.6	4.6	12.2
Turkey	-300	-1500	-21.3	8.3	68.5	29.7

¹ Policy rate or significant short-term interest rate; in basis points. ² Annual percentage changes; an increase indicates an appreciation. ³ End of period.

Sources: Bloomberg; Datastream; IMF, *International Financial Statistics*.

Coordinating fiscal and monetary policies

Why coordinate policy?

It is also relevant to ask how much the recent monetary policy stance has been influenced by fiscal policy considerations. Some argue that, if fiscal policy cannot be expansionary during a slowdown, monetary policy should move to fill the gap, given quiescent inflation. For example, according to Taylor (1995, 2000a), when fiscal policy is focused on a medium-term objective or is otherwise

constrained by a rule, central banks should give more weight to output stabilisation in their reaction function.²⁶

Others have argued that fiscal and monetary policy may have to move together when uncertainty about the impacts of any one particular policy is high. Hence, coordination is critical to achieving the maximum policy impact (Blinder (1981)). The need for such a coordinated policy action was, for instance, highlighted in 2001 in many industrial and emerging economies when the world economy showed persistent weakness, uncertainty about the effects of policy²⁷ was high and interest rates were already low. Many point out that in such circumstances, the strategy should not be to “keep the powder dry”²⁸ but to use all available policy instruments aggressively to enhance policy effectiveness.²⁹ Acting gradually raises the risk that policies may become ineffective (zero interest rate bound) and the economy may drift further down.

On the other hand, a high degree of fiscal imbalance can pose a policy dilemma to the central bank. Given the weak fiscal position, a looser monetary policy is likely to raise inflation expectations and prove counterproductive to growth. At the same time, a tighter monetary policy can lead to further deterioration of fiscal sustainability, with similar results. Monetary policy challenges of this nature have been aptly summarised by what Sargent and Wallace (1981) call the “unpleasant monetarist arithmetic”. A recent strand of the literature argues that when the actual policy setting is dominated by fiscal policy, monetary policy will have little relevance for inflation, with the interest rate and money supply becoming endogenous to fiscal policy.³⁰ When the primary budget balance evolves through the political process, and fiscal policy is not anchored by a medium-term rule, the government’s liabilities would simply grow out of control, raising expectations that government debts would not be paid by raising future taxes.³¹ This creates the temptation to reduce the real value of government debt by inflation. On the other hand, if the fiscal policy regime is such that the government is committed to maintaining fiscal solvency, an independent central bank that responds to a rise in the deficit by raising interest rates can force the government to adjust. In such a regime, monetary policy could dominate fiscal policy.

These policy dilemmas are likely to assume added significance when the exchange rate is sensitive to fiscal policy. In theory, assuming high capital mobility, a floating exchange rate and a constant risk premium, a fiscal expansion is expected to increase (albeit temporarily under perfect capital mobility) the domestic interest rate and lead to an appreciation of the exchange rate.³² Conversely with low capital mobility, the exchange rate is expected to depreciate as fiscal expansion spills over to imports and raises the current account deficit. In practice, however, the country risk premium may be sensitive to fiscal policy, which implies that an increase in the fiscal deficit may, in fact, raise the probability of default, leading to currency pressures. Empirical evidence is generally ambiguous about the link between fiscal policy and the exchange rate.³³ Nevertheless, the recent experience of many emerging economies suggests that under conditions of low fiscal credibility and high exposure to external

²⁶ A counter viewpoint is by Svensson (2002), who argues that central banks should not play an active role in output stabilisation but may choose to indirectly accommodate such an objective by focusing on a gradual convergence of inflation to the target. He also argues that in countries where inflation targeting is new and central banks have not achieved the required credibility to anchor inflation expectations firmly, giving more importance to inflation control may improve output and inflation variability and hence result in better price and growth outcomes.

²⁷ High uncertainty about the effects of policy could mean the possibility of approaching the zero lower bound on interest rate faster.

²⁸ A phrase generally used to represent a cautious policy stance.

²⁹ This point was, for instance, stressed by Meyer (2001) in justifying the large reduction of interest rate by the Federal Reserve during the second half of 2001 when the US economy deteriorated sharply following the events of 11 September.

³⁰ This view, familiarly known as the fiscal theory of price determination, has been pioneered, among others, by Woodford (1995, 2001). See also Canzoneri et al (2001, 2002).

³¹ The relevant transmission mechanism is the positive wealth effect in the bondholders’ portfolio, which raises aggregate demand and inflation. In such circumstances, the only way to maintain fiscal sustainability and bring about an adjustment in the private sector wealth position is to reduce the real value of government debt by keeping interest rates low and increasing inflation; see Woodford (2001).

³² This is the standard prediction by the Mundell-Fleming model with unchanged monetary policy.

³³ See IMF (1995).

borrowing, a fiscal expansion is likely to destabilise exchange rate expectations. On the other hand, if fiscal consolidation has substantial impacts on confidence, the risk premium may decline and the exchange rate may appreciate.

Coordination in practice

In practice, however, policy regimes are unlikely to be either extremes of absolute fiscal dominance or full monetary independence. There is general agreement that the choice of policy regime is strongly influenced by the specific institutional history, and the effectiveness of regimes depends on the degree of policy coordination maintained by the government and the central bank. In China, for example, the lack of central bank independence has not affected monetary policy effectiveness, nor has it constrained the conduct of countercyclical policies. The paper by Li in this volume notes that close coordination between fiscal and monetary authorities has been able to contain deflation and promote economic activity. While the government introduced fiscal stimulus measures to counter the growth slowdown, the central bank played a complementary role by adopting an expansionary monetary policy. Perhaps significant in the Chinese case are the administered interest rate structure, a fixed exchange rate and a relatively closed financial system that seem to have contained much of the potential policy conflicts and their adverse market implications.

On the other side of the spectrum is Singapore, where fiscal policy has played at the most a passive role with a strong preference towards maintaining fiscal prudence. During the current slowdown the government has allowed a fiscal deficit. It has, however, used microeconomic policies (tax and expenditure policies) to boost the competitiveness of the economy. Moreover, the government's strong fiscal position has facilitated flexible conduct of monetary policy: the central bank has actively used its effective exchange rate stance in the current cycle to lower domestic interest rates and strengthen external competitiveness.

Israel's recent experience demonstrates policy coordination challenges arising from a relatively high degree of fiscal dominance. Although the government had publicly committed to end fiscal dominance by entering an agreement with the central bank and announcing a deficit target for 2002, its failure to maintain this commitment led to an upward shift in the term structure of inflation expectations and increased exchange rate volatility. To avert a financial crisis, the central bank had to raise interest rates sharply, notwithstanding its negative impacts during a growth slowdown (see the paper by Sokoler in this volume). Similarly, in India a high degree of fiscal dominance has been manifest in the growing market borrowing requirement of the central government and high real interest rates. As pointed out by Mohan in this volume, the conduct of monetary policy has, therefore, increasingly reflected fiscal realities and the need to avoid counterproductive outcomes that might arise from policy conflicts.

The experience of Indonesia and Venezuela, for instance, indicates the crucial role of fiscal policy in exchange rate developments and its implications for monetary policy. Both countries had to tighten monetary policy sharply following large exchange rate depreciations caused, among other factors, by markets' losing confidence in fiscal policy. Colombia confronted a similar policy dilemma, given its weak fiscal position, increasing dollarisation and a high pass-through of exchange rate changes into prices. Under such circumstances, an expansionary fiscal policy raised the risk of devaluation and high inflation with counterproductive implications for the economy (see Uribe and Lozano in this volume).

Turkey's experience last year demonstrated the critical role of policy coordination in crisis management. Following the abandonment of the crawling peg after the early 2001 crisis, the central bank and the government maintained tight policy coordination to restore market confidence in the exchange rate: an important element in this coordination was the timely increase in interest rates and overachievement of primary surplus by the government. Citing Turkey's experience, Binay argues in this volume that crisis situations require stronger fiscal and monetary coordination to reduce their potentially damaging implications in a more integrated financial market.

The recent policy mix

Table 7 shows the major episodes of fiscal adjustment in emerging economies since 1990 and the stance of monetary policy during these adjustments. As may be seen, the policy mix has varied significantly across economies. For example, large fiscal expansions in Chile, Hong Kong and

South Africa at different points of time during the 1990s were accompanied by a contractionary monetary policy.

Table 7

Major episodes of fiscal adjustment and the stance of monetary policy

	Fiscal adjustment		Monetary policy ³
	Year ¹	Size ²	
China	1998	1.2	N
Hong Kong	1998	2.5	C
India	1991	-2.4	E
	1993	1.3	E
	1994	-1.2	E
	1998	1.7	E
	Before 1998 ⁴	-1.0	N
Indonesia	1998	1.2	E
Malaysia	1998	2.5	E
	2001	2.1	E
Philippines	2000	4.0	N ⁵
Singapore	1998	9.0	N
	2001	9.0	N
	1990	1.7	
Thailand	1992	-2.0	
	1997	-4.2	
	1999	-3.2	C
Brazil	1997-1999	3.1	C
Chile	1999-2000	-1.4	N
	1992-1993	1.3	E
Colombia	1999-2000	2.1	E
	1995	-2.6	C
Mexico	2001	0.6	E
Czech Republic	2000	-2.2	E
	2001	-2.8	E
Hungary	1995	5.7	E
	1996	2.2	E
Poland	2001	...	E
Russia	1998	-5.7	C
	2001	2.9	N
Israel	1997	-1.8	
South Africa	1991	-2.8	E
	1994	2.0	C

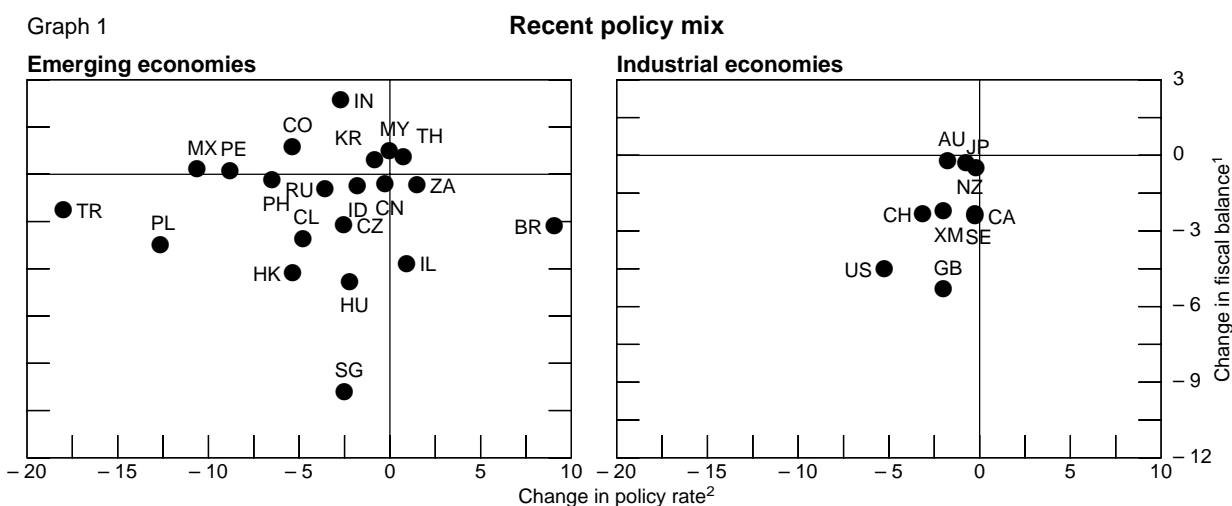
¹ The year in which the government implemented a large (amounting to at least $\pm 1\%$ of GDP in a single year) discretionary programme during the period 1990-2002. ² Change in the government balance as a percentage of GDP. ³ E: expansionary; N: neutral; C: contractionary. ⁴ After 1998 the budget deficit as a percentage of GDP declines every year by 25% on average and monetary policy is considered neutral. ⁵ Contractionary episodes in May, September and October.

Source: Central banks.

In a large number of countries, however, historical experience suggests that monetary policy was also expansionary during the years when fiscal deficits registered a sharp increase (for example, Colombia in the early and late 1990s, India and Korea in 1998, Hungary in 1995 and 1996, Malaysia in 2001-02 and Peru in 2001). To the extent that it is fiscal policy that moved first this may indicate the accommodating nature of monetary policy. In some countries - for instance, Korea in 1998 - it may also indicate a simultaneous movement to expansionary fiscal and monetary policy to stimulate demand following a large external shock.

Another aspect of the historical experience has been that major fiscal contractions have been accompanied by an expansionary or neutral monetary policy (for example, Chile in 1999-2000, the Czech Republic in 2000-01, India in 1991 and 1994 and South Africa in 1991). This may indicate that policy coordination was aimed at reducing downside risks to the economy and avoiding a simultaneous contraction of fiscal and monetary policies.

To highlight the nature of the policy mix in the current slowdown, Graph 1 plots changes in policy rates (or alternatively short-term interest rates) and changes in the fiscal deficit of the general government between 2000 and 2002, in both emerging and industrial economies. Both fiscal and monetary policies have been expansionary in a majority of industrial countries: a similar pattern is also discernible in some emerging economies. On balance, however, monetary policy seems to have played a relatively greater role than fiscal policy. This is particularly true of emerging economies - where the scale of interest rate changes has been substantial (for instance, Mexico, Poland, Peru and the Philippines).



¹ As a percentage of GDP. ² Changes over the period 2000-2002.
Sources: Bloomberg; national data.

Regional differences in policy mix also appear to remain high. In Asia, the reliance on fiscal policy has been significant in some economies (for example, Hong Kong and Singapore), while many have relaxed monetary policy. In Korea, the policy mix seems to have undergone a significant change after the recent financial crisis. Prior to the 1997-98 crisis, the government largely relied on monetary policy for demand management and followed strict fiscal discipline. However, the government switched to an expansionary fiscal policy immediately following the crisis as monetary policy was relatively ineffective in view of the large financial shock. In the more recent period, monetary policy has played an active stabilisation role, with fiscal policy helping to restructure the financial system. In India, a relatively high fiscal imbalance appears to have shifted the adjustment to monetary policy for reviving growth in the past two years. A similar policy mix has been noticeable in the Philippines.

In Latin America, with the exception of Chile, fiscal policy was largely contractionary. Monetary policy played a comparatively active role in stabilisation in Mexico, where an appreciating exchange rate was the key factor, and in Peru, where inflation fell to negative levels in 2001. In Argentina, both fiscal and monetary policies have been tightened following the recent financial crisis. Brazil tightened monetary policy further in 2002: fiscal policy also moved to a tighter stance measured by the primary budget balance. In central and eastern Europe, both fiscal and monetary policies have been easier; for instance, in Poland, the Czech Republic and Russia.

5. Public debt and monetary policy

Traditionally, the size of deficits rather than the composition and maturity of public debt has been the focus of monetary policy. However, this perception seems to be changing rapidly. One important reason might be the recent increase in the frequency of emerging market financial crises, with origins in maturity and currency mismatches in the public and private sectors.³⁴ Many argue that an imbalanced public debt structure - too high a concentration of short-term and/or foreign currency denominated securities - can aggravate financial uncertainty and restrain monetary policy from taking strong actions or even undermine its effectiveness. The increased use of price- and exchange rate-indexed bonds may be yet another reason why monetary policy challenges could be heightened by the composition of public debt. Thus debt composition might have an independent influence from debt maturity (the problem of bunching repayments), although both factors have often played a combined role in many recent financial crises.

Tables 8 and 9 provide some important statistics about government debts in emerging economies and how countries have financed their fiscal deficits over the past three years. A few aspects are worth noting. The conventionally defined short-term debt (fixed rate debts of less than one year original maturity) does not appear to account for a large share of total debt, except in central and eastern Europe, Mexico and the Philippines (Table 8).³⁵ This may be partly attributable to the development of a domestic bond market in recent years and partly to the recent sharp decline in borrowing from central banks. For example, during 2000 to 2002 domestic long-term marketable bonds financed about 55% of fiscal deficits in Asia, about 60% in Latin America and a little over 36% in central and eastern Europe (Table 9). In Korea, Malaysia, Mexico, the Philippines, Poland and South Africa the shares exceeded 70%. Excepting Brazil and Thailand, central bank financing was negligible or even contracted in some countries.

Second, debts linked to short-term interest rates, and other variables such as inflation and the exchange rate, constitute a large part of the total debt in Latin America as well as in Hungary, Indonesia and Turkey (Table 8). Third, outstanding foreign currency denominated debts of the government remain sizeable in most emerging economies (excepting India) in relation to their total debt, with ratios exceeding 80% in Argentina, Peru and Russia and over 40% in many others. This suggests a high degree of exposure of governments in emerging economies to the global financial environment and exchange rate movements. It is, however, important to note that most countries have avoided financing deficit through short-term external borrowing (less than one-year maturity) during the past three years (Table 9). Most external borrowings have been long-term, although in many cases, through floating rate notes.

Implications of debt maturity

Notwithstanding the reduction in short-term financing, the increase in the size of government borrowing and its concentration in few maturities have resulted in a debt profile with low average remaining maturity in many countries. As the Table A2 in the annex shows, the average remaining maturity of public debt was less than three years in Brazil, Hong Kong,³⁶ Hungary, Mexico and Poland at the end of 2000. Moreover, a significant percentage of debt was concentrated in maturities below one year. The typical ratio is about 30 to 60% in Latin America, over 40% in Hungary and 20% in Poland, suggesting a relatively high rollover rate of borrowing.

³⁴ A recent study documenting evidence on this aspect is Goldstein and Turner (2003).

³⁵ From a theoretical perspective, Barro (1998) shows that an optimal debt management strategy for the government is to place all its debt at the long end (by issuing consols) and index them to inflation. This would not only provide a complete hedge to the government against unexpected changes in expenditure but also allow it to smooth tax changes over time. Moreover, it would remove inflationary bias from fiscal policy by reducing the incentive to use inflation for reducing the debt burden. In practice, however, countries rely on short-term financing. The reasons may include the underdevelopment of domestic bond markets and a volatile financial environment, which either make long-term financing difficult or raise the cost of such financing.

³⁶ Hong Kong's outstanding debt mainly refers to the exchange fund bills and notes issued by the central bank in recent years to develop the local bond market and does not reflect borrowing by the public sector.

Table 8

Proportion of outstanding government debt at end-2001 (original maturity)

	Domestic currency debt					Foreign currency debt
	Fixed rate		Debt indexed to:			
	Short-term ¹	Long-term ²	Short-term interest rate	Inflation	Exchange rate	
China	–	100.0	–	–	–	–
India	1.3	93.9	–	0.1	–	4.7
Indonesia	–	12.1	17.2	15.8	2.7	52.2
Korea	0.4	74.7	–	–	–	24.9
Malaysia	3.0	80.0	–	–	–	16.7
Philippines	18.0	34.0	–	–	–	48.0
Singapore ³	0.0	24.1	66.0	–	–	–
Thailand	7.1	57.5	–	–	–	35.5
Argentina	...	...	...	...	...	97.0
Brazil	1.6	3.9	40.4	7.9	20.4	25.5
Colombia	0.1	17.2	–	25.5	4.3	50.0
Mexico	27.2	28.2	13.3	2.2	0.0	29.0
Peru	2.0	2.0	–	11.0	–	85.0
Czech Republic	46.2	37.0	–	1.2	–	–
Hungary	20.0	36.4	13.3	1.6	–	29.7
Poland	12.4	34.3	9.1	–	–	34.8
Russia	0.4	11.1	–	0.5	–	88.0
Israel	2.5	22.2	1.8	47.0	3.0	23.5
South Africa	5.2	75.3	1.3	3.2	–	15.0
Turkey	8.9	0.6	21.0	11.7	12.9	44.9

¹ With a maturity of less than one year. ² With a maturity with more than one year. ³ 10% of the domestic currency debt is placed in Treasury bills.

Source: Central banks.

One implication of a high refunding requirement is that it might raise refinancing risks for the government and make public debt unsustainable. Moreover, the recent literature has identified several routes through which a high degree of debt rollover can generate potential confidence problems in the financial sector.³⁷ One such route has been the probability that this might create self-fulfilling expectations of a type of bank run, where expectations of partial debt repudiation or debt monetisation raise the risk premium required by investors.³⁸ This, in turn, creates a situation when it pays for the government to fulfil such expectations by defaulting on its liabilities or switching to monetary financing of the deficit. Others show that in countries with partially or fully fixed exchange rates, high refinancing

³⁷ See, for example, Calvo (1998) and Giavazzi and Pagano (1990b).

³⁸ A familiar example of a debt run is the confidence crisis in the Italian government bond market in the late 1980s, when the government ran a high debt rollover risk and the yield on its treasury bills exceeded that on the private certificate of deposit of similar maturity. Alesina et al (1990) argue that in such a situation it would have paid the government to "bite the bullet" by issuing long-term debt even if it implied a higher risk premium.

risks ultimately result in devaluation. This occurs as the timing of a currency attack generally coincides with the dates when the government has a large refunding requirement.

Table 9
Financing of government deficit¹

	Domestic			External		Borrowing from central bank
	Marketable		Non-marketable	Short-term ²	Long-term	
	Short-term ²	Long-term				
China	3.3	55.7	41.0	.	.	.
India	2.4	44.7	51.1	–	1.8	–0.1
Korea	6.2	76.9	16.7	–	–	0.2
Malaysia ³	...	80.8	...	...	19.2	...
Philippines	–9.7	71.3	7.7	–	30.7	–
Singapore	9.6	23.5	66.9	.	.	.
Thailand	19.3	30.1	–	–	24.2	5.7
Argentina	16.2	47.0	11.7	–	25.1	–
Brazil	33.8	70.3	–41.0	–	30.7	6.2
Chile	–	–	–	–	209.0	–109.0
Colombia	1.5	67.9	–	–	30.8	–
Mexico	12.1	97.8	–29.0	0.6	18.5	.
Peru	0.0	15.3	6.0	–2.0	54.3	–
Czech Republic	46.8	37.0	–	–	–	–
Hungary	62.5	31.9	0.0	–	5.6	–
Poland	14.3	72.7	31.8	–	–17.7	–1.1
Russia	–5.3	4.8	–5.0	–	58.0	–
Israel ³	–	61.3	25.4	–	13.4	–
South Africa ³	–11.0	88.1	–13.3	–	87.5	–
Turkey	38.7	40.7	0.0	0.7	19.7	–

¹ As a percentage of total financing. Averages for 2000-02 period. ² Up to one year maturity. ³ 2000-01.

Source: Central banks.

It is generally agreed that government's refunding requirement - as distinct from net borrowing requirements - have played an important role in many recent episodes of emerging market crisis. For example, in Argentina, a high debt refinancing need of the government is said to have precipitated the recent crisis, leading to abandonment of the currency board. In Brazil and Turkey, domestic refinancing risks played a major role in the crises, although both countries had adequately covered their foreign financing needs. One indicator of potential challenges posed by future debt repayment needs is the maturity profile of domestic and foreign debt in emerging economies in the next few years (Table 10). Many countries continue to face a high degree of debt rollover risk. For instance, the ratio of domestic debt falling due for repayment in 2003 (without considering the fresh borrowing in that year) ranges between 30 and 45% in Brazil, Hungary, Poland and Turkey, and between 15 and 20% in many others.

Table 10

Maturity profile of government debt as of 2002¹

	% of total domestic debt falling due for repayment				% of total foreign debt falling due for repayment			
	2003	2004	2005	Beyond 2005	2003	2004	2005	Beyond 2005
India	5.0	6.0	6.0	83.0	–	–	–	–
Indonesia	13.5	18.5	17.8	49.7	12.2	11.2	11.0	27.4
Korea	12.6	19.8	18.3	60.3	9.5	18.1	16.9	55.5
Malaysia	19.8	16.8	13.5	49.9	22.3	4.0	12.2	61.5
Philippines	19.0	13.0	20.0	48.0	6.0	6.0	7.0	81.0
Thailand	15.0	9.7	6.7	68.6	11.5	7.6	10.0	70.8
Argentina	0.5	0.4	1.5	15.6	16.3	11.3	7.1	32.8
Brazil	29.0	14.6	8.7	27.6	18.5	12.4	9.6	55.4
Chile	–	–	–	–	6.2	5.9	8.8	73.2
Colombia	10.1	12.2	9.1	48.7	15.3	9.9	10.8	49.9
Mexico	20.1	23.6	12.2	44.2	13.1	9.1	7.7	70.1
Peru	7.0	6.0	6.0	81.0	5.0	6.0	6.0	83.0
Czech Republic	28.2	7.6	5.4	52.4	–	–	–	–
Hungary	42.4	10.1	16.9	30.6	16.0	16.7	19.4	47.9
Poland	31.0	11.4	8.4	29.5	6.4	9.3	10.0	69.3
Russia	15.6	12.1	2.8	69.5	12.3	8.2	9.7	69.8
Israel	8.6	7.4	9.6	70.7	–	–	–	–
South Africa	1.8	7.2	7.3	73.0	2.9	25.5	0.6	71.1
Turkey	42.6	31.0	19.3	7.0	11.1	16.1	16.8	56.0

¹ Relates to different months for different countries.

Source: Central banks.

Implications of rollover risk may also depend on who holds the debt. Despite the recent reduction in reserve and liquidity requirements, freeing banks from buying guaranteed bonds, banks still absorb a significant part of the government long-term debt issues in emerging economies (Table 11). In most countries, banks are generally required to mark their bond portfolio (especially held for trading) to market; see Mohanty (2002). In a declining interest rate environment banks may be willing to absorb additional government bonds at lower interest costs in view of the capital gains. But such a situation would reverse if markets begin to expect higher interest rates. If banks are weak and unable to absorb capital loss without impairing their profitability this could pose difficult challenges for monetary policy.

Table 11
Buyers of long-term government debt¹

	Banks		Pension funds and others		Central bank		Non-residents	
	1995	2002	1995	2002	1995	2002	1995	2002
China	...	50.3	...	49.7	...	...	...	...
India	...	4.5	...	49.0	0.7	25.3	6.0	11.7
Indonesia	–	–	–	–	–	100.0	–	–
Korea	...	37.1	...	57.7	...	...	...	...
Malaysia ²	13.9	23.3 ³	73.8	74.6 ³	2.8	0.2 ³	2.9	0.2 ³
Thailand	...	74.7	...	19.3	.	.	.	.
Argentina	...	...	...	48.0 ³	...	...	...	52.0
Brazil	48.0 ⁴	55.6	50.7	42.0	...	...	...	...
Chile	...	5.0	...	...	...	...	...	95.0
Colombia	5.9	13.2	23.8	28.8	10.6	2.3	18.2	34.9
Mexico	–7.8	–2.0	119.1	101.8	–9.3	–	80.4	1.2
Peru	–	8.0	–	5.0	–	–	–	87.0
Czech Republic	85.1	56.4	7.5	32.0	...	...	7.4	11.6
Hungary	25.1	0.5 ³	17.7	...	48.4	–	0.5	...
Poland	46.8	72.7 ³	37.2	15.6	9.9	11.6 ³	6.0	11.7 ³
Russia	...	82.0	...	11.9	...	...	...	6.1
Israel	28.0	14.1 ³	68.6	82.0 ³	2.9	3.7 ³	0.5	0.2
Turkey	51.4	69.9	2.6	3.0	28.5	5.6	.	.

¹ As a percentage of new bond issues. ² As a percentage of outstanding domestic debt. ³ 2001. ⁴ 1999.

Source: Central banks.

Implications of debt composition

How far does the composition of public debt matter for the conduct of monetary policy? It is well recognised that the choice of debt instruments is determined by debt management considerations. The existence of a large variety of sovereign debt instruments is generally seen to enhance the depth of the domestic bond market, facilitating the conduct of monetary policy.³⁹ In some cases, the choice of debt instruments and timing of their issue may also complement monetary policy objectives. For example, inflation-indexed bonds have not only been preferred to lengthen the average maturity structure of the debt by tapping institutions which are willing to hold them, but they have also been increasingly used as an indicator of inflation expectations for the conduct of monetary policy. A similar argument could apply to bonds indexed to the exchange rate to the extent that they lower the risk premium the government otherwise has to pay on non-indexed bonds.

On the other hand, the experience of recent financial crises suggests that a high degree of financial indexation and exposure to foreign financing may constrain monetary policy in times of heightened market uncertainty. For example, while a sharp depreciation of the exchange rate may require an increase in the interest rate, a high concentration of debt instruments indexed to the short-term interest rate and exchange rate is likely to worsen the public debt dynamics. This may undermine fiscal credibility in the presence of an existing fiscal imbalance and thus aggravate financial uncertainty.

³⁹ See, for example, Mohanty (2002).

It is argued that economies with a large unhedged foreign currency debt (in either the public or private sector) are less likely to rely on orthodox policy prescriptions; see Goldstein and Turner (2003). A conventional recommendation in the event of an external demand shock is to reduce the interest rate. However, in the presence of a large currency mismatch, such a policy may induce capital flight and lead to a precipitous fall in the exchange rate, causing widespread bankruptcies in the economy. Nor is raising interest rates to defend the exchange rate likely to be helpful because this may adversely affect growth and further weaken investors who have borrowed in domestic currency. Some point out that the perceived advantage of inflation targeting of permitting greater exchange rate flexibility may be less with a large currency mismatch.⁴⁰ In such circumstances, exchange rate depreciations are likely to have significant contractionary effects through the balance sheet route. For this reason, central banks may still be unwilling to let the exchange rate move even if longer-run inflation expectations are anchored by the inflation targeting regime.

The recent experience of Turkey and Brazil illustrates some of these policy challenges. In Turkey, following the 2001 crisis, the government converted a large part of short-term debts assumed from the financial system (including the central bank) to long-term domestic bonds linked to the exchange rate and short-term interest rates. These swaps resulted in transferring the bulk of market risks from the banking system to the government, worsening the fiscal situation further; see the paper by Binay in this volume. Brazil's experience in 2001 demonstrated a similar problem. While the financial uncertainty made the domestic yield curve steeper, reducing fixed rate debt issuance, the government increased the issuance of dollar-indexed bonds to contain exchange rate expectations.⁴¹ This, in turn, worsened the fiscal situation in the following year as the exchange rate fell and debt service payments on dollar-indexed bonds and foreign currency debts swelled. Similarly, in Indonesia, the recent increase in debt service payments largely reflects the additional servicing cost on indexed bonds (issued following the 1997-98 crisis for restructuring the financial system) arising from the relatively high rates of inflation and currency depreciation.

Long-term interest rates and the role of policy

An important issue is the extent to which the recent monetary easing has been able to bring down long-term interest rates. As Table 12 shows, nominal long-term rates have fallen in all countries (covered in the table) during 2001 and 2002, reflecting the reduction in the short-term interest rates. Apart from lower policy rates, long-term interest rates in some countries (for example India) have also been driven by a large increase in the purchase of bonds by banks, a development attributed to an increased flight to quality brought about by economic uncertainty. At the same time, despite an easier monetary policy the spread between the short and long rates has widened in many Asian economies (see Annex Table A3). This may indicate some weakening of the influence of monetary policy on long-term rates. The widening term spreads may also reflect other factors, including future growth and inflation prospects and a shift in the term premium.

Another aspect is that the fall in the long-term real interest rates has been much smaller than that in the nominal rates. Ex post long-term real interest rates (adjusted for actual inflation), in fact, rose in many countries in 2002 (Table 13). The decline in inflation is probably one offsetting factor to monetary easing. Moreover, to the extent that expected and actual inflation diverge, the ex ante real rates could be much different from ex post rates. Given that expected inflation adjusts gradually, it could be argued that this factor might delay the accrual of some of the obvious advantages of low inflation.

⁴⁰ See Eichengreen (2002). He argues that "inflation targeting and a hard peg are basically indistinguishable" in an economy with large unhedged dollar liabilities.

⁴¹ The outstanding dollar-indexed bonds peaked at 33% of total debt in October 2001 from 22% in December 2000, reflecting both the net issuance and the exchange rate depreciation; see Figueiredo et al (2002). The paper by Goldfajn in this volume points out that exchange rate depreciation alone enlarged Brazil's debt/GDP ratio by 14 percentage points between 1994 and 2002, accounting for much of the recent fiscal deterioration.

Table 12
Nominal interest rates¹

	Short-term ²			Long-term ³		
	2000	2001	2002	2000	2001	2002
Asia⁴	5.8	4.8	3.6	8.5	7.3	6.5
Hong Kong	6.2	3.6	1.8	7.4	6.0	5.3
India	9.0	7.5	6.0	11.1	9.3	7.5
Korea	5.1	4.7	4.2	9.4	7.1	6.7
Malaysia	3.2	3.3	3.2	5.9	4.2	4.2
Philippines	10.8	9.8	7.2	15.5	15.9	13.4
Singapore	2.4	1.9	0.9	4.4	3.6	3.6
Thailand	3.6	2.9	2.1	6.2	5.1	4.2
Latin America⁴	12.7	9.2	5.7	6.5	5.9	4.7
Chile	9.2	6.2	3.9	6.4	5.2	4.1
Mexico	16.2	12.3	7.5	6.6	6.6	5.4
Central Europe⁴	11.5	10.7	7.2	10.4	9.4	7.6
Czech Republic	5.2	5.1	3.6	8.0	7.4	6.4
Hungary	11.0	10.7	8.9	9.1	8.5	7.8
Poland	18.3	16.4	9.1	14.0	12.3	7.9
Israel	9.3	6.8	6.4	6.7	6.0	5.5
South Africa	10.4	10.0	11.9	13.8	11.3	12.1
<i>Memo:</i>						
United States	6.2	3.9	1.7	6.0	5.0	4.6
Euro area	4.1	4.4	3.3	5.2	4.5	4.3
United Kingdom	5.9	5.0	3.9	5.3	5.0	4.9

¹ Annual average. ² Three-month interest rate. ³ Ten-year or nearest long-term rate. ⁴ Simple average of the countries shown.

Sources: Bloomberg; Datastream; national data.

Nevertheless, it remains unclear what is driving long-term interest rates. Movement of long-term interest rates may depend on several factors. The impact of monetary policy on long rates is said to depend not only on the current policy rate but also on expectations about future policy rates. Some argue that, since the term structure of interest rate incorporates investors' best forecast about future short rates, the degree of persistence (moving in steps in one direction) in the policy rate could be a significant determinant of long rates.⁴² Another view is that aggressive moves (a few large changes in one direction) in the policy rate are more effective in influencing the long-term rates because they provide a strong indication of the central banks' intention and hence have greater influence on investors' confidence.

Evidence suggests that fiscal policy has been a major determinant of long-term rates in industrial and emerging economies. Much of this impact has been explained through the risk premium associated with long-term sustainability of fiscal policy as well as changes in saving and investment balances due to fiscal policy; see Group of Ten (1995). Another important factor has been the greater arbitrage opportunities brought about by international capital flows. According to this view, uncovered interest

⁴² See, for example, Roley and Sellon (1995).

parity conditions and hence exchange rate expectations explain much of the movement in long-term interest rates in countries with a relatively open capital account.

Table 13
Real interest rates¹

	Short-term ²			Long-term ³		
	2000	2001	2002	2000	2001	2002
Asia⁴	3.9	2.2	2.6	6.7	4.7	5.5
India	3.7	2.2	3.7	5.8	4.0	5.4
Hong Kong	9.9	5.2	5.2	11.1	7.6	8.7
Korea	2.9	0.6	1.3	7.1	3.0	4.1
Malaysia	1.7	1.9	1.4	4.3	2.8	2.3
Philippines	6.5	3.7	4.0	11.2	9.8	10.3
Singapore	0.9	0.8	1.4	2.9	2.5	4.1
Thailand	2.0	1.2	1.6	4.7	3.5	3.9
Latin America⁴	6.8	4.3	2.0	0.8	1.0	1.1
Chile	5.4	2.6	1.5	2.6	1.6	1.9
Mexico	8.3	6.1	2.4	-1.1	0.4	0.3
Central Europe⁴	3.5	4.2	4.1	2.4	2.9	4.1
Czech Republic	1.3	0.4	1.7	4.1	2.7	4.1
Hungary	1.2	1.4	3.3	-0.7	-0.7	2.2
Poland	8.1	10.8	7.3	3.9	6.8	6.1
Israel	8.2	5.7	0.6	5.6	4.9	0.2
South Africa	5.0	4.3	2.2	8.4	5.5	3.3

¹ Interest rates minus consumer price inflation; annual average. ² Three-month interest rate. ³ Ten-year or nearest long-term rate. ⁴ Simple average of the countries shown.

Sources: Bloomberg; Datastream; national data.

Others argue that much depends on the policy mix.⁴³ According to this view, a looser monetary policy may not be successful in keeping the long-term rates lower in the presence of a high level of public debt. Hence, a policy mix favourable to long-term interest rates would be to move towards a tighter fiscal and looser monetary policy. The argument is that, while a sound fiscal policy would encourage saving, driving down the long-term real interest rate, monetary policy anchored on price stability would smooth much of the short-term movement of the real interest rate.

Table A4 in the Annex shows what central banks in emerging economies regard as the plausible determinants of long-term interest rates. These include the monetary policy rate, fiscal policy, inflation and exchange rate expectations and world interest rates, although the extent to which each of these factors dominates the long-term rate varies across countries. For example, in Korea, the influence of monetary policy on long-term rates has increased recently with the shift to an interest rate oriented operating procedure. Korea's experience also suggests that, while inflation has a major impact on the interest rate, this effect is significant with a lag of about one year. Moreover, the spread between the short and long rates explains a large component of the business cycle in recent years. In India, monetary policy influence on long-term rates has increased with the central bank shifting to an active

⁴³ See Allsopp and Glyn (1999).

liquidity management policy. Fiscal and inflation expectations seem to explain a large part of long-term interest rate movements in Hungary. Expectations of future EMU accession as well as a time-varying currency premium have also been important. In relatively open economies, such as Singapore, international interest rates play a more important role in the determination of the long-term interest rate.

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Annex

Table A1
Budget deficits adjusted for the cycle and other factors

	Adjustments made for the cycle	Adjustments made for the temporary impact of other factors	Fiscal impulse calculation	Other
China	Yes	Yes (temporary cancellation of fixed investment tax)		
Hong Kong	No	No	No	No
India		Yes		
Indonesia	No	Yes	Yes	
Korea	Yes (OECD structural balance concept)	No	Yes (IMF fiscal impulse concept)	
Malaysia	Yes, (cyclically neutral balance using 1995 as the base year)	None	Yes	
Singapore		In 1997, compensation to telecommunications company and payment for land acquisition In 2000, further compensation to telecommunications company	Yes	
Thailand	No	No	Yes	No
Brazil	No	Yes; copper price	No	
Chile	Yes	No	No	
Colombia	Yes	Yes, exclusion of non-recurrent revenues from the public balance	Fiscal impulse calculated from the indicator of fiscal impact on aggregate demand (IMF, OECD, Dutch impulse measures)	Fiscal impact on aggregate demand
Mexico	Yes (estimation of structural budget)		Yes (IMF fiscal impulse concept)	No
Peru	Yes (revenues only)	No		
Czech Republic	No	No	No	Adjustments of transformation institution expenditures and privatisation revenues
Hungary	No	Extraordinary expenditures, which have no impact on demand at the time of their recording in the budget	Calculated as the yearly change of the SNA primary balances	
Poland	Yes (via estimated output gap)	No	Yes (change in the composition of expenditure, income and government financing taken into account)	No
Russia	No	Creation of a "Finance reserve" in the federal budget to accumulate additional revenue for future external debt redemption		
Israel	No	No	No	No
South Africa	No	No	No	No
Turkey	No	No	No	No

Source: Central banks.

Table A2

**Maturity distribution of outstanding government bonds in 2000 by remaining maturity
(% of outstanding debt)**

	Less than 1 year	Between 1 and 5 years	Between 5 and 10 years	Over 10 years	Average maturity (years)
Hong Kong	74	20	6	–	1.2
India	4	36	37	23	...
Indonesia	4	34	62	–	6.0
Korea ¹	6	77	13	4	5.2
Malaysia	18	52	20	10	4.7
Philippines	9	27	30	34	14.7
Singapore	31	38	31	–	4.1
Thailand	15	48	37	...	...
Brazil	42	42	6	10	2.5
Chile	45	20 ²	35 ³	–	...
Colombia	30	42	20	8	3.5
Mexico	58	40	2	–	1.5
Peru	20	56	42	–	6.4
Hungary	44	45	11	–	2.3
Poland	20	71	9	–	2.6
Israel	18	54	27	2	11.0 ⁴ and 3.6 ⁵
Saudi Arabia	7	34	30	29	6.0
<i>Memo</i>					
United States ¹	21	62	–	17	...
Japan ¹	5	8	78	9	...
Germany ¹	2	32	61	5	...
United Kingdom ¹	7	29	34	30	...

¹ Distribution by original maturity. ² Maturity between one and three years. ³ Maturity over three years. ⁴ International.
⁵ Domestic.

Source: Central banks.

Table A3

Spread and correlation between long- and short-term interest rates

	Spread ¹			Correlation ²
	2000	2001	2002	2000/02
India	2.02	1.82	1.47	0.93
Hong Kong	1.18	2.38	3.47	0.86
Korea	4.24	2.35	2.41	0.66
Malaysia	2.67	0.91	0.94	-0.53
Philippines	4.67	6.12	6.21	0.82
Singapore	2.01	1.65	2.68	0.56
Thailand	2.64	2.28	2.09	0.54
Chile	-2.81	-1.02	-0.23	0.79
Mexico	-9.50	-5.67	-2.03	0.86
Czech Republic	2.81	2.32	2.57	0.63
Hungary	-1.96	-2.23	-1.08	0.81
Poland	-4.26	-4.07	-1.16	0.96
Israel	-2.59	-0.77	-0.62	0.86
South Africa	3.40	1.29	-0.13	-0.16

¹ Average long-term (mostly 10-year) government bond rates minus average short-term (mostly three-month) interest rates. ² Between short and long rates; average over the period calculated on levels.

Sources: Bloomberg; Datastream; national data.

Table A4

Long-term interest rate determinants

	Benchmark	Determining factors		
India	10-yr SGS	Overall liquidity conditions	Combined fiscal deficit	External capital flows
Indonesia	Long rates on credit and time deposit	Interbank overnight rate	Deposit insurance premium	External sector
Korea	3-yr T-bond yield	Policy rate	Inflation expectations	Anticipations regarding business cycle and liquidity levels
Malaysia	Yield on long-term MGS	Demand and supply of money market paper	Central bank policy rate	External sectors
Singapore	10 and 15-yr SGS	Foreign rates		
Thailand	2 to 18-yr T-bond yields	Growth and inflation expectations	Central bank policy rate	Expected monetary policy actions
Chile	8 and 20-yr inflation-indexed papers	Expected monetary policy	External conditions	
Mexico	10-yr fixed rate bond	Monetary policy instruments	Public sector borrowing requirements	Expected inflation, country risk and external interest rates
Peru	Bond yield	International rates	Depreciation expectations	
Hungary	10-yr T-bond yield	Expectations of budget deficits	Expected inflation path	Time-varying currency risk premium
South Africa		Inflation expectations	Fiscal policy	Prudential requirements and exchange control legislation; private sector investment levels

Source: Central banks.

Central bank balance sheets and fiscal operations

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1. Introduction

For a private corporation, or a commercial bank, accounting data are a means by which management accounts to shareholders for its performance. In these cases performance is measured by profits and the net worth of the firm. The interpretation of accounting statements is more complicated for central banks, as their main objective is not to maximise profits but to accomplish social goals such as low inflation and a stable financial sector. Striving for these goals will affect the central bank's accounts but the accounts will not give direct information on its performance in achieving them.² However, central bank balance sheets may reveal a lot about the institutional environment affecting the conduct of monetary policy, including the relative degree of central bank independence.³

This paper reviews how a central bank's involvement in activities such as foreign exchange intervention and restructuring banking systems at the behest of the government may affect its balance sheet and the possible implications. Section 2 argues that if such operations leave the central bank with low, or even negative, capital its (perceived) independence and ability to conduct monetary policy may be affected. Section 3 sets out some stylised facts about central banks' balance sheets, and highlights the role of seigniorage in increasing capital and that of the main quasi-fiscal activities in reducing capital.

2. Does capital matter for a central bank?

Central banks are not like other banks. Their sole right to issue domestic currency gives them a franchise value not captured by conventional measures of central bank capital.⁴ They are not concerned with profit maximisation. Their equity is generally not traded. They are implicitly backed by the government's ability to raise taxes. The government could always recapitalise the central bank by issuing bonds, and even sell these bonds to the central bank itself - although financial markets may take a dim view of such a transaction. Low capital may be desirable, as there may be better uses for public funds. Furthermore, it might be argued that a low-capitalised central bank will have to be more circumspect in lender of last resort operations and so less moral hazard will arise. Table 1 shows that some central banks, in both advanced and emerging economies, operate with very low capital ratios.

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² Sullivan (2000) argues that profits may be relevant for certain aspects of central bank activity, such as the provision of banking services to governments, and that accounting information on costs is relevant for assessing how efficiently the central bank has been achieving its goals. However, cash flow statements do not convey much useful information about central bank operations. Breuer (1999) notes that successful intervention by central banks to stabilise foreign exchange rates should be profitable, as it involves buying low and selling high.

³ The most common measures of central bank independence in econometric studies refer to legal status (appointment procedures, terms of governors, role of board, statutory objectives, limits on lending to governments, etc), the turnover of governors and expert opinion. None of the major studies use central bank balance sheet data to construct their measures.

⁴ Stella (1997) interprets this franchise value plus the book value of capital as the "net worth", that is, the value investors would be willing to pay if the central bank were put on the market. Fry (1993) estimates that an average central bank maximising the steady state level of seigniorage would have a net worth of 100% of GDP. Pringle (2003b) suggests the true value of the Federal Reserve System is several times the market capitalisation of Microsoft, the world's most highly valued company. On the other hand, Blejer and Schumacher (2001) focus on explicit or implicit contingent liabilities of central banks to argue they really have negative net worth.

Fukui (2003) opines that in practice central banks with low or negative capital have experienced difficulties in conducting monetary policy. Approaching the government frequently would compromise its (perceived) independence, and may even reduce confidence in the currency. Furthermore, as the public may (rightly or wrongly) regard negative net worth as indicating the central bank is poorly run, it may erode the bank's general reputation; see Vaez-Zadeh (1991).

In some countries, the desired capital of the central bank is made explicit. For example, recent legislation in Indonesia prevents the transfer of profits to the government until the central bank builds its capital up to 10% of its monetary liabilities. The Reserve Bank of India aims at capital and reserves of 8% of assets. In general, the desirable amount of capital depends on the shocks to which the balance sheet is subject. This in turn depends on the functions allocated to the central bank (more capital if it holds the international reserves) and the policy regime (more capital if defending a peg). Blejer and Schumacher (1998) suggest central banks should use an explicit "value-at-risk" approach relating capital to the volatility of factors affecting the various components of the balance sheet, and the Reserve Bank of New Zealand has done so; see Sullivan (2000).

3. Key influences on central bank balance sheets

A typical central bank balance sheet

A generic central bank has a balance sheet composed of domestic currency liabilities and a varying mix of domestic and foreign currency assets (Table 1). A central bank may have quite low subscribed capital but have built up substantial reserves from retained earnings or put aside large specific provisions (Table 2); the arrangements governing the extent to which profits are used to increase central bank capital or paid to governments are summarised in Table 5. The central bank's main liabilities are often termed "base money".⁵ The most important liability is often currency (notes, and in some cases coin, on issue). Banks generally hold settlement balances with the central bank, which may be quite small. They are often required to hold minimum deposits, generally calculated as an average over a fortnight or month, which may or may not be remunerated at something like a market rate (Table 4).⁶ Central banks are often bankers to governments and in Hong Kong SAR, Israel and Singapore government deposits are a large proportion of liabilities.

Some central banks have issued substantial amounts of their own securities as an instrument for monetary policy. One advantage of this is that by not needing to hold government securities they may avoid the temptation of (indirectly) lending to governments. It may also be a way of funding a temporary increase in expenditure without having to go the government for funding, and central bank paper can usually be issued at very close to yields on government paper. However, it may not be popular with governments as central bank paper could crowd out government issues. It could also lead to increased pressure to lend to governments if the central bank can fund such loans through issue of its own paper. Central bank paper constitutes around half the central bank's external liabilities in Korea and over a fifth in Hong Kong, Hungary, Mexico and Poland (Table 1). In Hong Kong the securities were issued to establish a benchmark yield curve to help develop the corporate bond market as well as an instrument for open market operations, given that successive government surpluses meant there were no government bonds on issue. A number of central banks use their own paper for repo operations and collateralised lending; see Mohanty (2002).

⁵ Terms such as "high-powered money", "outside money" and "the monetary base" are also used, virtually interchangeably.

⁶ Originally the required reserve ratio was seen as a monetary policy tool (in the money base/money multiplier framework), but these reserves are now viewed more as a prudential measure and a tax on banks, although they may facilitate the operation of monetary policy.

Table 1
Central bank balance sheets
 % to GDP, end-2002

	Liabilities							Assets					
	Currency	Banks' required deposits	Other bank deposits	Central bank securities	Government deposits	Other liabilities	Capital, reserves etc	Foreign assets	Loans to government	Government bonds	Claims on financial institutions	Claims on private sector	Other assets
Hong Kong	9.8	0.0	0.0	9.7	24.1	5.8	25.8	70.2	0.0	0.0	5.0	0.0	0.0
India ¹	11.6	2.6	0.1	0.0	0.0	1.0	5.0	12.0	0.6	6.0	0.3	0.0	1.4
Indonesia	6.0	2.3	0.0	0.0	6.9	20.5	2.0	18.1	17.2	0.0	1.0	0.5	0.9
Korea	4.1	2.5	3.2	14.1	1.9	2.9	1.4	23.1	0.2	0.9	5.0	0.1	0.8
Malaysia	7.6	4.2	15.4	3.4	3.9	2.5	8.4	36.7	0.0	0.0	0.8	2.2	5.6
Philippines ²	5.6	2.7	0.0	0.0	2.5	15.2	4.5	21.1	2.0	4.5	0.6	0.0	2.2
Thailand	10.3	0.9	0.1	0.0	1.0	6.5	30.0	31.2	0.4	1.8	5.6	0.0	9.7
Brazil	3.8	6.0	0.0	5.1	6.7	15.3	0.4	11.7	0.0	20.5	0.0	1.7	3.4
Mexico	4.3	2.5	0.0	3.7	1.4	0.7	0.6	8.1	0.0	0.0	2.2	0.0	2.8
Peru	3.3	5.5	0.1	1.0	5.8	3.0	0.4	17.1	0.0	0.2	0.1	0.0	1.7
Czech rep. ³	10.1	23.5	0.0	0.0	0.5	2.4	-2.1	30.6	0.0	0.0	0.0	0.0	3.7
Hungary	7.7	2.2	3.9	8.4	0.5	2.7	0.2	16.9	6.0	1.0	0.1	0.0	1.6
Poland ²	6.1	1.6	0.0	2.8	1.4	1.5	5.2	16.5	0.0	0.9	1.0	0.0	0.2
Israel	3.7	10.3	0.0	0.0	10.7	1.1	0.6	23.0	1.0	1.2	0.6	0.0	0.5
SouthAfrica	3.6	1.5	3.4	0.7	0.1	3.6	0.0	6.0	0.0	1.3	1.1	0.0	4.4
Turkey	2.8	3.3	1.6	0.0	1.5	19.2	1.0	15.9	0.0	10.5	0.1	0.0	2.9
Australia	4.6	0.0	0.1	0.0	1.3	1.7	0.8	5.6	0.0	2.8	0.1	0.0	0.1
Canada	3.6	0.0	0.1	0.0	0.1	0.0	0.0	0.1	0.0	3.5	0.0	0.0	0.2
Euro area	5.6	0.0	4.0	0.1	0.6	2.2	2.2	5.3	0.3	1.2	5.6	0.2	1.9
Switzerland	9.5	1.1	0.0	0.0	1.7	0.3	16.7	12.8	0.0	0.6	0.5	0.0	15.3

¹ June 2002. ² November 2002. ³ April 2003.

Source: Central banks; BIS estimates.

The central bank generally has a mixture of foreign currency (“international reserves”) and domestic currency assets (mostly government bonds and some deposits with banks). Swapping between these two types of assets can be an important means of influencing the exchange rate. Domestic monetary policy is often implemented by sales and purchases of the domestic currency assets. Occasionally, as in Brazil and Malaysia, central banks also have significant claims on the non-bank private sector.

Table 2
Components of central bank capital
Percent to total central bank assets

	Emerging economies ¹			Advanced economies ²
	Median	Maximum	Minimum	Median
Paid-up capital	0.1	6.2	-4.0	0.0
Reserves	2.0	18.6	-15.2	2.4
Revaluation accounts	0.0	16.6	-7.4	5.7
Provisions	0.0	2.3	0.0	0.0
Retained profits	0.0	31.7	-2.5	0.0
Total	8.8	31.7	-15.2	15.3

¹ Argentina, Brazil, Bulgaria, Chile, Croatia, Czech Republic, Hong Kong SAR, Hungary, India, Israel, Korea, Malaysia, Mexico, Poland, Russia, Singapore, South Africa, Thailand and Turkey. ² Australia, Austria, Belgium, Canada, Denmark, ECB, Finland, France, Germany, Ireland, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom and United States.

Source: compiled from most recent central bank annual reports as at May 2003.

Recent trends in central bank balance sheets

Central bank assets have tended to fall relative to GDP over the past two decades. However, there are important exceptions. A number of Asian economies concluded after the Asian crisis that it was prudent to hold rather larger international reserves; see Hawkins and Turner (1999).⁷ They have chosen to hold these reserves on the central banks’ balance sheets. Some of these economies have floating exchange rates, so the reserves are not there to implement a peg. But they may provide assurance that excessively large depreciations could be resisted or speculative attacks repelled without resorting to extremely high interest rates.

To the extent that the international reserves are a form of national precautionary saving, rather than directed towards exchange rate objectives, it might be argued that they should be held by a separate government agency. This could be akin to the agency in Norway that holds some of the proceeds from oil sales or the Land Fund in Hong Kong, which held the proceeds from property sales until 1998. There are some countries, such as Canada, where the international reserves are at least partly held by authorities other than the central bank. But in emerging economies, the central bank may bring the most competence, independence and transparency to the management of such funds.

Factors affecting the capital of an independent central bank

While most central banks’ primary focus is monetary policy, they are also involved in a range of other activities. Some of these, such as bank supervision, contribute to operating costs but have no other

⁷ In Pringle and Carver’s (2003) survey, over 90% of central banks expected reserves to be built up further.

impact on their balance sheets. Most central banks no longer make loans to the private sector. The main means by which an independent central bank's capital is increased is through seigniorage, and it is reduced by distributions of profits to the government. These influences are discussed further below.

Seigniorage

Seigniorage is the profit that accrues to central banks from their being in a special position of paying no or low interest on two of their main liabilities: currency and banks' deposits with the central bank. Seigniorage arising from the issue of currency (Table 3) is calculated as a market interest rate (at least a potential rate of return on central bank assets) multiplied by currency on issue (ignoring costs of printing the currency, as these are relatively small in all but the smallest economies). Currency seigniorage has declined in a number of emerging economies as inflation rates have fallen.

An argument fashionable some years ago that there was a (high) optimal rate of inflation, and thus seigniorage, based on the costs (including distortions) of other taxes, has fallen out of favour.⁸ Such a high inflation rate would have adverse consequences for economic efficiency.

Furthermore, in the longer term people will move away from holding inflation-prone currencies, so the short-term increase in seigniorage revenue may be more than offset by a longer-term decline. Nowadays central banks aim at low inflation and accept that seigniorage is likely to remain low.

Table 3
Currency seigniorage/GDP (%)

	Average early 1980s	Average 1999-2001
China	1.3 ¹	0.7
Indonesia	0.4	0.3
Korea	0.3	0.2
Philippines	1.4	0.6
Singapore	0.4	0.1
Thailand	0.3	0.1
Brazil	3.9	0.8
Mexico	5.1	0.3
Hungary	1.9 ²	0.5
Poland	1.4 ²	0.3
Russia	5.1 ²	1.4
South Africa	0.2	0.2
Advanced economies ³	0.2	0.1

¹ 1985-90. ² 1990-95. ³ Simple average of Australia, Canada, Switzerland and the United Kingdom.

A second type of seigniorage arises from the funds banks hold with the central bank. As required reserve ratios have been reduced over time, and closer to market rates have been paid on these compulsory balances, this source of seigniorage has become less important, although it is still higher in some emerging economies than in advanced economies (Table 4).

⁸ Fischer et al (2002) conclude that seigniorage is maximised when inflation reaches 174%. By contrast, their reading of the literature is that economic growth in emerging economies is maximised at inflation rates below 50%, probably below 10%.

Table 4

Seigniorage accruing from banks' balances with central banks

	Required deposits	Interest rate paid on banks' balances with central bank	Banks' balances with central bank ¹ / GDP (%), 2001	Seigniorage/GDP (%), 2001
China	6%	1.9%	27	0.1
Hong Kong SAR	No	Market rate ²	10	None
India	3-5.5%	6.5% (at bank rate)	4	0.1
Indonesia	5%	None	4	0.6
Korea	2.9%	None	3	<0.1
Malaysia	4%	None	17	0.5
Philippines	11% ³	4% (on 40% of required deposits)	4	<0.3
Singapore	3%	None	5	0.1
Thailand	6%	None	3	0.2
Brazil	0-45% ⁴	9.8%	6	0.6
Chile	3.6-9.0% ⁵	Half of previous month's inflation rate	35	
Colombia	2.5-13.0%	75-100% of inflation target	2	0.1
Mexico	None	Market rate ²	2	None
Peru	6%	None on required deposits; 2% on other	10	1.0
Czech Republic	2%	Repo rate on required deposits	16	<0.8
Poland	4.5%	None	4	0.6
Russia	7-10%	None	4	0.5
Israel	0-6%	None on required deposits; <market rate on excess	40	<1.0
South Africa	2.5%	None	2	0.2
Turkey	6%	40%	8	1.5
Australia	No	Cash rate less 25 bp ²	1	<0.1
Euro area	2%	Market rate	5	None
Japan	0.05-1.2%	None	4	<0.1
Switzerland	No	None	2	<0.1
United States	3-10%	None	1	<0.1

¹ Reserve money (line 14) less currency (line 14a) from *International Financial Statistics*. ² On settlement balances. ³ Only applies to commercial banks, not rural and cooperative banks. ⁴ 45% of the average daily balance of demand deposits exceeding BRL 2 million and 10% of the balance of time deposits exceeding BRL 30 million. ⁵ Depends on currency and maturity of deposits.

Sources: Mohanty (2002); central banks; IMF, *International Financial Statistics*; BIS estimates.

Expenditure cuts or revenue increases

A central bank may also affect its capital position by generating more net revenue. It can pay less on banks' balances with it or charge more for services such as note distribution, bond registries or banking facilities for government. Or it could raise reserve requirements on banks, as has been done in the past in Brazil and the Philippines. If pushed too far, however, this could amount to excessive taxation of the financial system and inhibit its efficient development and growth.

Central bank transfers to government and capital injections

Central bank capital will be reduced by transfers to the government (Table 5). Governments, as the “shareholder”, are entitled to receive part of any accumulated profits of the central bank, after a prudent proportion of any such profits has been put aside for the capital and reserves of the central bank. There may be a rule governing the size of such transfers, it may be at the discretion of the central bank, at the discretion of the government, or a matter of negotiation between them (Table 5). Most central banks distribute over half their profits; see Kurtzig and Mander (2003) for a further discussion. In a few countries central banks also pay tax to the government; see the paper by Tetangco in this volume for more on this.

Table 5
Central bank profits and the government

	How transfer of central bank profits to government is determined	Size of transfers/GDP (%)				
		1997	1998	1999	2000	2001
China	Government decides	np	np	np	np	np
Hong Kong SAR		0.8	2.4	3.7	1.5	0.2
India	CB decides but government may overrule	0.4	0.3	0.5	0.5	0.4
Indonesia	By law	0.1	0.0	0.0	0.0	0.0
Korea	90% of profits	0.2	0.3	0.4	0.2	0.7
Philippines	75% of distributable profits	0.4	0.2	0.1	0.1	0.1
Singapore	Minimum shares to reserves and government; CB decides on rest	1.4	1.7	1.3	1.3	1.7
Thailand	25% of profits to reserve, 90% of remainder to bond redemption fund and 10% to government	0.3	0.0	0.0	0.0	0.0
Argentina	By law	0.1	0.2	0.2	0.3	0.1
Brazil	By law	0.0	0.0	0.0	0.0	0.1
Colombia	By law	0.1	0.1	0.8	0.3	0.8
Mexico	Profits transferred after maintaining real capital	0.0	0.0	0.0	0.0	0.0
Peru	25% of profits, by law	np	np	np	np	np
Czech Republic	Legislature decides CB budget	0.0	0.0	0.0	0.0	0.0
Hungary	Based on average profits of previous years	0.0	0.4	0.2	0.1	0.2
Poland	<98% of profits, by law	0.2	0.1	0.4	0.7	0.4
Russia	50% of profits	0.1	0.0	0.0	0.0	0.1
South Africa	90% of profits, by law	0.1	0.1	0.0	0.0	0.0
Turkey	20% to reserves, then 6% dividend, by law	0.1	0.1	0.1	0.2	0.3
Australia	By government, consults with CB	0.4	0.3	0.4	0.5	0.2
Canada	All transferred	0.2	0.2	0.2	0.2	0.2
Euro area	CB decides	...	...	...	0.0	0.0

Notes: np = not published; CB = central bank.

Sources: Central banks; IMF, *International Financial Statistics*.

There is an asymmetric aspect in the vast majority of countries: profits are transferred to governments but losses are met by reductions in capital and reserves. This may present a problem for central banks now that most mark to market.⁹ While in the longer term the differential between domestic and foreign interest rates may offset exchange rate movements, over an annual accounting period exchange rate movements can be volatile, generating valuation losses in some years and gains in others. One approach to this problem is to transfer extraordinary profits to reserves before making a distribution to the government.

It could be argued that *all* the current year's profit should be transferred to the government (after some rule-based provisioning) and *only* the current year's profit. A discretionary profit distribution might be regarded as akin to the central bank providing credit to the government, which, as shown in Table 6, is expressly prohibited in many countries.

Reducing transfers to government will only gradually rebuild the balance sheet. For example, the paper by Marshall in this volume refers to a period of several decades. A faster result would require a capital injection by the government. A dramatic example of recapitalising a central bank occurred in the Philippines in 1992, when a new central bank was created to have a clean start after the previous central bank had incurred large bad debts.

Central banks as bankers to government

Central bank lending to government

A survey of central banks by the BIS in 1999 found that the majority were not required, and often not allowed, to lend to governments, either by legislation or written agreements with their government. Particularly strong prohibitions exist in Brazil, Chile, Peru and Poland, where lending to the government is precluded by the constitution. Table 6 shows the recent situation, although of course there may be cases where the reality differs from the written provisions. Furthermore, these prohibitions may be circumvented by the central bank lending to banks and the government borrowing from them; Stasavage (1997) cites instances of this in Africa. The situation would have looked quite different a decade ago, when lending to governments was quite a common practice.

It may be inappropriate to ban completely central bank lending in developing countries with very small financial sectors as this might prevent the government from smoothing temporary gaps between expenditure and revenue. But it is often argued that such lending should be limited and at market rates (as determined by the central bank); see Cottarelli (1993) for a discussion on setting such ceilings.

Involvement in the government bond market

The same general arguments against the central bank making loans to governments also apply to buying bonds issued by it, particularly if at below market rates. When the government bond market is not very deep and budget deficits are high, it may be difficult for central banks to avoid some involvement. As the paper by Mohan in this volume points out, being both debt manager and monetary authority, the Reserve Bank of India has been supporting the government's borrowing programme but combines such operations with an active liquidity management operation to avoid adverse monetary implications. In some emerging economies, it is regarded as desirable for central banks to make markets in government bonds in order to develop the markets. But in others, central banks stay away from this activity to avoid being caught with large holdings of government securities; see Al-Jasser and Banafe (2002).

Central banks may be involved in the government bond market as a cashier or registrar. This need not involve any significant impact on the central bank balance sheet, or conflict with central bank independence, so long as it is clear that the central bank is not expected to support prices or transact to ensure an orderly market. And there may be advantages to the central bank having such a role, as

⁹ Pringle (2003a) points out the IMF is pressing central banks to use international financial reporting standards which require marking to market, although his own opinion is that it would be better to develop a specific standard for central bank accounting. Courtis and Mander (2003) provides a number of papers on central bank accounting issues.

the information it acquires may facilitate liquidity management. In Asia, central banks are involved in an initiative to develop an “Asian Bond Fund” as an alternative investment vehicle to US Treasuries for investing the large international reserves there; see BIS (2003).

Table 6
Government funding by central banks

	Overdraft	Loan	Purchase of bonds in primary market	Purchase of bonds in secondary market
China	Prohibited by law	Prohibited by law	Prohibited by law	Allowed
India	Limited, bank rate +2%	Short-term	Allowed	Allowed
Indonesia	Prohibited by law	Prohibited by law	Prohibited	Allowed
Korea	Allowed	Limited amounts at rates set by CB	Allowed	Allowed
Malaysia	Allowed	Limited amounts for short term	Allowed	Allowed
Brazil	Prohibited by cons	Prohibited by cons	Prohibited	Allowed
Chile	Prohibited by cons	Prohibited by cons	Prohibited by cons	Prohibited by cons
Mexico	Mandatory, limited at market rate	Prohibited by law	Prohibited by law	Allowed
Peru	Prohibited by cons	Prohibited by cons	Prohibited by cons	Limited
Czech Republic	Limited by law	Limited by law	Limited amount	Only short-term
Hungary	Prohibited by law	Prohibited by law	Limited amount	Limited amount
Russia	Prohibited by law	Prohibited by law	Prohibited by law	
Israel		Limited amounts for short term	Prohibited	Allowed
Turkey	Prohibited by law	Prohibited by law	Prohibited by law	Allowed
Canada	Limited amount	Limited amount at market rates	Allowed	Allowed
Euro area	Prohibited by law	Prohibited by law	Prohibited by law	Allowed
Japan	Prohibited by law	Limited amount	Allowed	Allowed
United Kingdom	Limited	Prohibited by MT	Prohibited by MT	Allowed
United States	Prohibited by law	Prohibited by law	Prohibited by law	Allowed

Note: Cons = constitution; CB = central bank; MT = Maastricht Treaty.

Sources: Van 't dack (1999); central banks.

Government deposits

In their traditional role as banker to governments, central banks have usually accepted deposits from them; see Van 't dack (1999) for a fuller description. Government deposits can sometimes be a large proportion of central bank liabilities, notably in Hong Kong, Israel and Peru; see Table 1. Governments may choose to place deposits with the central bank rather than with commercial banks for a number of reasons. One is competitive neutrality, not wanting to give an imprimatur to one private bank. Another is credit risk; governments know the central bank will not collapse. In some cases, building up the central bank balance sheet, and so potentially the amount of international reserves, may be seen as usefully bolstering the confidence of foreign investors in the economy. Changes in government

deposits affect the money supply and might provide a useful monetary policy tool in those countries where central banks have the authority to shift deposits between their books and those of commercial banks (for example, Canada, Malaysia and South Africa). When Asian economies faced large capital inflows before the 1997 crisis, the depositing of surplus government funds at the central bank helped to sterilise part of the rising stock of international reserves.

Sometimes, government deposits can be a volatile item, leading to problems for liquidity management. For this reason in some countries there are coordination and notification arrangements between the government and central bank governing movements in deposits. There is also the question of the return to be paid on funds placed by governments with central banks, which may hinge on whether the central bank is viewed as a “banker” or a “funds manager” to the government.¹⁰

While it could be argued that running down government deposits has the same effect on liquidity as the central bank lending to the government, in practice it is not seen as involving the same risks to central bank independence or constraints on the operation of monetary policy.

Quasi-fiscal activities of central banks

The government may push the central bank into quasi-fiscal activities that lead to central bank losses. Examples include intervention in foreign exchange markets, issuance of central bank securities to build up foreign reserves, and participation in restructuring of the banking system.

Avoiding such problems has been facilitated by a shift in sentiment in favour of central bank independence. Governments are increasingly willing to tie their own hands and not require central banks to be subservient to their fiscal needs. However, it is relatively easy for governments to proclaim their central banks to be independent when times are good. When times are bad, governments may again be tempted to turn to central banks to help them out of budgetary difficulties. It might be argued that to keep financial markets calm, and bond yields low, not only must central banks *be independent*, they must be *perceived as independent*, and (even more difficult) *expected to remain independent*.

Sterilised foreign exchange intervention

Some central banks have suffered large losses following massive, but futile, intervention in the foreign exchange market.¹¹ Losses are particularly likely if the intervention attempts to defend an exchange rate inconsistent with economic fundamentals and other policy settings and goals. For example, the government may set an exchange rate target band inconsistent with the interest rate settings required to meet an inflation target. In some cases intervention has been an indirect form of subsidy. Quirk et al (1988) cite large losses in forward transactions by central banks, as much as several percentage points of GDP, to protect exporters or unhedged domestic borrowers from losses.

In other cases the government may direct the central bank to hold large amounts of international reserves and the return on these may fall short of the cost of the central bank borrowing to buy them. In Chile, the central bank issued promissory notes in the 1990s to fund accumulation of international reserves with a view to holding back the appreciation of the peso, and the resultant interest expenses are still causing it to make losses; see the paper by Marshall in this volume. In Mexico, the authorities have said they want to limit further accumulation of foreign reserves to prevent such losses mounting further; see Mexico Ministry of Finance (2003). In these cases, it might be better if responsibilities are made clearer, such as by international reserves being at least partly on the government's balance sheet rather than all with the central bank.

The involvement of central banks in reviving the financial system

Central bank balance sheets may be affected by various responses to financial crises (see Hawkins and Turner (1999) for a further discussion of such responses):

¹⁰ In some cases (such as Japan, South Africa and the United States) government deposits are unremunerated.

¹¹ Successful foreign exchange interventions will be profitable but in a survey of central banks by Neeley (2000), none regarded seeking profits as a motive for such intervention.

Extending credit directly to commercial banks. In Indonesia, the central bank provided substantial liquidity support to private banks that suffered deposit runs in 1997-98. Nasution's paper in this volume describes how a dispute with the Indonesian government about this left the central bank having to make large interest payments but being denied some interest revenues it believes it is owed. In Chile, the central bank funded its involvement in bank rescues in the early 1980s by issuing promissory notes. The paper by Binay in this volume describes how the central bank's role in bank restructuring in Turkey led to a significant deterioration in its balance sheet, due to both liquidity injections and purchases of government paper. There are more positive experiences; in Poland, the central bank supported commercial bank restructuring in 1993-97 by purchasing securities issued by banks. The operation was quite small (less than 1% of the central bank's assets) and most of the debt has since been redeemed on originally agreed terms.

Assisting commercial banks by reducing reserve requirements or increasing the interest paid on such reserves. For example, during its mid-1990s banking crisis Lithuania lowered reserve ratios from 12% to 10%. Argentina relaxed reserve requirements to deal with a bank run in 1995; see Salater (2003).

Financing asset management corporations (AMCs) established to buy banks' non-performing loans. AMCs usually fund themselves by issuing government-guaranteed bonds, and central banks may be pressed to buy some of these bonds. They may also be pressed to take an equity stake in AMCs. For example, the People's Bank of China is funding to a substantial (but uncertain) degree the AMCs that hold many of the non-performing loans of the big four state-owned commercial banks. It has offset the potential increase in reserve money from these operations with other transactions. However, the AMCs may be unable to recover enough from selling the assets they are taking from the banks to repay the central bank; see Ma and Fung (2002). Furthermore, the big banks are still not lending on a fully commercial basis and more bad loans may arise.

Financing agencies established to take equity stakes in banks to assist in their recapitalisation. Examples include Danamodal in Malaysia and Fobaproa in Mexico (see Hawkins (1999) and Graf (1999) respectively). Central banks may also be pressed to lend to, or take equity stakes in, such agencies. In Malaysia, the value of the central bank's equity in Danamodal has been preserved as banks have merged and repaid about half the amount provided by Danamodal, and the central bank looks likely to be repaid its investment. However in Mexico the outcome looks less favourable. The Bank of Mexico lent \$100 billion to Fobaproa. The assets of Fobaproa are now being transferred to a new government agency, but it apparently will not take over the debt to the Bank, leaving the Bank with a large loss. In Thailand, bank recapitalisation was financed by special government bonds largely to be repaid from the operating revenues of the central bank; see the paper by Rattakul in this volume.

Support to borrowers. This is less likely to involve the central bank, although in Mexico a programme of subsidised lending to the agricultural sector was transferred to the central bank.

4. Conclusions

Central banks, with their special status, do not need large amounts of capital, although they generally prefer to have at least positive capital and to maintain their independence from government prefer not to have to approach them for funding. Capital can usually be built up as seigniorage exceeds operating expenses. Capital is lowered by payments to the government. With mark-to-market accounting such payments should only be made after a prudent amount of any extraordinary profits are placed in reserves. Most central banks no longer lend to governments. However, governments sometimes press central banks to engage in quasi-fiscal activities such as sterilised foreign exchange intervention and assisting or restructuring financial intermediaries. In some cases such activities have severely eroded central banks' capital. If only for reasons of transparency and accountability, it might be preferable if such activities were instead reflected in the fiscal accounts.

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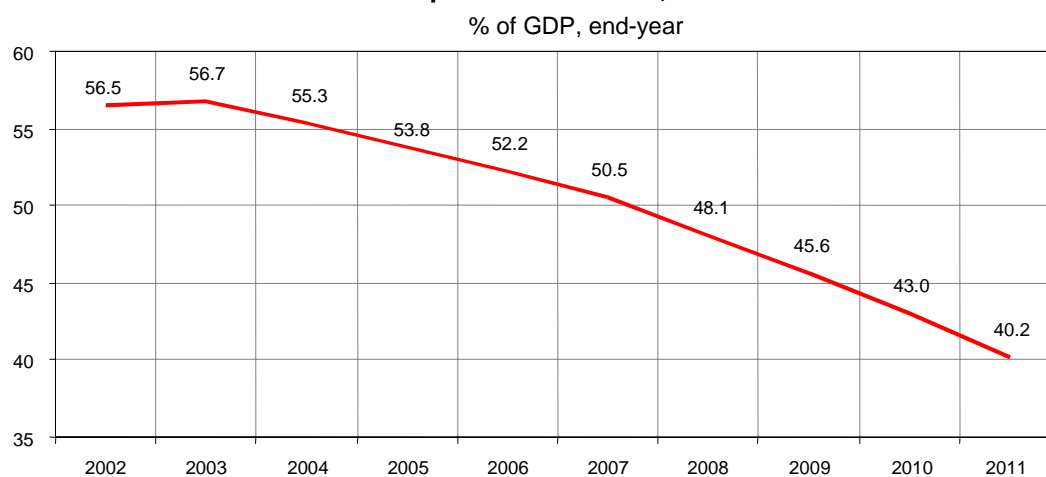
Are there reasons to doubt fiscal sustainability in Brazil?

Ilan Goldfajn¹

1. Introduction

In principle, a simple calculation should provide the answer to the question posed in the title. The current primary surplus of 4.25% of GDP would be more than 1 percentage point higher than the surplus required to stabilise the debt/GDP ratio, assuming a modest 3.5% GDP growth rate and a real interest rate as high as 9%.² Projecting these numbers over the next decade leads to a steeply declining debt/GDP ratio over the years (Graph 1).³

Graph 1
Net public sector debt, 2002-11



However, this simple calculation seems to be insufficient to persuade the sceptics. There is a considerable degree of subjectivity when assessing fiscal sustainability in a real economy. One can always choose sufficiently adverse paths for the relevant variables in the future - GDP growth, real interest rates and real exchange rates - that may lead to different assessments. Debt sustainability exercises should focus on medium- and long-run scenarios, but it is not uncommon to see biased assessments resulting from assumptions that are largely influenced by transitory adverse market swings. In general, neutral assessments are more common in tranquil times.

It is important to discuss fiscal sustainability based on the probability of certain assumptions being borne out. What would be the probability of observing further real exchange rate depreciation in Brazil over the next five to 10 years? What would be the chances that equilibrium real interest rates remain as high as the current ones? Both questions are relevant given the sensitivity of the Brazilian public debt to these variables. This note argues that both probabilities are small when a five- to 10-year time

¹ The author thanks Armínio Fraga for suggesting the topic of this note and for valuable comments; Katherine Hennings, Helio Mori and the Economic Department at the Central Bank of Brazil for substantial input in this note; and Amaury Bier, Joaquim Levy and Pedro Malan for important suggestions. All remaining errors are the author's responsibility.

² The required surplus is $s = (r - g)d / (1 + g) = (0.09 - 0.035) * 0.56 / (1.035) = 3.0\%$ of GDP, where r is the real interest rate, g is the real GDP growth rate and d is the debt/GDP ratio at the end of this year.

³ The faster decline in the debt ratio after 2008 arises because there are no more hidden liabilities to recognise.

frame is considered. The current real exchange rate is probably undervalued, and real interest rates are very high and on a declining trend.

Some analysts tend to extrapolate the past behaviour of Brazil's debt/GDP ratio into the future. This is incorrect since the factors that increased the ratio are non-recurrent. These factors are: (i) recognition of hidden liabilities (the so-called "skeletons") of around 10% of GDP; (ii) weaker public sector primary results until 1998; (iii) significant real depreciation since 1999; and (iv) high real interest rates. All these factors should be excluded in a forward-looking analysis of fiscal sustainability. The fiscal stance improved considerably and there are reasons to expect this policy to continue; real exchange rate adjustment has occurred under the new floating exchange regime; and most of the hidden liabilities have already been identified.

Assessing fiscal sustainability requires also analysing the current institutional framework. This analysis provides the basis to see whether current primary surpluses are sustainable and whether there is scope for further adjustments, if the conditions so require. In this respect, a few important points are worth emphasising. First, although tax reform is desirable for efficiency reasons, there are no structural difficulties in generating revenues in Brazil; on the contrary, overall government tax revenue amounts to around 35% of GDP. Second, fiscal discipline has been achieved at all levels of government due to successful agreements between the federal, state and local governments - all are currently generating structural primary surpluses. Third, the Fiscal Responsibility Law ensures a sound and more permanent fiscal regime. There are borrowing limits so that no government can spend beyond its means. The borrowing capacity of state and local governments was significantly constrained when most state banks were closed. Fourth, there is a constitutional ban on any law that modifies existing financial contracts or that can be interpreted as forced restructuring.⁴ Nonetheless, there is recognition that further reforms are still needed to increase flexibility in spending and reduce the social security deficit.

In what follows, this paper analyses fiscal sustainability in Brazil. It looks closely at the likely outcome of different assumptions. Based on alternative exercises, it argues that, in all probable scenarios, the debt/GDP ratio should at least stabilise, with good chances of it declining over the years. It also argues that if an adverse scenario materialises in the future, further corrections in the balance of revenues and expenditures are feasible, given the nature of the fiscal framework.

Section 2 describes the fiscal accounts in Brazil, covering both the recent data and the institutions. Section 3 presents a basic scenario for the debt dynamics exercise in Brazil and a sensitivity analysis. The effect and probability of a sufficiently adverse path occurring are discussed in Section 4. The concluding section summarises the main arguments.

2. The fiscal accounts in Brazil - facts and institutions

2.1 Nominal deficit and primary surplus

The fiscal results in Brazil have improved significantly in the recent past. The nominal deficit, or public sector borrowing requirement (PSBR), which had reached around 7% of GDP in 1995, improved to 4.6% of GDP in December 2002, as can be seen in Graph 2.

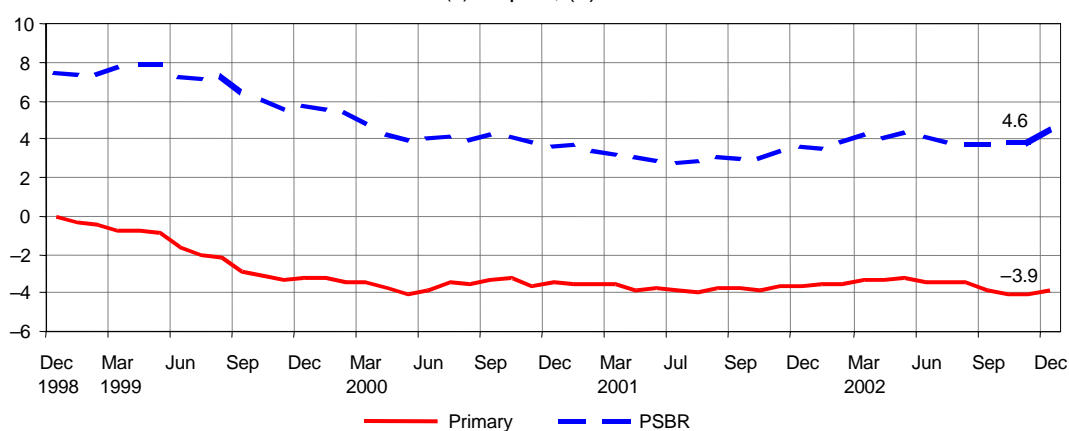
Regarding the primary fiscal results, which consider total revenues and expenditures excluding interest payments, the development is also positive, with the surplus increasing from 0.4% in December 1995 to 3.9% in December 2002. The operational fiscal results - defined as the primary surplus minus real interest rate payments - evolved from a deficit of 4.9% in 1995 to a surplus of 2.6% in December 2002.

⁴ Article 5, item XXXVI, of Brazil's Constitution states that "the law shall not injure the vested right, the perfect juridical act and the *res judicata*". Additionally, Article 1 of Constitutional Amendment 32 of 11 September 2001, which changes Article 62 of the Constitution, establishes that the issuance of Provisory Measures by the President of the Republic is forbidden when it targets the arrestment of goods, private savings or any other financial assets.

Graph 2

Public sector - PSBR and primary results

% of GDP - accumulated 12 months
(-) surplus; (+) deficit

**2.2 Public debt**

Net federal government debt, which includes the national treasury and the social security system, amounted to BRL 567 billion in December 2002, or 36% of GDP. Including the central bank's net debt lowers the resulting net central government debt slightly, to BRL 561 billion, because the central bank has more assets than liabilities.

If one considers the three levels of government, namely the federal, state and local governments, the net general government debt amounted to BRL 860 billion in December 2002 (55% of GDP). Adding this amount to the net debt of the central bank and the public enterprises brings the net public sector debt to BRL 881 billion, or 57% of GDP, as can be seen in Table 1.

Table 1
Net public sector debt, December 2002

In BRL billions

Itemisation	Domestic	External	Total	% of GDP
Net consolidated public debt (A + B + C + D)	654	227	881	56.5
Net general government debt (A + B)	582	278	860	55.2
Federal government (A)	310	257	567	36.4
States and local government debt (B)	272	21	293	18.8
Central bank (C)	53	-59	-6	-0.4
Net public enterprises debt (D)	19	8	27	1.8

Note: Net central government debt = federal government debt + central bank.

Source: Fiscal policy press release, 30 January 2003.

While net general government debt stood at 55% of GDP, gross general government debt reached BRL 1,133 billion, or 73% of GDP, in December 2002. This figure includes the total external debt of BRL 284 billion, and domestic debt of BRL 849 billion, for the federal, state and local governments.

2.3 Gross versus net debt

While the concept of federal gross debt is more frequently used for exercises of debt dynamics because the figures on regional government are difficult to collect and the quality of government assets difficult to measure, in the case of Brazil the net debt concept is quite appropriate. The concept of net public sector debt includes the three levels of government, the central bank and the public enterprises. The consolidation of intragovernmental debt has been established on a sound footing and the nature of the government assets is quite clear.

An important consideration is that the net debt concept takes into account that assets can be used to redeem gross debt. One could always finance deficits by running out assets without affecting the gross debt level. In this respect, the net public debt concept is closer to the true measure of a public sector's net worth, which considers total liabilities deducted from all assets. Incidentally, this is the direction taken by the IMF's new Government Financial Statistics, which proposes a set of statistics that attempt to reflect the true net worth of the public sector.⁵

Liquid assets are particularly suitable for redeeming debt at short notice. But, in a medium-term perspective, less liquid assets clearly ought to be taken into consideration (in symmetry with the accounting of less liquid liabilities, ie government debt that does not mature in the short term). In the case of Brazil, the assets owed to the government included in the net government debt are effectively available for payment of fiscal expenses (Table 2). In particular, the deposits of the social security system, the tax collected by all government levels but not yet transferred to the treasuries, the demand deposits of all levels of government - including the treasury deposits at the central bank - total almost 7% of GDP and are very liquid. Of course, the investments of several constitutional public funds, the resources of the Labour Assistance Fund, other government credits and credit to public enterprises are less liquid, but not necessarily of lower quality.

Table 2

Gross and net general government debt, December 2002

Itemisation	BRL millions	% of GDP
Net consolidated public debt	881,108	56.5
Net general government debt	859,712	55.2
Gross general government debt	1,132,894	72.7
General government credits (assets)	272,683	17.5
Deposits of the social security system	876	0.1
Tax collected (not transferred - float, all government levels)	1,144	0.1
Deposits (all government levels)	102,493	6.6
Investments of financial funds and programmes	38,847	2.5
Labour Assistance Fund (FAT)	67,133	4.3
Other government credit	23,293	1.5
Credit with public enterprises	32,613	2.1
Federal government external credits (collateral)	6,284	0.4

Source: Fiscal policy press release, 30 January 2003.

2.4 Is the recent increase in the debt/GDP ratio a trend?

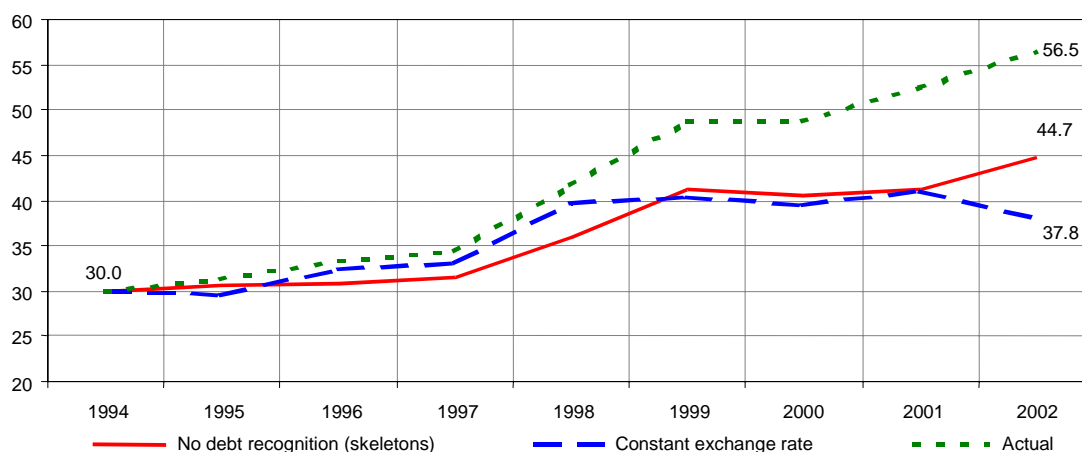
The debt/GDP ratio increased by 26 percentage points from 1994 to 2002. During this period substantial reforms were implemented, leading to inflation stabilisation, increased transparency and debt recognition, and, in the last three years, adjustments in the real exchange rate to improve

⁵ Although the concept of net debt is closer to the definition of net worth than gross debt, it by no means obviates the need for the development of a more appropriate net worth concept.

external accounts. These factors influenced significantly the rise in the debt ratio. For example, the exchange rate depreciation was responsible for an increase equivalent to about 19% of GDP and the recognition of hidden liabilities (“skeletons”) for another 12% of GDP rise. The key point is that these factors are non-recurrent since the adjustment in the real exchange rate has occurred (the real exchange rate is now probably undervalued) and a large share of “skeletons” has been recognised (the rest are factored into the base scenario).

Some counterfactual exercises illustrate the impact of these factors on the debt/GDP path. Assuming that the exchange rate has been kept stable since the end of 1994, and maintaining other factors as actually observed, the debt ratio would have reached 38% in 2002, instead of 57% (see Graph 3). Since the effect of the depreciation is calculated on an accrual basis, part of this effect may actually reverse itself if the exchange rate appreciates back. Similarly, Graph 3 shows that, without recognition of the “skeletons”, debt/GDP would have reached 45% of GDP.

Graph 3
Actual evolution of net public sector debt and hypothetical constant exchange rate and no-skeletons exercise
 % of GDP



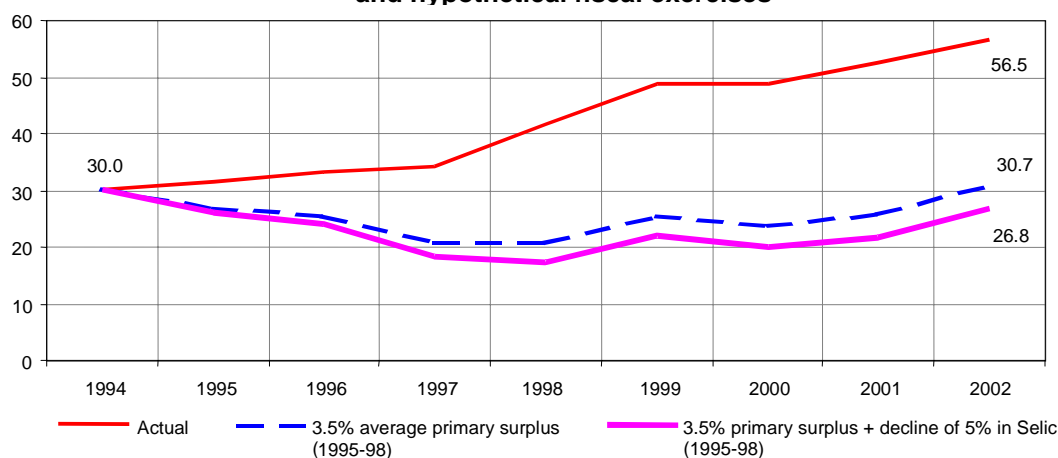
Since 1999, Brazil has produced significant and consistent primary surpluses. One could ask whether the current policy would have been enough to prevent the recent increase in the debt ratio. A positive answer would provide greater comfort that current fiscal policy can stabilise the debt, even under adverse conditions, as the period 1994-2002 was characterised. Under a policy of generating primary surpluses of 3.5% of GDP (significantly lower than today’s 4.25%) since 1995 and maintaining other factors as observed, the debt/GDP ratio would have shown a stabilising path, reaching 31% of GDP in 2002 (see Graph 4). In fact, in such a virtuous context, one would expect lower interest rates. Under the same fiscal policy and a reduction of 5% in the basic interest rates in the period 1995-98, the outcome would be a steeper decline of the debt ratio. The debt/GDP ratio would have reached 27% in December 2002, a reduction of 3% of GDP compared to the 1995 level.

The significant change in the debt/GDP curve is due to the persistence of an appropriate sequence of primary surpluses. The primary surplus produces an initial reduction in the debt amount, and then this reduction becomes steeper with smaller payments of interest and the sequencing of new surpluses. The favourable dynamics allow a considerable decline in the debt ratio over the period.

If the past is a reference for the future, these exercises suggest that, in the absence of major adjustments in the real exchange rate, or the need to recognise hidden liabilities equivalent to almost 10% of GDP, and with the current policy of generating a sizeable fiscal surplus, the debt/GDP ratio is likely to decline in the future.

Graph 4

Actual evolution of the net public debt and hypothetical fiscal exercises



2.5 Institutions

Important institutional reforms have been implemented in the last few years so as to ensure the maintenance of the primary fiscal surplus at an appropriate level and the sustainability of the debt.

First, since 1997 the debt restructuring agreements reached by the federal government with the states and municipalities have contributed to the reorganisation of the finances of these subnational governments. The state governments agreed to commit 13% of their income to servicing their debts, generating surpluses and improving the dynamics of the overall public debt. In this context, the subnational governments improved their average primary deficit from 0.1% of GDP in 1994-98 to a surplus of 0.6% of GDP in 1999-2001.

Second, a significant step forward is the fiscal stabilisation programme implemented since 1998. This programme established targets for primary surpluses for the consolidated public sector of 2.6% of GDP in 1999, 2.8% in 2000 and 3% in 2001. The actual outcome was better than envisaged. The public sector primary surplus reached 3.1%, 3.6% and 3.8% respectively in those years.

Third, and most importantly, Congress enacted the Fiscal Responsibility Law (Complementary Law 101) in 2000. This sets forth an institutional framework that forces the administrators of public resources to follow a set of transparent and precise rules in managing revenues, expenditures, assets and liabilities. The main regulations are focused on establishing: (a) limits for expenditure on personnel and the public debt; (b) annual fiscal targets; (c) rules to compensate the creation of permanent expenses or reduction of tax revenues; and (d) rules to control the public finances in electoral years. The observation of this law imposes a permanent fiscal discipline at all levels of government, ensuring medium-term fiscal sustainability and transparency.

Finally, fiscal statistics have improved significantly, providing greater transparency and accuracy. The efforts made by the Brazilian government were recognised by the IMF's (2001) Report on the Observance of Standards and Codes: "Brazil attained high standards with respect to main indicators of fiscal management and transparency [...] the coverage of fiscal targets and fiscal statistics is commendably broad. Recent reforms in the budget and planning process have substantially improved the realism and transparency of the federal budget, and its consistency with macroeconomic constraints, as well as its effectiveness in resource allocation. Mechanisms of internal and external control are generally well developed, and increasingly aim to access not only formal compliance with legal requirements, but also the quality and cost-effectiveness of public spending. Fiscal statistics at the federal level are of high quality, timeliness, and detail. Brazil is at the forefront of countries at comparable level of development in the use of electronic means for the dissemination of fiscal statistics, legislation, and administrative regulation on tax and budgetary matters, and for delivery of government services, as well as to facilitate civil society's scrutiny of government activities and programmes."

This analysis provides the basis to argue that current primary surpluses are sustainable and that there is scope for further adjustments, if the conditions so require. Not only are these adjustments feasible in terms of flows of revenues and expenses, but also there is room for further privatisations. Compared to other emerging markets, Brazil has a larger proportion of assets and enterprises still in the hands of the government.

3. Basic scenario and sensitivity analysis

3.1 Solvency versus sustainability

The government is considered to be **solvent** if the present discounted value (PDV) of its current and future primary expenditure is no greater than the PDV of its current and future path of revenue, net of any initial indebtedness. A government's debt position is considered to be **sustainable** if it satisfies the present value budget constraint (ie it is solvent) without a major correction in the future, one that could be unfeasible or undesirable for economic or political reasons; see IMF (2002).

A solvency condition may be formalised as follows:

$$\sum_{i=0}^{\infty} \frac{E_{t+i}}{\prod_{j=1}^i (1+r_{t+j})} \leq \sum_{i=0}^{\infty} \frac{I_{t+i}}{\prod_{j=1}^i (1+r_{t+j})} - (1+r_t) * D_{t-1}$$

expenditure: E_{t+i}

revenue: I_{t+i}

debt: D_t

If the primary surplus is:

$$S_{t+i} = I_{t+i} - E_{t+i}$$

then:

$$\sum_{i=0}^{\infty} \frac{S_{t+i}}{\prod_{j=1}^i (1+r_{t+j})} \geq (1+r_t) * D_{t-1} \quad (1)$$

If the real interest rate (r_{t+j}) and real GDP growth rate (g_{t+j}) are kept constant, and the interest rate is higher than the GDP growth rate:

$$r_{t+j} = r_t$$

$$g_{t+j} = g_t$$

$$r_t \geq g_t$$

then equation (1) as a percentage of GDP could be simplified as:

$$(1+r_t) * \frac{D_{t-1}}{Y_t} \leq \sum_{i=0}^{\infty} \frac{S_{t+i}}{Y_t * (1+r)^i} = s_t * \sum_{i=0}^{\infty} \frac{(1+g_t)^i}{(1+r_t)^i} = s_t * \frac{1+r_t}{r_t - g_t} \quad (2)$$

For a given (constant) path of primary surpluses as a percentage of GDP (s_i):

$$s_t = s_{t+i} = \frac{S_{t+i}}{Y_t * (1+g_t)^i}$$

Therefore, from equation (2), the primary surplus for solvency would be given by:

$$s \geq (r-g) * d / (1+g)$$

It is important to realise that the solvency condition derived under constant values for growth, interest rates and primary surplus is also a condition for sustainability since, by construction, it does not require a major change in future variables to satisfy the intertemporal public sector budget constraint.

The institutional framework implemented in recent years has reinforced the objective of preserving the solvency of the public sector. Indeed the framework currently in place makes excesses at any level of government more difficult to occur as it contemplates instruments to preserve fiscal discipline. Additionally, the Fiscal Responsibility Law created a set of constraints - borrowing limits and ceilings for expenses with personnel - preventing fiscal irresponsibility.

Another consideration is that, as shown in the analysis of the net public debt, an ample amount of liquid assets can be used in emergency situations. Finally, it is also important to bear in mind that the Brazilian economy has been able to collect a relatively high level of fiscal revenue corresponding to around 35% of GDP.

3.2 Hypotheses of the basic scenario

The hypotheses in our basic scenario are conservative:

- Annual growth rate of 3.5%, less than potential output growth for Brazil, estimated at around 4.5% with recent data on productivity and labour force growth.
- High and conservative real interest rate of 9%.
- Nominal (but not real) currency depreciation.
- Stable primary surplus of 4.25% of GDP.
- The recognition of skeletons is estimated at around 0.6% of GDP during 2003-07. This assumption includes the recognition of all FCVS (mortgage insurance) accounts. With these hypotheses, the evolution of the net debt is shown in Table 3.

Table 3

Baseline scenario

Discrimination	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Inflation GDP deflator (average)	8.5	18.0	7.4	4.8	4.0	4.0	4.0	4.0	4.0	4.0
GDP real growth	1.5	2.2	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Interest rate ¹	17.5	23.1	15.0	13.4	13.4	13.4	13.4	13.4	13.4	13.4
Real interest rate	6.0	12.7	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
Nominal currency depreciation	52.3	-3.8	3.9	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Primary (% of GDP)	-4.0	-4.3	-4.3	-4.3	-4.3	-4.3	-4.3	-4.3	-4.3	-4.3
"Skeletons" ²	0.8	0.6	0.7	0.6	0.6	0.6	0	0	0	0
Net debt (% of GDP)	56.5	56.7	55.3	53.8	52.2	50.5	48.1	45.6	43.0	40.2

¹ Implicit interest rate of internal net debt. ² Net of privatisation proceeds (as a percentage of GDP).

The nominal and real interest rates are defined for the implicit internal public debt interest rate. This implies that the assumption of a 9% real interest rate implicitly assumes an even higher value - at about 10% - for the real interest rate based on a Selic rate. This is a very conservative assumption since a lower rate is warranted by the current fundamentals - healthy banking system, floating exchange regime, and sound fiscal framework. The assumption regarding the skeletons provides a faster decline in the debt ratio after 2007.

3.3 Sensitivity analysis

The graphs below show different paths followed by the net public sector debt under alternative assumptions for the exchange rate, real interest rate, GDP growth and primary surplus. Higher real interest rates generally cause the debt to decline at a slower pace. Higher real GDP growth and larger primary surpluses produce an initial step reduction of debt, and, if maintained, a downward path. The effect of larger primary surpluses on the reduction of the debt is important.

3.3.1 Real exchange rate

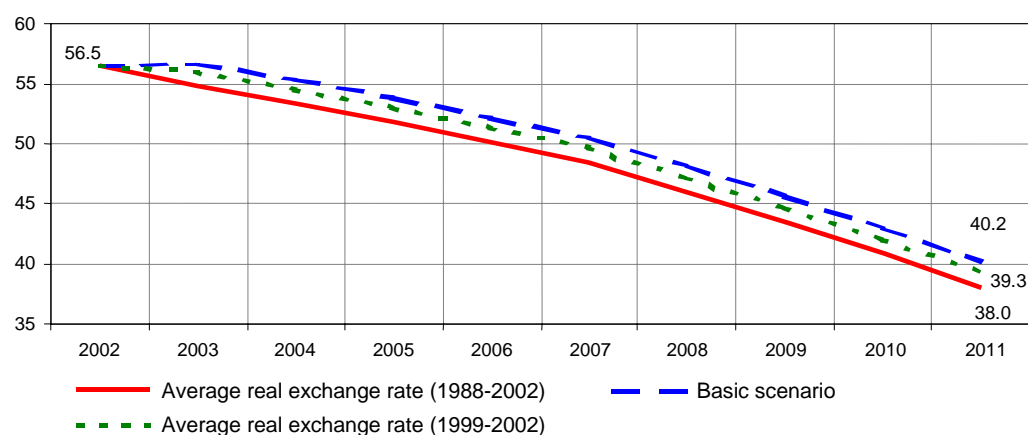
It is important to realise that a nominal exchange rate depreciation only affects the debt/GDP ratio insofar as it exceeds inflation (measured by the GDP deflator), ie it leads to a real exchange rate depreciation. A real exchange rate depreciation initially increases the debt, as its effect is calculated on an accrual basis. Similarly, a reversal of the depreciation would immediately bring the debt down. A permanent impact on the debt stock would occur only if the debt matures *and* is redeemed at an unfavourable exchange rate (the debt is not rolled over or is refinanced with non-dollar-linked debt instruments). Otherwise, the fiscal loss is partially or totally reversed whenever the currency appreciates.

The effect of a gradual return of the effective real exchange rate to its 15-year average, compared to the basic scenario, is shown in Graph 5. The effect is substantial: the debt/GDP ratio falls by more than 20 percentage points in 10 years.

Graph 5

Net public sector debt, 2002-2011 - exchange rate exercise

% of GDP



3.3.2 Skeletons

Debt recognition (“skeletons”) adds directly to the stock of the debt and thus affects the debt level. The slope of the debt path is also affected, but to a smaller extent, due to the interest accrued on the newly recognised debt. The recognition of debt that had not been recorded as such by previous governments has amounted to about 10% of GDP. As shown in the previous section, without such recognition the debt dynamics would appear differently. Nonetheless, recognising past debt is in line with the policy of improving transparency in the government accounts.

For the sensitivity analysis, a debt ratio path is simulated with higher debt recognition numbers in the future - accumulated 10% of GDP in the period 2002-11. The results show that the dynamics are favourable, even under this assumption.

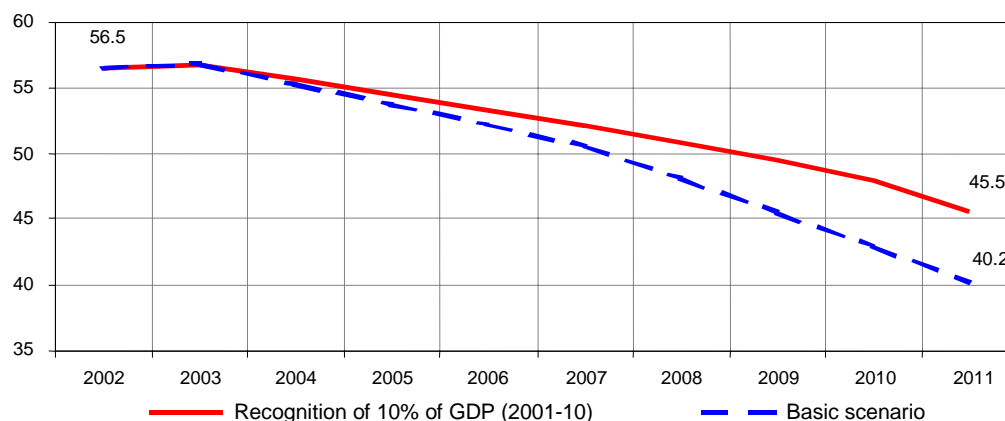
3.3.3 Primary surplus

Changing the primary surpluses produces not only different levels of debt but also different slopes for the debt path (Graph 7). Under the basic scenario - GDP growth of 3.5% from 2003 onwards, average real interest rate of 9%, primary surplus of 4.25% of GDP - net public sector debt reaches below 50% of GDP in 2008. Increasing the primary surplus to 5% of GDP would lead to a net debt of 40% of GDP in 2009, a decline of almost 20% of GDP from the current levels. Primary surpluses around 0-2%, however, would not suffice to stabilise the net debt.

Graph 6

Net public sector debt, 2002-11 - skeletons exercise

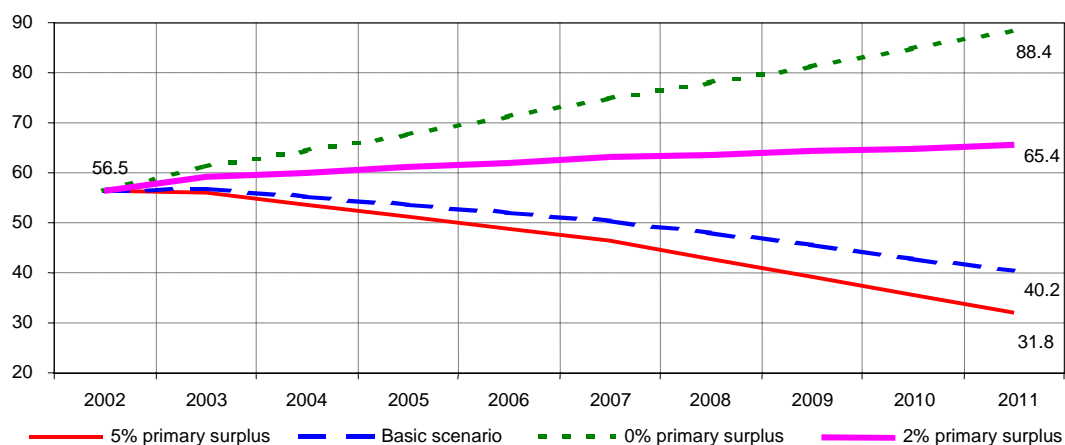
% of GDP



Graph 7

Net public sector debt, 2002-11 - primary surplus exercise

% of GDP



Another possible exercise is to assume that different primary surpluses may lead to different paths for the real interest rate. This will be the case if current domestic real interest rates factor a premium on uncertain debt dynamics and if this premium is sensitive to the size of the primary surplus. The compounding of the two effects has powerful consequences for the debt dynamics. Combining primary surpluses (0% or 5%) with real interest rates (10.5% or 7.5%) provides a stark picture (Graph 8).

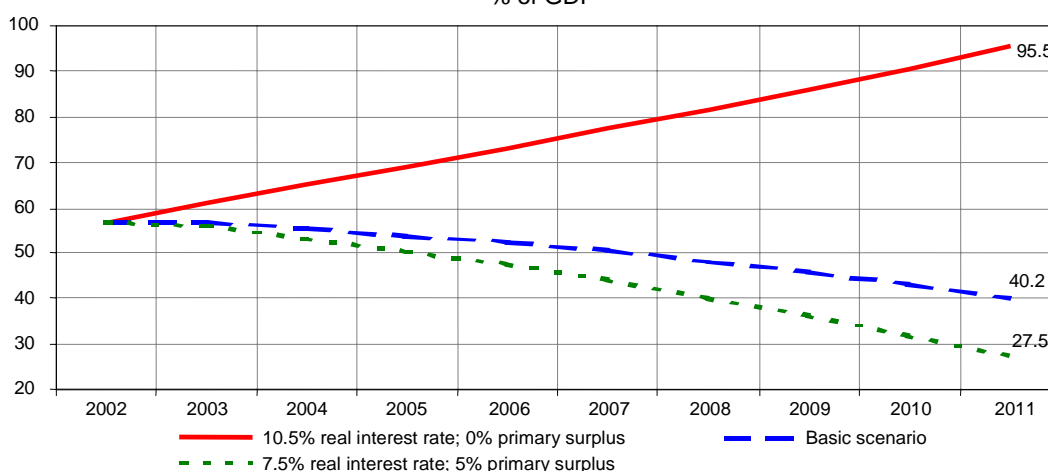
3.3.4 GDP growth

Assuming a lower GDP growth rate of 2.4% in 2003 onwards, the debt would stabilise and decline subsequently. A higher growth of 4.5% would make the debt/GDP ratio fall considerably. Assuming a lower GDP growth rate of 2.4% in 2003 would not cause the debt/GDP ratio to increase over time. Actually, even this low level of growth would be consistent with a declining ratio after a few years (Graph 9).

If higher growth is obtained in a scenario of lower real interest rates, the decline in the debt/GDP ratio is larger (Graph 10). Alternatively, if one assumes a lower growth *and* higher real interest rate, the debt/GDP ratio remains relatively stable (remember that this real interest rate is the implicit rate on the debt - Selic rates would be even higher).

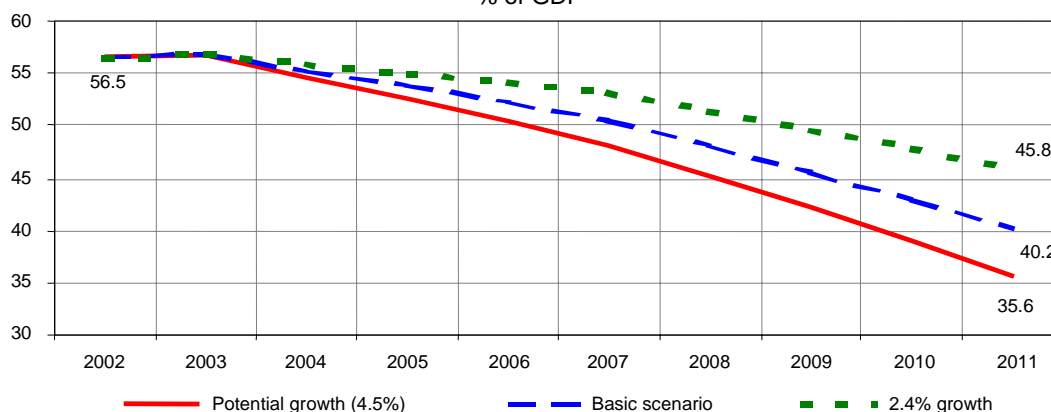
Graph 8

Net public sector debt, 2002-11 - combining primary surplus with real interest rate exercise
% of GDP



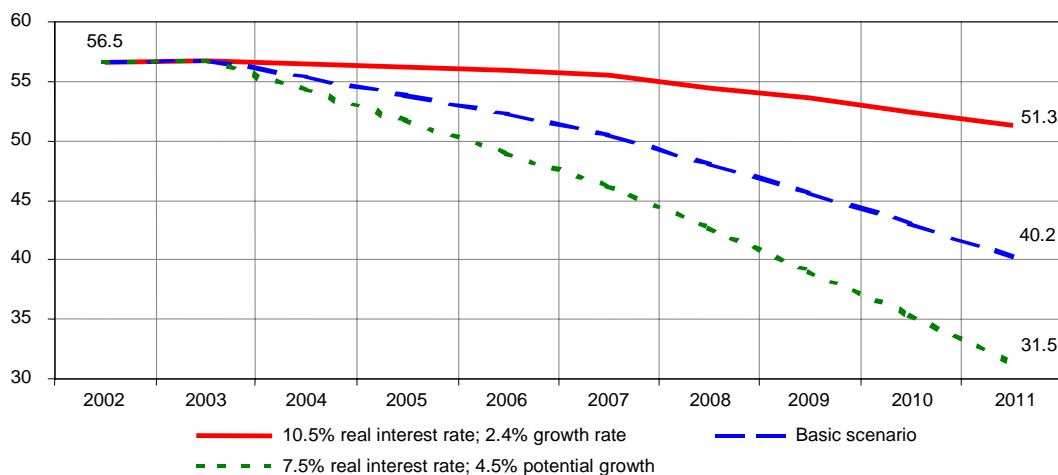
Graph 9

Net public sector debt, 2002-11 - growth rate exercise
% of GDP



Graph 10

Net public sector debt, 2002-11 - combining growth rate with real interest rate exercise
% of GDP

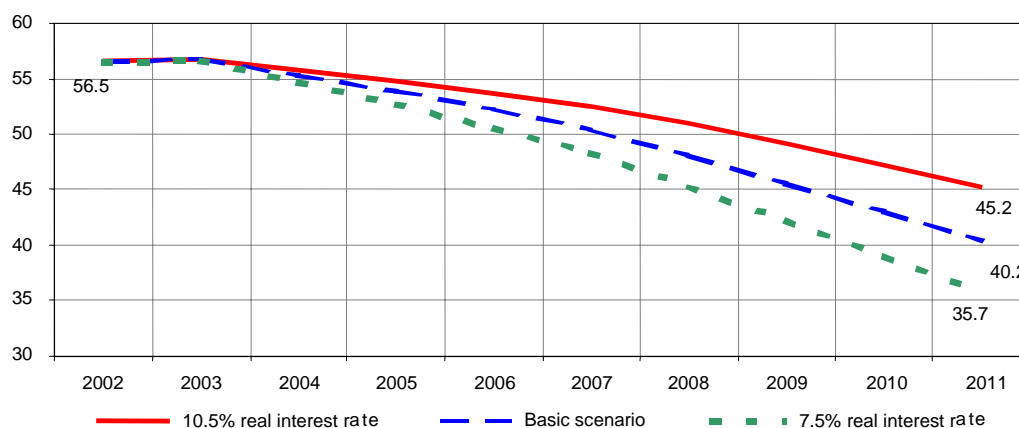


3.3.5 Real interest rates

With the current levels of primary surpluses (4.25% of GDP), even if implicit real interest rates are maintained at 10.5% from 2003 onwards, the debt/GDP ratio declines and reaches 45% in 2011. A real interest rate of 7.5% would help accelerate the debt reduction (Graph 11).

Graph 11

Net public sector debt, 2002-11 - real interest rate exercise % of GDP



4. Negative scenario and the likelihood of the assumptions

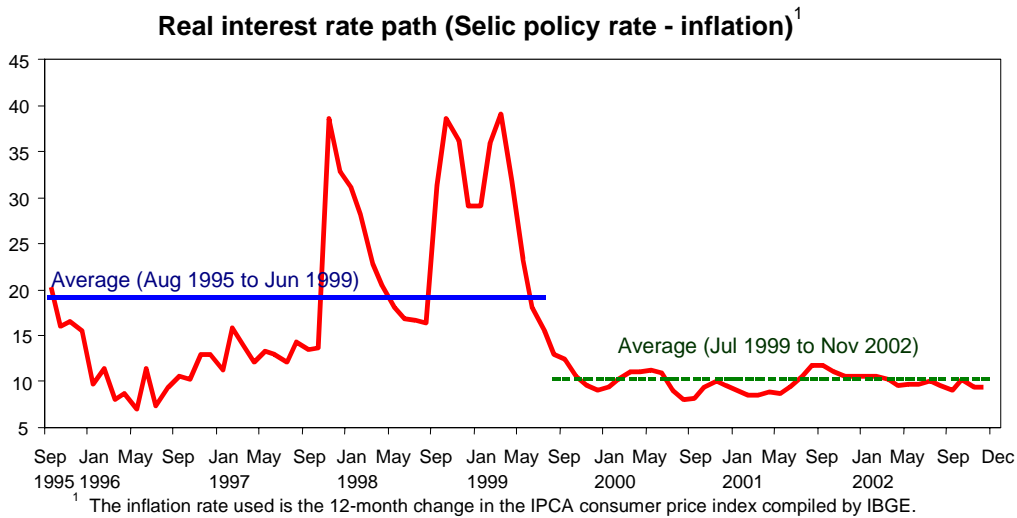
The sensitivity analysis shows that some unfavourable scenarios are not unstable. Even if growth stays around 2-2.5%, the debt shows a declining path. Similarly, a once and for all real devaluation would not trigger an explosive growth of the debt ratio. Fiscal relaxation would have to be quite significant to set the debt into an unstable path, ie only if the surplus is reduced below 2% of GDP would the debt dynamics become unstable. Finally, interest rates would have to remain at quite a high level to bring the public debt to an unsustainable path.

While it would be possible to design a negative scenario by assuming a set of sufficiently unfavourable outcomes for the main variables, for such a scenario to occur would require the persistence of unfavourable numbers over a 10-year period. What is the probability that such a sequence of unfavourable contingencies will persist for a whole decade?

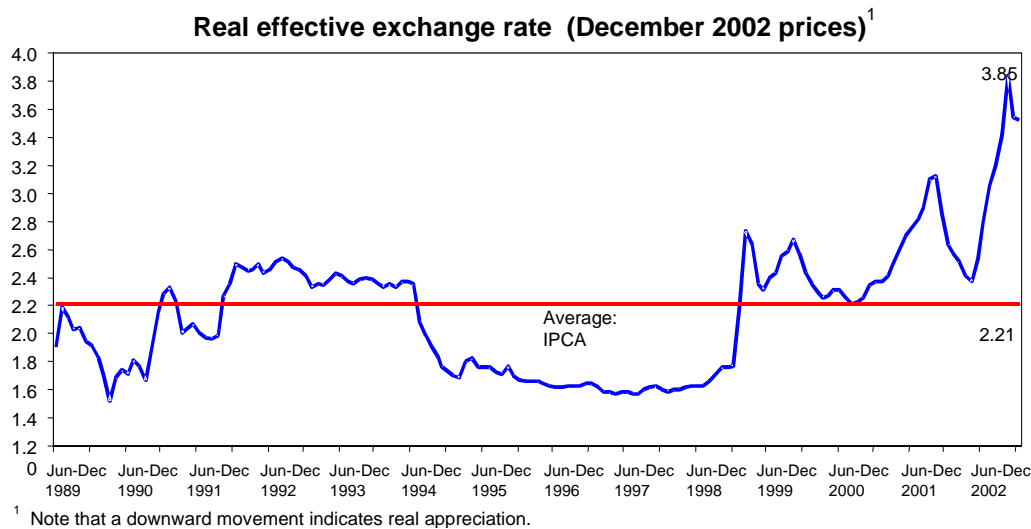
Let us take the possibilities by turn. First, the interest rates. The balance of risks indicates the likelihood of a gradual reduction of interest rates from their current levels. Indeed, Graph 12 shows that the average real interest rate has been declining since the change to a floating exchange rate regime. Even in the recent event of adverse external shocks, the rise in interest rate has been less severe than in the past, as part of the shock has been absorbed by the exchange rate. Of course, one would not expect that the unfavourable domestic and external environment would persist for a decade, thus reducing the reasons for a tighter monetary policy stance. When more normal conditions are re-established, with a lower frequency of negative supply shocks, the real interest rate would continue on its downward trend, converging to the levels (well below 10%) observed in other emerging market economies.

A second question is whether it is likely that the real exchange rate will continue to depreciate. The probability of the real exchange rate appreciating from current levels in the coming years is high. The Brazilian economy has been through a sequence of adverse shocks with a direct impact on the foreign exchange market in the recent past. Currently, domestic uncertainties are overlapping with turbulent international capital markets, and have translated into an overshooting of the exchange rate. Indeed, Graph 13 shows that the real exchange rate is well above the average level recorded over the last 15 years.

Graph 12



Graph 13



Furthermore, it should be borne in mind that it is the real exchange rate that matters in these calculations. The path of the nominal exchange rate depreciation only affects the debt/GDP ratio insofar as it exceeds inflation (measured by the GDP deflator). If the nominal rate path generates a consistent depreciation, it would eventually lead to a higher inflation rate. Under an inflation targeting regime, monetary policy is geared towards avoiding this inflationary outcome, increasing the likelihood of a nominal exchange rate appreciation. This outcome is more likely when the longer-term trend of the real exchange rate is more appreciated than the current levels.

The major industrial countries are currently experiencing a weak growth rate and there have been major adjustments in the international capital markets. This creates a downside pressure not only for the demand for the exports of emerging market countries but also for these countries' access to external financing, with a negative impact on investment. It is expected that as the world economy recovers and international financial markets settle down, these factors will abate.

On balance, the likelihood of any of the worst case scenarios occurring is small. Moreover, if such contingencies occur, reasonable corrections in fiscal settings are feasible.

5. Conclusions

The main arguments raised in this paper are worth emphasising:

- Under reasonable and even conservative hypotheses, the debt/GDP should start declining over the next few years. This result is valid even if there are negative outcomes from any of the relevant determinants - real interest rate, GDP growth, real exchange rate, and contingent liabilities. The key necessary condition is to maintain the primary surplus at around 4% of GDP.
- It is possible to construct sufficiently negative scenarios, where the debt/GDP ratio does not stabilise. However, the likelihood of such scenarios is small. More specifically, further permanent real exchange depreciation is unlikely, given that the currency is substantially weaker than its 15-year average, and real interest rates are on a declining trend but still very high compared to other emerging markets. Further decline seems to be the natural path over the medium run. Finally, a recovery in the world economy will push GDP growth rates closer to the potential output growth - around the 4.4% observed in 2000.
- Nonetheless, if a low likelihood negative scenario does occur, further corrections in the balance of revenues and expenditures are feasible. The comfort arises from the recent institutional progress in the fiscal regime in Brazil, in particular the Fiscal Responsibility Law and the agreements with states and municipalities.
- The recent debt/GDP increase should not be used as an indication of future performance. Non-recurrent events explain almost all of the past behaviour. The recognition of hidden liabilities amounting to almost 10% of GDP explains a good proportion of the increase. In addition, the required adjustment in Brazilian external accounts led to a corrective adjustment in the real exchange rate that has already taken place. Also, the shift to consistent primary surpluses since 1998 has changed the fiscal outlook in Brazil. Finally, one should not expect real interest rates averaging 20% a year to be recurrent. In summary, if the past is to be used as a reference for the future, our analysis suggests that in the absence of major adjustments in the real exchange rate, and with the current policy of generating a sizeable fiscal surplus, Brazil's debt/GDP is likely to decline in the future.

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Fiscal rule and central bank issues in Chile

Jorge Marshall¹

Currently, Chile has solid institutions for economic governance and a sound framework for stabilisation policies. This environment contrasts with the policy regime prevailing for several decades around the middle of the 20th century. That was a period of chronic fiscal deficits, high inflation and continuous shortage of foreign exchange. Since then, the key institutions for sound management of fiscal and monetary policy have been reformed; in addition, independence was granted to the central bank in 1989. Also, the policy framework has been improved, embracing the recommendations that emerge from past experiences and policy lessons of other countries.

Today, based on an autonomous central bank, monetary policy pursues an inflation target and there is a floating exchange rate. Fiscal policy, in turn, pursued rather conservative objectives in the 1990s, with an average fiscal surplus of 1.5% of GDP from 1989 (Table 1) and consolidated public debt declining from 40% of GDP in 1989 to 8% in 2002 (Table 2).

This comfortable fiscal position has deteriorated to some extent since 1997, when there was a marked fiscal expansion and a surge in private spending prior to the Asian crisis. Furthermore, the 1999 recession and sluggish recovery have weakened the fiscal accounts. The deficit reached almost 2% of GDP in 1999, a level considered high compared to the average of the past two decades. With the firm purpose of restoring a sound fiscal position, the new government that took office in early 2000 announced that fiscal policy would follow rules designed to maintain a structural surplus of 1% of GDP. The purpose of this rule was to confirm the government's commitment to sound fiscal policies.

This paper reviews several issues that are relevant to assessing this rule approach to fiscal policy, with special consideration given to its connection with the central bank's policies.

1. Methodology of the structural balance

The diverse factors influencing the public sector budget in Chile suggest the use of an indicator such as the structural balance in order to assess properly the fiscal stance. The tax system is simple, and broad-based. This makes tax collections directly related to the output gap. Transfers by CODELCO, the state-owned copper company, make a hefty contribution to the budget. Inflation and interest rates are less relevant since the tax system is indexed and debt is low. On the whole, the economic cycle explains a significant portion of the exogenous influences on the budget. Also, the standard methodology for structural balance used by the IMF was adapted to consider copper price fluctuations, which exert an important influence on the budget.

Accordingly, the structural balance is defined as the level of revenues minus expenditures if GDP were equal to potential and the copper price equal to its medium-term trend. In addition, the accounting classification of some items in the budget is improved to obtain more meaningful figures. Although the size of the latter adjustments may be relevant in specific years, the idea of the structural balance is to exclude the cyclical effect of domestic activity and the short-term variability of the copper price.

The result of this methodology is a fiscal indicator that changes over time mainly due to discretionary fiscal policy, but also due to exogenous non-cyclical factors affecting revenues and expenditures. Isolating discretionary fiscal policy completely would require estimating all exogenous variables affecting fiscal aggregates, which is extremely difficult. So, this is a limitation of the structural balance methodology that needs further analysis to find out its probable magnitude.

¹ The ideas expressed in this paper are those of the author and do not necessarily reflect those of the Central Bank of Chile or its Board.

The methodology for the structural balance applied in Chile covers the central government, which represents the most direct sphere of control of fiscal policy. This definition includes all agencies subject to the annual budget proposed by the executive and approved by Congress.

The estimation of the structural balance follows three steps: (i) correction of accounting criteria; (ii) cyclical adjustment; and (iii) modification of the copper price. The first step tries to approximate the actual fiscal balance to the variation in net worth of the central government. This requires reclassification of those items that represent deficit financing of the central government, but do not necessarily modify its net worth position. Their counterpart is a change in the "other assets" account, rather than revenue from the private sector. These adjustments include: (a) registering below the line (deficit financing) revenue items such as purchases of bonds and securities, revenues from privatisation, sales of financial assets, recovery and granting of loans; (b) computing all copper sales as fiscal revenues, which means that deposits (or overdrafts) in the Copper Compensation Fund are included in the structural budget; (c) registering the operations of the Oil Price Stabilisation Fund as standard fiscal operations; and (d) computing the flow of payments according to the stock of social security bonds rather than the change in the stock of these bonds.

The second step of the structural balance methodology takes into account the cyclical component of the budget. In the Chilean public sector, the cyclical component of spending is not considered because there is no explicit link between the output gap and public expenditure programmes, such as unemployment benefits. In contrast, the cyclical component of tax revenues is calculated from income elasticities and the output gap.

The output gap is a key concept in the structural balance methodology and is subject to methodological debate. In the case of Chile, the output gap is obtained from the average estimation of a panel of experts, appointed by the Minister of Finance. They estimate the relevant parameters for potential GDP, such as the growth rate of the capital stock, labour force (adjusted by education) and total factor productivity for a period of five years ahead. These figures are then used to obtain the annual output gap. The income elasticity of tax revenues, in turn, is given a value of 1.05, which results from standard econometric estimates. Therefore, structural tax revenue is defined as the amount that would have been collected if the output gap were zero. The difference between actual and structural tax revenues is the cyclical effect of the fiscal balance.

Table 1
Chile: structural balance and fiscal indicators
(% of GDP)

	1989	1995	1996	1997	1998	1999	2000	2001	2002
Public saving	3.0	4.9	5.3	5.1	3.8	2.3	3.5	3.2	2.7
Actual balance	1.3	2.3	2.1	1.8	0.4	-1.4	0.1	-0.3	-0.8
Adjusted balance	3.2	2.9	2.1	1.9	0.1	-2.2	-0.8	-0.6	-1.1
Cyclical effects									
Output gap effect	0.4	0.2	0.4	0.6	0.4	-0.5	-0.4	-0.5	-0.9
Copper price effect	4.1	1.2	0.3	0.2	-0.7	-0.9	-0.4	-1.0	-1.0
Total	4.4	1.4	0.7	0.8	-0.3	-1.4	-0.8	-1.5	-1.9
Structural balance	-1.1	1.4	1.3	1.1	0.5	-0.7	0.0	0.9	0.9

Source: Ministry of Finance, Chile.

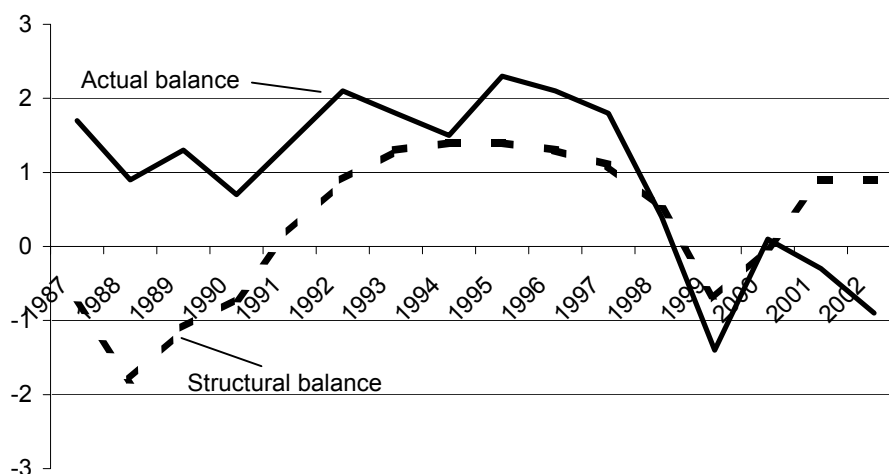
The third step takes into account the discrepancy between the actual and the medium-term copper price. In other words, the structural balance computes CODELCO's physical sales at trend value. The medium-term copper price is difficult to forecast. So, the same treatment is applied as for the output gap, with a second expert commission, also appointed by the Minister of Finance. This methodology may be summarised in the following expression:

$$\text{Structural balance} = \text{Actual balance} + A + [T_t^* - T_t] + [IC_t^* - IC_t]$$

where A represents the accounting adjustment mentioned above. The cyclical effect is reflected in $[T_t^* - T_t]$, where the tax revenue at zero output gap is defined as $T_t^* = T_t(Y_t^*/Y_t)^\varepsilon$, T_t represents the amount of the actual tax collection, and ε is the income elasticity of tax revenues. Finally, $[IC_t^* - IC_t] = (\text{physical sales of CODELCO})(P_t - R_t^{ref})$, that is, the difference between the value of physical sales at the market and reference copper prices.

The results of applying this methodology to the Chilean fiscal accounts are presented in Table 1. Graph 1 illustrates that the structural balance is more stable than the actual fiscal balance. Unquestionably, the structural balance is a more meaningful concept and reflects better the evolution of the fiscal policy stance. The total amount of the three adjustments varies from 2.4% of GDP in 1989 to -0.7% in 1999. The breakdown of the three effects confirms that each of them is relevant to the overall estimation. For example, the average absolute adjustment to copper revenues was 1.3% of GDP during 1989-2001. This shows that applying only the cyclical component of the methodology may distort the assessment of the fiscal stance.

Graph 1
Chile: actual and structural fiscal balance
(% of GDP)



Source: Ministry of Finance, Chile.

In 1989, for example, the actual surplus was 1.3% of GDP; nevertheless, if the economy had been at its potential GDP and the copper price at its long-term trend price, there would have been a deficit of 1.1% of GDP. So most of the surplus reflected the cyclical position of the economy, as actual tax revenues were higher than structural tax revenues since actual GDP was above potential output. Besides, the short-term copper price was considerably higher than the long-term price; so actual revenues from copper were considerably higher than structural copper revenues. In total, the cyclical component in 1989 was 4.4% of GDP.

In 1999, the situation was reversed as the actual balance showed a deficit of 1.4% of GDP, while the structural deficit was zero. This is due to the gap between potential and actual GDP and between short-term and long-term copper prices. Therefore, it is concluded that the evolution of the traditional balance tends to overstate the changes in fiscal stance during the cycle.

2. Fiscal rule and public sector debt

The public sector balance represents a flow indicator that over time defines a debt path. Therefore, setting a certain level for the structural surplus as the target of the fiscal rule is equivalent to delineating a desired path for public debt. To decide on the optimal path, one needs to recognise the

tension between two goals: intergenerational transfers and sustainability. On the one hand, debt accumulation increases the risk of an escalating cost of financing future fiscal deficits. This states a sustainability constraint. However, on the other hand, reducing the level of debt is equivalent to a wealth transfer to future generations, which would presumably be richer. It is necessary, therefore, to obtain a suitable balance between sustainability and intergenerational fairness.

In choosing the optimal debt path, it is also important to recognise that financial markets are less tolerant of public debt in emerging than in advanced economies. This may be a consequence of institutional or governance weaknesses and emerging economies being more exposed to external volatility and exogenous shocks. Whatever the reason, the evidence tends to corroborate the fact that, from a certain threshold of public debt, the economy starts to experience not only higher sovereign risk premia, but also additional volatility in financial markets. Although public debt is well below this threshold (probably around 25-30% for the net debt/GDP ratio), the current heightened sensitivity and risk aversion of financial markets make it prudent to keep the debt ratio below this sensitive zone.

This rather conservative policy principle should lead to a long-term balance as the final result of fiscal accounts. However, in the Chilean case a long-term fiscal rule must consider some contingent liabilities not included in the actual budget, such as the minimum pension guarantee, other social security liabilities and state guarantees for infrastructure concession projects. These items have little effect on the short-term risk assessment of the economy, but represent resource commitments that may become more important over time. Also, Chile's central bank runs a cash flow deficit as the effective interest paid on its liabilities exceeds the average yield on its assets.

Therefore, since the fiscal rule of a 1% structural surplus is applied only to the central government, once these other factors influencing fiscal accounts are considered, the consolidated balance is close to zero, implying that the consolidated public debt is constant in the medium term. In other words, this structural surplus makes it possible to confront contingent liabilities that are not included in the government budget. This analysis excludes public enterprises which have independent financial management linked to their productive aims and are not used as instruments of fiscal policy.

The central government running a 1% of GDP structural surplus keeps consolidated debt a fairly constant proportion of GDP in the medium term, including a provision for contingencies. Furthermore, the application of this rule contributes to sustaining a sound level of public saving, which has been an important source of investment financing in the past in both Chile and other emerging economies. In addition, the structural surplus accounts for the fact that future generations might not benefit from the exploitation of exhaustible resources such as copper.

3. Debt sustainability

The most important indicator of public sector indebtedness and fiscal solvency is the debt/GDP ratio. The standard definition of public debt in advanced economies corresponds to gross central government debt. But in emerging economies other public institutions may hold significant portions of public debt, so the relevant institutional concept must be considered on a case by case basis. For example, Chile's central bank has accumulated significant liabilities from financing bank rescues in the early 1980s and the purchase of international reserves in the 1990s. Therefore, a more meaningful concept is the consolidated debt of the central government and the central bank, which may be gross or net of international reserves. Given the financial characteristics of international reserves, it is probably more appropriate to use the net concept, but the distinction is irrelevant for sustainability calculations, since the primary balance should include the interest payment on international reserves if gross debt is used and exclude these payments if the net debt is used.

The consolidated net debt declined from 40% of GDP in 1989 to 8% by 2002. This reduction responds to three factors: (i) the accumulated fiscal surplus, up to 1997; (ii) the strong growth of GDP in this period; and (iii) the reduction in market interest rates. However, as shown in Table 2, debt indicators display a slight increase in the period after 1997, with central government net debt increasing from 4% in 1997 to 11% in 2002. This is due to fiscal deficits and low growth in recent years.

The level of public sector debt in Chile compares favourably with the levels shown by other emerging economies and most advanced countries. Also, the Chilean public sector does not have large amounts of net debt denominated in foreign currency. On the contrary, foreign currency denominated financial assets, of around 25% of GDP, exceed the same type of liabilities, of around 15% of GDP. In addition,

the central government balance improves with peso depreciation because transfers received from CODELCO, the state-owned copper company, are larger than foreign currency denominated payments.

Table 2
Chile: public sector debt
(% of GDP)

	1989	1995	1996	1997	1998	1999	2000	2001	2002
Central government									
Domestic currency debt									
Gross	5.8	2.1	1.8	1.6	1.5	1.4	1.3	1.1	1.0
Net	2.0	-1.9	-2.0	-2.2	-2.1	-3.1	-2.8	-3.3	-3.4
Foreign currency debt									
Gross	38.1	15.6	13.3	11.6	11.0	12.4	12.5	13.9	14.9
Net	36.3	10.4	7.9	5.6	5.7	8.6	9.8	12.1	14.2
Total debt									
Gross	43.8	17.7	15.1	13.2	12.5	13.8	13.7	15.0	15.9
Net	38.3	10.4	7.9	5.6	5.7	8.6	9.8	12.1	14.2
Central bank									
Total debt (net)	2.1	4.2	4.9	6.0	5.2	3.9	3.6	0.6	-2.5
Consolidated public sector									
Total debt (net)	40.4	12.8	10.9	9.5	8.8	9.4	10.6	9.4	8.3

Source: Ministry of Finance, Chile.

To calculate the primary surplus that keeps current debt a constant proportion of GDP in the medium term, one needs to estimate future growth and effective interest rate. Choosing some reasonable values for these parameters and using the relationship $primary\ fiscal\ balance = \frac{(r-g)}{(1+g)}\ debt\ ratio$ generates the required primary balances shown in Table 3.

Table 3
Required primary balances (% of GDP)

Interest rate (r)	Growth rate (g)		
	3.0%	3.5%	4.0%
6.5%	0.5	0.4	0.3
7.0%	0.6	0.5	0.4
7.5%	0.6	0.5	0.5

These figures are not significantly different from the current primary surplus, which averaged 0.6% of GDP in 1997-2001 and 0.4% in 2000-01. This performance indicates that the policy rule aimed at keeping a 1% of GDP structural surplus is consistent with keeping the consolidated public debt constant in the medium term. These calculations explain why sustainability is not a concern in Chile.

4. Economic consequences of the fiscal rule

The application of the fiscal rule has two essential consequences for central bank policies. First, the structural surplus rule ensures long-term fiscal sustainability, which in turn allows for an independent monetary policy. Second, the rule increases the efficiency of fiscal policy as a tool for short-term output stabilisation, setting a new framework for more efficient coordination of stabilisation policy.

4.1 Long-term sustainability

The first effect of a fiscal rule is to strengthen fiscal discipline. Fiscal sustainability is a crucial condition for independent monetary policy. Before the Central Bank of Chile became independent in 1989, monetary policy was repeatedly subordinated to fiscal financing decisions, leaving little room for an effective stabilisation policy. This is evident in the chronic inflation of those years and the extreme fluctuations of output.

Conversely, when fiscal policy is sustainable, monetary policy can be conducted to deliver price stability and to contribute to reducing both inflation and output volatility. Therefore, meeting an established target of 1% of GDP for the structural balance every year ensures that public debt is not accumulated throughout the cycle.

Cyclical changes of the fiscal balance are a consequence of the operation of the budget's automatic stabilisers and will not lead to risky fiscal deficits. As the structural balance ensures a sound financial position, it also permits the transitory deterioration of the fiscal balance in the recessive phase of the cycle, to be compensated by the strengthening of the balance during the expansionary phase.

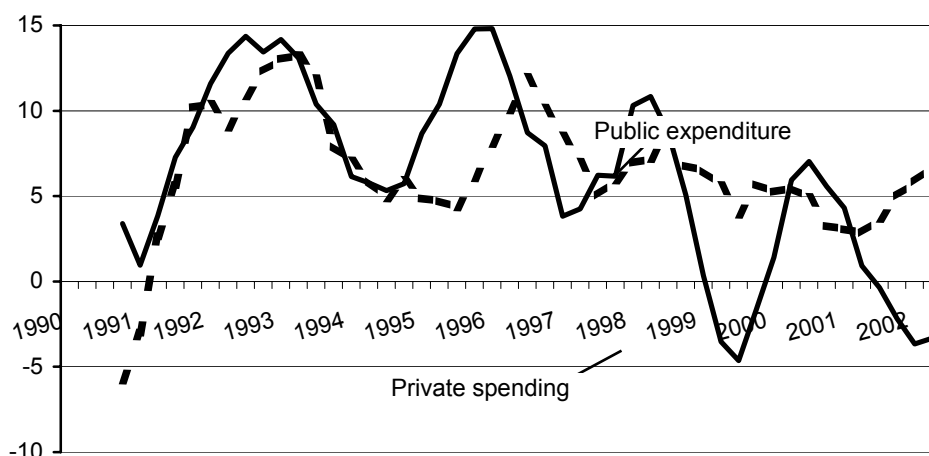
This fiscal rule does not mean that the budget result will always have a surplus or there are never going to be fiscal deficits; it simply means that maintaining an appropriate level of structural surplus will only permit temporary fiscal deficits up to desired levels. This is a fundamental condition for maintaining a stable monetary regime, with an independent monetary policy.

4.2 Short-term stabilisation

The second important effect of the structural surplus rule is the increased efficiency of fiscal policy as a tool for short-term stabilisation. The structural balance rule gives countercyclical fiscal policy room to maintain the stability of public finances. The explicit distinction between actual and structural balance allows automatic stabilisers to operate, although in the Chilean budget structure these stabilisers operate only in tax collection and not in government expenditure. Nevertheless, this device helps to reduce output variability throughout the cycle.

Graph 2

Chile: growth of private and public spending



Source: Central Bank of Chile.

Graph 2 shows the recent trajectory of private and public demand in Chile, clearly indicating the countercyclical character of fiscal policy. Since mid-2001, private demand has sharply declined while public expenditure has been more stable and has even increased in line with the fiscal rule.

The operation of a fiscal rule is equivalent to a change in the composition of fiscal policy, with less weight for discretionary policy and a larger weight for systematic policy. On the other hand, systematic policy is linked to the output gap and also to the difference between actual and trend copper prices.

Consequently, the structural surplus rule makes fiscal expenditure independent of variations in the budget balance resulting from exogenous shocks to aggregate demand, real GDP or the copper price. For example, an exogenous cyclical shock such as a contraction in aggregate private sector demand will tend to reduce tax revenue, thereby reducing the government's budget balance. In these circumstances, the maintenance of government spending is likely to help mitigate the effect of the initial adverse shock on private aggregate demand. As mentioned, expenditure does not operate as an automatic stabiliser. If this were the case, the magnitude of the countercyclical effect of the fiscal rule would be increased.

In general, keeping the budget away from discretionary policy contributes to smoothing the cycle. The reason is that discretionary fiscal policy is affected by irreversibility problems. It greatly depends on political considerations that interfere with its timing, and also it is subject to long implementation lags. However, once implemented, the effect passes through to the economy faster than do the effects of monetary policy. Conversely, systematic policy offers fewer incentives for time inconsistency problems, which affect credibility and have counterproductive effects. Credibility increases the effectiveness of automatic stabilisers of fiscal policy, which smoothes the cycle.

Under a rule regime, economic agents know how fiscal policy reacts to changes in the output gap and the terms of trade. This makes it easier for the market to anticipate fiscal measures, also smoothing the cycle. Consequently, it is more difficult to surprise the market, as economic agents can easily distinguish changes within the rule from changes of the rule. This explains the common finding that changes in discretionary policy tend to have a significant effect on interest rates, while changes of systematic policies do not. The same contrast is also found for the effect of fiscal policy on exchange rates.

In addition, the use of a fiscal policy rule changes the character of policy coordination between the ministry of finance and the central bank. On the one hand, fiscal and monetary policies will operate in the same direction and effectively exert a countercyclical influence on aggregate demand, which, in turn, improves the capacity of stabilisation policies. But, this will be achieved through implicit rather than open coordination, as most changes of fiscal policy are automatically driven by the cyclical position of the economy.

4.3 Further policy issues

Calculating the structural balance requires an evaluation of the output gap and the medium-term copper price, and these will change if significant shocks affect the economy or the copper industry. Consequently, operating the fiscal rule requires assessing the type of shock as either permanent or temporary. The former will affect the parameters of the methodology used to obtain the structural balance, while the latter will affect only the actual balance. If a permanent shock were treated as temporary, then the fiscal stance would be inappropriate - either too tight or too loose. The correct application of the fiscal rule therefore requires an active analysis of economic developments.

A fiscal policy rule such as the structural surplus has important benefits for stabilisation purposes. In this respect, it is an excellent companion for monetary policy. But the rule also limits the extent to which fiscal policy can operate as a stabilisation instrument, which could become relevant in rather severe circumstances. This is an issue that deserves further analysis in the Chilean case. The counterpart of this constraint on fiscal policy operating as a stabilisation instrument warrants consideration in monetary policy decisions. In normal times the fiscal rule will back the same purpose as monetary policy, but in special circumstances there is a limit in the fiscal policy side.

The stabilisation potential of the fiscal rule strongly depends on the structure of the budget. Specifically, items operating as automatic stabilisers give more flexibility to the structural balance, which allows for a larger difference between actual and structural balance on both the up- and downsides of the cycle. The output gap effect of the structural balance in Chile ranged between -0.9 and 0.6% of GDP during 1989-2001. This range is smaller than in OECD countries, in which automatic

stabilisers exert a greater effect on the structural surplus. This comparison indicates that the aggregate automatic stabilisers in Chile are less significant than in advanced countries.

Two additional issues related to the stabilisation capacity of the fiscal rule are the relative size of the government and the output elasticity of tax collections. Though the structural balance provides a valuable measure for assessing the fiscal policy stance, there are at least two other indicators that are used by the Central Bank of Chile to obtain a more comprehensive picture of fiscal policy changes and their expected influence on the economy. These indicators are expenditure growth and budget implementation ratio.

Real expenditure growth gives a simple measure of fiscal policy, especially when computed as a deviation from trend or compared to output growth. The inconvenience is that each item tends to have a different effect on aggregate demand. For example, interest payment abroad has no influence on domestic demand (even if it directly affects the current account of the balance of payments). For monetary policy purposes, a measure of the real growth of expenditure with relevant macroeconomic effect is calculated. In practice, this is done by excluding interest payments and a few other items such as the change in the stock of social security bonds.

Finally, the degree of budget execution is another indicator of the fiscal position, which provides complementary information on previous measures. It is estimated as the executed percentage of total budgeted expenditure and revenues. Frequently, the expenditure execution ratio is reasonably useful in assessing fiscal policy stance.

5. Central Bank of Chile's balance sheet

The composition of the Central Bank of Chile's assets and liabilities reflects two key features of macroeconomic performance and management over the past two decades. First, the financial crisis at the beginning of the 1980s resulted in the accumulation of fiscal promissory notes, subordinated debt and deferred losses. Second, the strong balance of payments in the 1990s, combined with a policy of trying to hold back peso appreciation, produced a substantial accumulation of international reserves. To finance these assets, the Central Bank issued promissory notes, which make up the bulk of its current liabilities.

Table 4
Central Bank of Chile balance sheet
(% of GDP)

	1989	1995	1996	1997	1998	1999	2000	2001	2002
Liabilities	51.9	39.5	38.6	40.3	36.5	35.5	35.6	34.6	32.2
Central Bank's notes	25.0	28.6	30.0	31.6	28.6	30.3	31.3	31.2	30.3
Government's deposits	2.6	5.6	5.8	6.3	5.6	3.9	3.2	2.5	1.0
Other liabilities	24.4	5.4	2.8	2.4	2.2	1.3	1.2	1.0	0.9
Assets¹	49.8	35.3	33.6	34.3	31.2	31.6	32.0	34.1	34.7
International reserves	13.0	21.7	21.5	23.1	21.1	21.2	21.4	21.8	23.9
Government's notes	25.1	11.7	10.7	9.8	9.1	9.6	9.8	10.2	9.8
Other assets	11.8	1.9	1.5	1.3	1.0	0.8	0.7	2.0	0.9
Central Bank net debt	2.1	4.2	4.9	6.0	5.2	3.9	3.6	0.6	-2.5

¹ Excluding non-performing assets.

This balance sheet structure has gradually changed, as assets linked to the financial crisis have been gradually absorbed and the floating exchange rate regime has kept international reserves roughly constant (Table 4). However, given the high volume of asset accumulation in the past, total assets still represent around 10 times the balance of the monetary base. This means that it will take several decades to strengthen the Central Bank's balance sheet, which is reflected in the slow decline of the asset/monetary base ratio.

International interest payments are the main determinant of the average yield on the Central Bank's assets. In 2001, the average yield was 4.5%. Conversely, the average weighed cost of interest paid on liabilities, which consist mainly of promissory notes, was 5.7%. Therefore, the difference between liability costs and asset yields was 1.2%. This figure is the base for calculating flow losses of the Central Bank, which the IMF estimates at 0.3% of GDP in 2001.

Financial earnings of the Central Bank also include changes in the relevant indexing of assets and liabilities, which are generally linked to exchange rate movements. Therefore, the recent peso depreciation accounts for most of the gains shown in the annual results of 2001.

China's monetary and fiscal policy

Li Ruogu

In the past few years, the Chinese government has been pursuing an active fiscal policy to finance key construction projects by issuing government debt. Meanwhile, sound monetary policy has been implemented in coordination with the fiscal policy. With the coordination of the two policies, the trend of deflation has been contained, economic restructuring accelerated and economic growth further promoted.

China's GDP exceeded RMB 10 trillion in 2002 - a historic breakthrough. In recent years, reform of the fiscal revenue system has resulted in the steady growth of government revenue. In 2001, it amounted to RMB 1.6 trillion, 5.6 times that in 1990. The proportion of government revenue to GDP increased from 11% in 1994 - during the early stage of reform - to 17% in 2001. Significant progress has also been made in reforming the management of government expenditure.

Despite the above achievements, there remain challenges facing China's economic development, which are mainly reflected in the slowdown of government revenue since the beginning of 2002, the relatively high proportion of non-performing loans in the financial sector, weaker demand in rural areas and persistent employment pressure. In addition, uncertainties over the global economic outlook have had an impact on China's exports and economic growth. To resolve these problems, the Chinese government will continue to boost domestic demand through proactive fiscal policy and sound monetary policy and further speed up economic restructuring and improve the quality and efficiency of economic growth. Major developments in recent fiscal and monetary policies are as follows.

Monetary policy

Since the beginning of 2002, the People's Bank of China (PBC) has been pursuing sound monetary policy while promoting policy efficiency. The indirect policy instruments and mechanism have been improved. During the year to September 2002, China's broad money (M2) and narrow money (M1) increased by 16.5% and 15.9% respectively. China's base money has increased steadily and financial institutions' positions remain adequate. At the end of September 2002, the central bank's base money stood at RMB 3.97 trillion, representing an annual growth rate of 11.1%, an acceleration of 3.4 percentage points from a year earlier. The average excess reserve ratio of the financial institutions was 4.9%, representing an adequate position and high liquidity. The loans granted by China's financial institutions have also grown rapidly, with improvements in lending structure and quality. On a comparable basis, renminbi loans by all financial institutions (including foreign institutions) increased by 14.2%, accelerating by 2.6 percentage points from end-2001 and registering the highest growth since March 2001.

In the light of the current situation at home and abroad, the PBC will:

- use monetary policy instruments in a flexible manner to adjust money supply appropriately and maintain reasonable growth in credit aggregates;
- promote the reform of the interest rate mechanism, and bring interest rates into full play in adjustment of the demand and supply of funds, as well as in the optimisation of resource allocation;
- improve the incentives applying to lending and corporate governance of commercial banks;
- and improve the RMB exchange rate formation system under the precondition of preserving the stability of the RMB exchange rate.

Fiscal policy

In the light of the weak global recovery in early 2002, the Chinese government continued to pursue a proactive fiscal policy to boost domestic demand. In the first three quarters, fiscal revenue increased by 10.9% and expenditure by 17.6%, which is under the budget limits. Owing to the slowing revenue and increasing expenditure, there is little room for further fiscal deficit reduction.

The slowing revenue is caused by the following factors:

- customs tariffs were reduced from 15.3% to 12% in line with China's WTO commitment;
- the impact of lowering the securities stamp tax rate became increasingly evident in 2002;
- the banking and insurance business tax was further lowered by 1 percentage point in 2002.

The increase in expenditures is caused by the following factors:

- continued investment in projects funded by government bonds, western region development and technical innovation;
- more resources directed to the social safety net;
- wage increases for civil servants;
- increased investment in agriculture, science and education.

Therefore, the budget deficit in 2002 will remain at the level of 3.3% of GDP.

While paying close attention to the explicit risks posed by the increase in the fiscal deficit and public debt, the Chinese government is also aware of the implicit fiscal liabilities arising from non-performing loans in the banking sector, the restructuring of state-owned enterprises, and the underfunded pension system. Efforts will be made to address the medium-term fiscal risks by implementing a medium-term budgetary framework and promoting various reforms, including the overhaul of the financial system, the state-owned enterprises and the social safety net. We firmly believe that China's medium-term fiscal sustainability is strongly underpinned by sustained economic growth and a steady increase in revenue as well as the people's confidence in the government.

Coordination between monetary policy and fiscal policy

Monetary and fiscal policy must be well coordinated. This is particularly relevant to the bond market, especially the government bond market, since it has become one of the most important channels for the central bank to adjust the money supply. Currently, with base money standing at RMB 3 trillion, and outstanding government debts at only RMB 2 trillion, the volume of bonds is insufficient to satisfy the operational needs of the central bank's monetary policy. Outstanding debts, consisting of long- and medium-term debts and almost no short-term ones, will also affect the efficiency of the central bank's monetary operations. Furthermore, the products in the bond market lack diversity. Under these circumstances, it will be hard for the central bank when conducting open market operations to take into consideration the interests of all the parties involved. Therefore, coordination and communication between the central bank and the Ministry of Finance are necessary in formulating and implementing macroeconomic policies.

Fiscal issues and central banks in emerging markets: the case of Colombia

José Darío Uribe and Luis Ignacio Lozano¹

1. Introduction

This paper reviews the relationship between monetary policy and fiscal policy, on the basis of the Colombian experience over the past 10 years. According to the Colombian constitution, the main function of the Banco de la República (BRC; Colombia's central bank) is to formulate and execute monetary policy with the goal of preserving price stability. Therefore, the BRC is concerned with all matters that affect directly or indirectly its ability to achieve or maintain price stability. Fiscal policy is one of them.

In general, there are two aspects that help explain the relationship between fiscal and monetary policies. The first has to do with fiscal policy's impact on the *short-term* management of monetary policy and inflation. This is of great relevance for countries such as Colombia, which is currently in a process of decreasing inflation towards price stability. In this regard, the BRC has adopted quantitative inflation targets on a one- to two-year horizon, and has made important advances over the past few years. The second aspect is *long-term* fiscal sustainability. As is well known, in a country where the growth in debt is (judged) unsustainable, there is no monetary independence, and the economy encounters high levels of inflation.

Section 2 of the paper describes how the BRC assesses the short-term effects of fiscal policy, and the methods used to analyse the sustainability of fiscal and monetary policies. Section 3 focuses on the recent evolution of public debt and its long-term sustainability. The final section examines the capability of the Colombian economic authorities to establish and maintain a countercyclical macroeconomic policy.

2. The short-term relationship between fiscal and monetary policies

During the past 10 years, Colombia's fiscal policy has undergone a series of radical changes. There were a number of tax reforms, a strong expansion of public expenditure, and an increasing fiscal deficit in the second half of the 1990s. As illustrated by Graphs 1-4:

- Expenditure of the non-financial public sector rose from 22% of GDP in 1991 to 39% 10 years later. The central government accounts for the majority of this expansion, followed by the departmental and municipal governments, the social security system, and the decentralised agencies.
- Public revenues rose from 22% of GDP in 1991 to 35% in 2001. Among them, tax revenues went up from 14% of GDP to 17% in 2001; the remaining public revenues are associated with the operating income of public enterprises - oil, electricity, coal, etc. Regarding taxes, the value added and income taxes have been adjusted regularly. Additionally, import tariffs were reduced significantly in the early 1990s, with some later modifications. In some years, oil taxes increased, while consumption subsidies decreased, particularly in the case of public services.

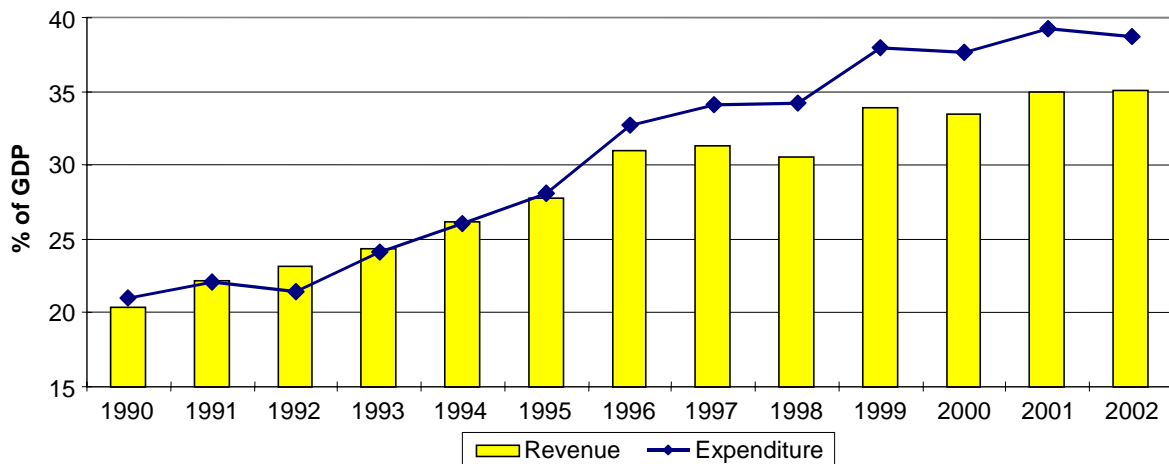
¹ Technical Manager, and Director of the Public Finances Office of the Economic Research Department, respectively, of the BRC, Colombia's central bank: juribeas@banrep.gov.co and ilozaanes@banrep.gov.co. The views expressed in the paper are those of the authors and not necessarily those of the BRC.

- The balance of the public sector at large fell from equilibrium in 1991 to a deficit of 5.5% of GDP in 1999. During the following two years, the deficit decreased to approximately 3.3% of GDP, and for 2002 it was projected to reach 4%. The central government's deficit climbed from 0.2% of GDP in 1991 to a projected 7.0% in 2002.

The fiscal issues just described have affected monetary policy in recent times. The following subsection outlines how the BRC identifies and evaluates the influence of fiscal actions on the short-term management of monetary policy.

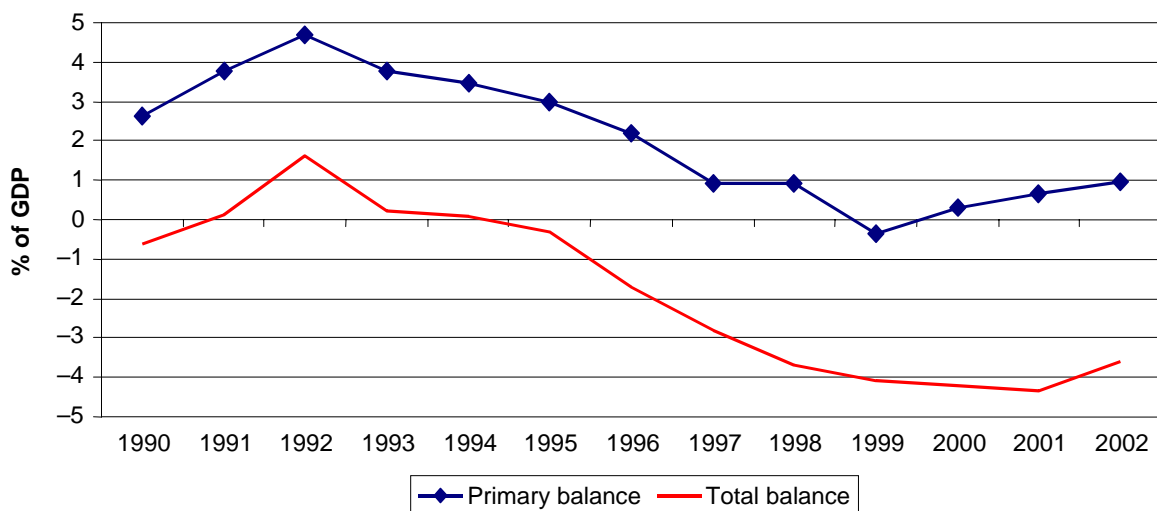
Graph 1

Revenue and expenditure of the non-financial public sector

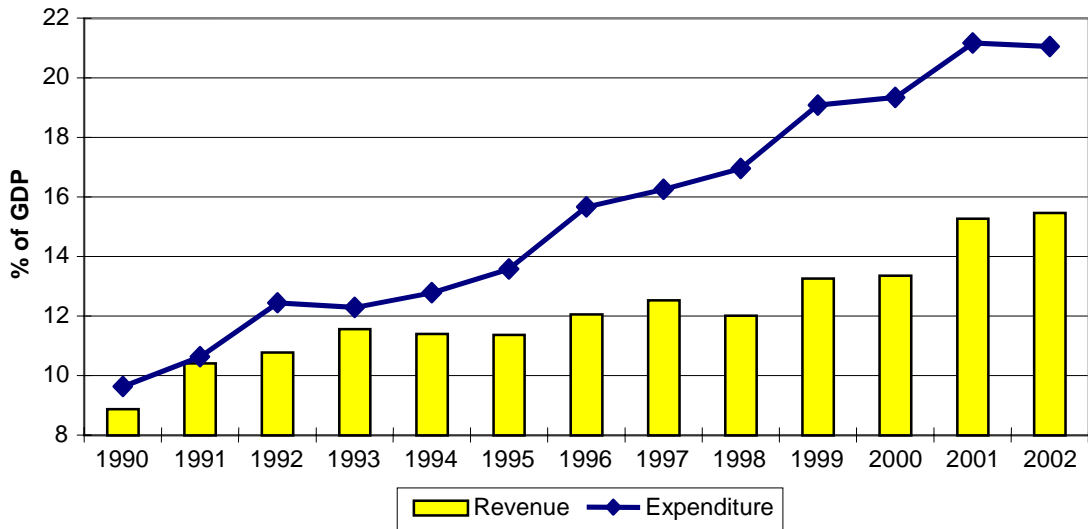


Graph 2

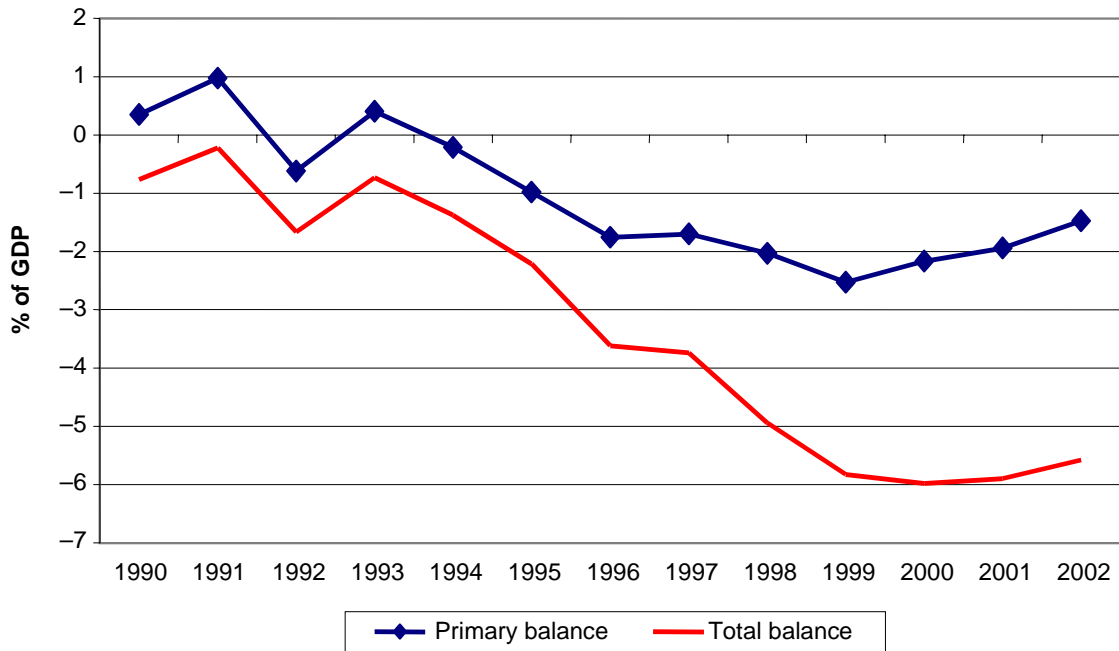
Total and primary balance of the non-financial sector



Graph 3
Revenue and expenditure of the central government



Graph 4
Total and primary balance of the central government



Methods to assess the fiscal effect

The economic literature describes a variety of channels through which fiscal policy affects monetary policy and inflation in the short term. The BRC has been using various methods to assess these effects in Colombia. A synthesis of these channels and methods follows:

- The effects of changes in taxes, utilities' prices, subsidies and commercial tariffs on inflation are particularly important for central banks with inflation targets, and in countries where taxes, subsidies and tariffs are modified frequently. Even though these changes technically have an effect on the price level, with only a transitory impact on inflation, the evidence shows that these effects can be permanent when the changes have an impact on inflation expectations. The input-output matrix is the main instrument used by the BRC to assess these impacts. It is assumed that the impact of changes in value added tax on the CPI is half the impact derived from the matrix.² This methodology has not been suitable for determining the impact of significant changes in administered prices (such as petrol) on inflation.
- The effect of fiscal policy on expenditures will be greater if there are a large number of agents whose expenditure decisions are based on their current disposable income. The effect on interest rates and exchange rates depends mainly on the structure of the government's financing. When there is an increase in the government's financing needs, and such needs are financed domestically, there will be upward pressure on interest rates, and a crowding-out of private investment. Conversely, if the government finances itself externally, and the government is clearly solvent, an appreciation of the exchange rate tends to occur, and the production of tradable goods is displaced. If there are doubts about the long-term sustainability of the public debt, the fiscal policy also affects the risk premium and generates unexpected movements in the exchange rate and interest rates. Under this scenario, there is an impact on production, on inflation and on the credibility of the government and of the central bank. The control of short-term monetary policy becomes particularly difficult.

During some periods in the 1990s, both the external financing of the fiscal deficit and the revenues from privatisations and concessions had a significant impact on the exchange rate. More recently, doubts about the government's ability to access external financing resulted in a highly volatile exchange rate. Even though there is no strong econometric evidence of the relationship between the fiscal deficit and interest rates, consumption and investment, the stylised facts indicate that interest rates tend to increase in periods of high domestically financed fiscal deficits.

On the other hand, following the IMF methodology, the financing accounts of the public sector are incorporated into the macroeconomic programming exercise carried out by the BRC and the Ministry of Finance. This exercise allows an evaluation of the financing space available for the private sector, and identifies eventual pressures on interest rates, taking into account the inflation target as well as projections of the balance of payments and economic growth. The size of the sustainable current account deficit is determined by the assumptions on the external financing of the public and private sectors, as well as the accumulation of international reserves. This information is used to determine a real exchange rate compatible with the financing restrictions.

Currently, the BRC's Economic Research Department is working on a public debt module within their model of monetary policy transmission mechanisms. In this model, higher indebtedness is transmitted to the interest paid on the debt, determined endogenously, and affects uncovered interest rate parity. Changes in the uncovered parity cause an increase in expectations of devaluation. Higher devaluation generates pressure for higher prices on imported goods and, through the Phillips curve, increases core inflation. An increase in interest rates is a usual policy reaction. According to this model, the effect of an expanded fiscal deficit on economic activity depends on: (i) the direct impact of expenditure on output growth; (ii) the reactions of the exchange rate and spreads to an increase in public sector indebtedness; (iii) the expected pass-through of devaluation into inflation; and (iv) the aggregate demand response to changes in the interest rates and the exchange rate.

Finally, when excessive increases in public wages (as occurred in the 1990s) flow through to the private sector, real wage increases above the growth of productivity lead to falls in employment and investment and accentuate the pressure for higher prices. This may cause the BRC's anti-inflation policies to lose the support of the government and society at large.

² The matrix calculates the maximum impacts of such changes on the consumer and producer price levels.

3. The long-term sustainability of the public debt and monetary policy

As mentioned in the introduction, the long-term effect of fiscal policy on monetary policy is closely related to the sustainability of the public debt. In times of persistent real growth in public indebtedness, the central bank must determine if the fiscal initiatives are sufficient to reach a desired fiscal position in the future. Moreover, the central bank must assess whether these actions jeopardise its ability to achieve and maintain price stability, or compromise the credibility of economic policy.

If fiscal adjustment does not take place to reverse an unsustainable debt path, it is foreseeable that the domestic and international markets would not lend new resources to the government, or they would only do so at exceptionally high interest rates. Furthermore, market agents may expect the government to press for higher inflation as a way of reducing the real value of its debt, rather than increasing taxes and/or cutting expenditures. The subsequent loss of confidence in the economy, along with increasing concerns about inflation, interest rates and devaluation of the exchange rate, would be harmful to both the private and public sectors. These issues could lead the central bank to relax its primary goal of price stability.

Beyond the dynamics of the public debt to GDP ratio, market agents assess fiscal sustainability through a wide set of economic variables related not only to the public finances but also to the remaining macroeconomic indicators. Such variables may be examined through the familiar “primary balance to GDP ratio”, necessary to keep stable the ratio of public debt to GDP. Under this benchmark approach, such primary balance results from the intertemporal budget constraint; moreover, fiscal sustainability also depends upon the projected real interest and economic growth rates.

An additional set of external and internal indicators, which reflect the solvency and vulnerability positions of the country, must also be assessed. This will provide policymakers with valuable information to improve their public debt management, and to reduce the vulnerability of the country to internal and external shocks. The management of the debt is closely associated with the magnitude and sustainability of the debt itself. The optimal long-term debt management strategy is based on minimising the debt service cost, as well as reducing the exposure to main risks (market, rollover, liquidity, macroeconomic risk, etc). Such optimal strategy dictates that debt repayments do not exceed sustainable amounts.³

In sum, debt sustainability is an integral element of macroeconomic stability. Interactions between different policy variables (debt, public revenues and expenditures, etc) and outcome variables (GDP, exports growth) as well as the dynamics of the international economy (external interest rates) jointly determine whether the country is on a sustainable debt path.⁴

Dynamics and profile of the current public debt

During the first half of the 1990s, the Colombian public debt to GDP ratio decreased 13 percentage points, as a result of the fiscal balance, a higher GDP growth rate, and the prepayment of the foreign public debt, with resources coming from the sale of assets and from telecommunications licence fees. However, from 1995 onwards, this ratio has increased sharply to its current unprecedented level. The following information on the stock, currency composition and term structure of the current public debt is relevant for the analysis of its sustainability:

- The gross public debt rose from 26% of GDP in 1995 to 61% by 2002. Throughout this period, the evolution of the public indebtedness in domestic and foreign currency was quite similar. The internal debt to GDP ratio increased from 12% to 31%, whereas the external debt to GDP ratio went up from 14% to 30%. After discounting the financial liabilities among the public agencies, the resulting net public debt to GDP ratio, in 2002, climbed to 52%. Such a concept of net public debt is the one relevant in the analysis of debt sustainability.
- Currently, 85% of the consolidated public debt is incurred by the central government. The financial liabilities of the remaining public agencies (departmental and municipal general

³ Arbeláez and Roubini (2002).

⁴ Ghani and Hyungsoo (1995).

governments as well as public enterprises) are relatively small, and have shown a decreasing trend. Therefore, the sustainability analysis of the Colombian public indebtedness is essentially an analysis of the sustainability of the central government's debt.

- The 1998-99 crisis in the financial system raised the level of public indebtedness. To counteract the crisis, the central government issued bonds equivalent to nearly 1.5% of GDP in 1999, and a further 3.9% of GDP in 2000. Moreover, it closed some public financial institutions. In addition, the government has been facing some contingent liabilities, particularly those associated with the pension system. The present value of these liabilities has been estimated at 193% of GDP by Clavijo (2002). This type of public debt is not taken into account in the fiscal sustainability analyses.
- The service cost of the public debt (amortisations and interest payments) has been increasing sharply in recent times. In the case of the central government, such cost went up from 29% to 77% of current revenues between 1995 and 2001. Nowadays, 32% of the central government's current revenues (4.1% of GDP) are devoted to meeting interest payments.
- As of December 2002, the breakdown of the central government's financial sources was: 39% in bonds issued in the Colombian capital market; 30% in foreign bonds; and 14% in foreign loans. Currently, 17% of the central government's debt portfolio is attributable to unexpected events such as the Housing Law, the public banking bailout and liabilities related to other public entities. The leading domestic security issued by the central government, known as the TES B bond, was owned 38% by the public sector and the BRC (including 13% by the social security system and 14% by public enterprises); 27% by the financial sector; and 36% by the private non-financial sector.
- As of December 2002, 66% of the debt of the central government paid fixed interest rates, 14% floating rate, and 20% semi-floating rate (multilateral debts). The modified duration of this portfolio is 3.5 years, and its average maturity is 6.3 years. The breakdown of the interest rate for TES Bs was: 49% fixed rate (in pesos); 19% indexed to CPI; 25% indexed to UVR (real value units; an alternative form of inflation indexation); and 7% indexed to the US dollar. The average life of such debt is 6.2 years.

Debt sustainability concepts

Theoretically, a fiscal policy is sustainable if the government's intertemporal budget constraint is satisfied. In terms of present value, it means that the path of future public revenues minus the path of future public expenditures (less interest payments) is at least equal to the current value of the public debt. The difference between public revenues and public expenditures defines the primary fiscal balance. Through this present value analysis, the current public indebtedness tends to zero in the very long term.⁵

The stability of the public debt to GDP ratio provides a practical way to evaluate the sustainability of a given indebtedness level. If such a ratio follows a stable path, the current debt level is sustainable, and there should be no problems in meeting future repayments. By contrast, if the ratio increases alarmingly for a considerable span of time, the fiscal stance must be modified to reverse this trend. A high but stable public debt to GDP ratio is as sustainable as a lower one, albeit the fiscal effort to sustain an initial high level of indebtedness is greater.

Various conclusions may be derived from this approach. The first one is that, in principle, the public debt must grow at a real rate lower than the effective interest rate.⁶ If this is not the case, the path of the public debt becomes explosive. The second conclusion has to do with the dynamics of both the

⁵ The discount factor used in this analysis is given by the ratio of economic growth rate to real interest rate. When the real interest rate is higher than the economic growth rate, as it frequently is on average, the discount factor is lower than one, and therefore the present value of the public debt is equal to zero.

⁶ According to Blanchard and Fischer's (1992) definition, the effective interest rate is equal to the inverse of the discount factor, ie $\frac{1+r}{1+g} - 1$, where r is the real interest rate and g is the real economic growth rate.

fiscal imbalance and the public debt in a large group of emerging economies, among them Colombia. Because these countries are running primary deficits, and have a significant stock of public debt, it is imperative to run primary surpluses as soon as possible, so that the public debt becomes sustainable.

The third conclusion is precisely related to the size of the primary surplus required. The size depends on the various macroeconomic scenarios, characterised by alternative combinations of economic growth rates and real interest rates as well as by the public debt to GDP ratio, considered sustainable.⁷ By definition, the key indicator of sustainability - primary balance to GDP ratio - is a medium- and long-term concept. It is not advisable to make sustainability analyses on the basis of observed or projected short-term data. Such analyses should be very careful to include a long-term horizon, as well as the relationship between public revenues and expenditures and other pertinent macroeconomic variables.

Finally, given that a sustainable fiscal programme depends on the relative uncertainty of fiscal and macroeconomic variables, it is crucial to foster sufficient credibility for the public policy. The degree of confidence in the government's ability to achieve a sustainable debt path, as well as the overall expectations of the economy as a whole, are important influences on access to both the internal and external financial markets.

Evidence of debt sustainability in Colombia

Graphs 5 and 6 illustrate the evolution of the public debt and primary balance for both the central government and the public sector at large since 1990. At the beginning of the 1990s, the central government had a primary surplus to GDP ratio of 1%. From 1993 onwards, this ratio became increasingly negative, reaching a deficit of 2.5% of GDP in 1999. In 2001, the primary balance to GDP ratio for the government was -1.9%, while the consolidated public sector registered a primary surplus to GDP of 0.6%. According to a BRC analysis, the leading cause for the increasing indebtedness of the central government through the 1990s was the evolution of the primary deficit; see Hernández et al (2000). Graph 7 illustrates the dynamics of both the real interest rate and the rate of economic growth. The wide gap between these two variables, which hit a maximum of 18 percentage points during the second half of the 1990s, led to the further expansion of the debt to GDP ratio.

The various sustainability studies done in Colombia suggest that in order to maintain the current net public debt to GDP ratio (of 50%), it is necessary to achieve fiscal primary surpluses of 2 to 3% of GDP. Taking into account the contingent liabilities, particularly those related to the pension system, the public sector would have to add 0.5% of GDP to such primary surpluses.⁸

Posada and Arango's (2000) sustainability findings indicate that the public sector must generate a fiscal primary surplus of 1.5 to 2% of GDP, in order to stabilise the public debt to GDP ratio at 39%. This study uses a time horizon of 50 years, an average (steady state) GDP growth rate of 4%, and an estimated real interest rate on public debt of 7.15%.⁹ Nevertheless, it is important to realise that the public debt to GDP ratio is now 12 percentage points higher, and the potential growth rate of GDP is near 3%.

A more recent study, Clavijo (2002), shows that the fiscal primary surplus to GDP ratio necessary to keep the ratio of public debt to GDP stable at 50% falls between 2.5 and 3%. These figures are derived from more plausible scenarios, among them a real interest rate of 8%, and an economic growth rate of 2 to 3%. Arbeláez et al (2002) analyse a wide range of debt sustainability scenarios, including not only the steady state model (or benchmark approach), but also the model used by the central government itself. Assuming a permanent growth rate of 3%, and a permanent real interest rate of 7.5%, the primary surplus required to stabilise the public debt to GDP ratio at 50% is 2.25%.

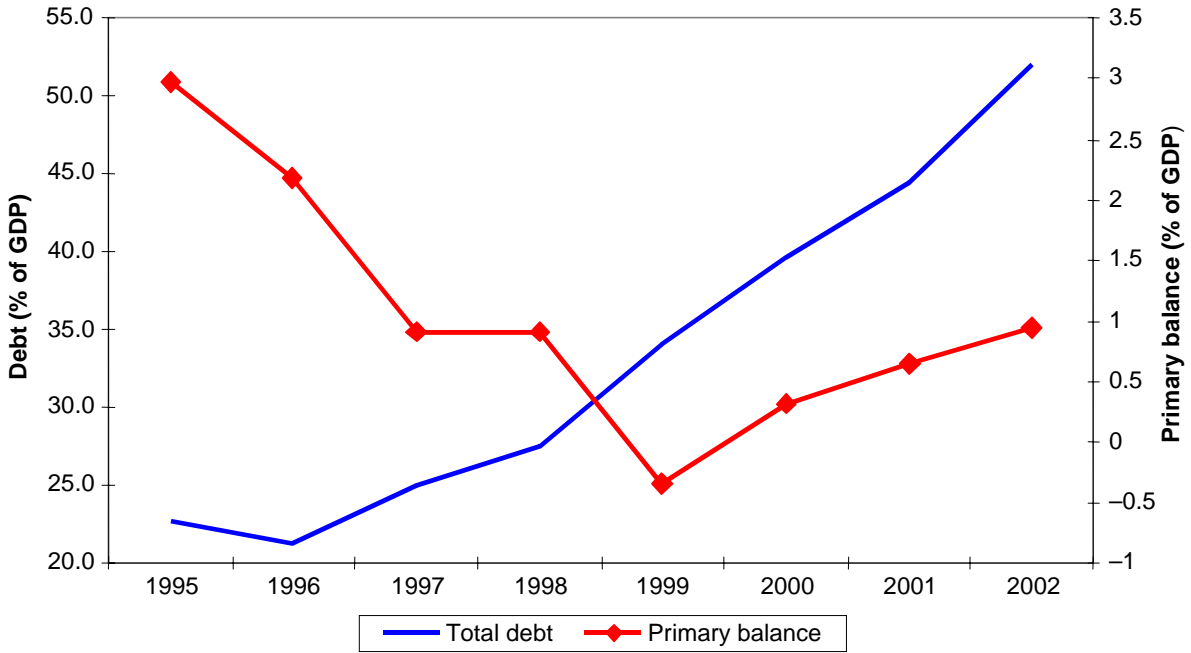
⁷ An extension on determinants of debt sustainability could include the inverse relation between the seigniorage and the debt to output ratio. See Lozano (2001).

⁸ Clavijo (2002, p 19).

⁹ This real interest rate is estimated using the average yield of the US Treasury and the average level of the spreads of Colombian sovereign debt.

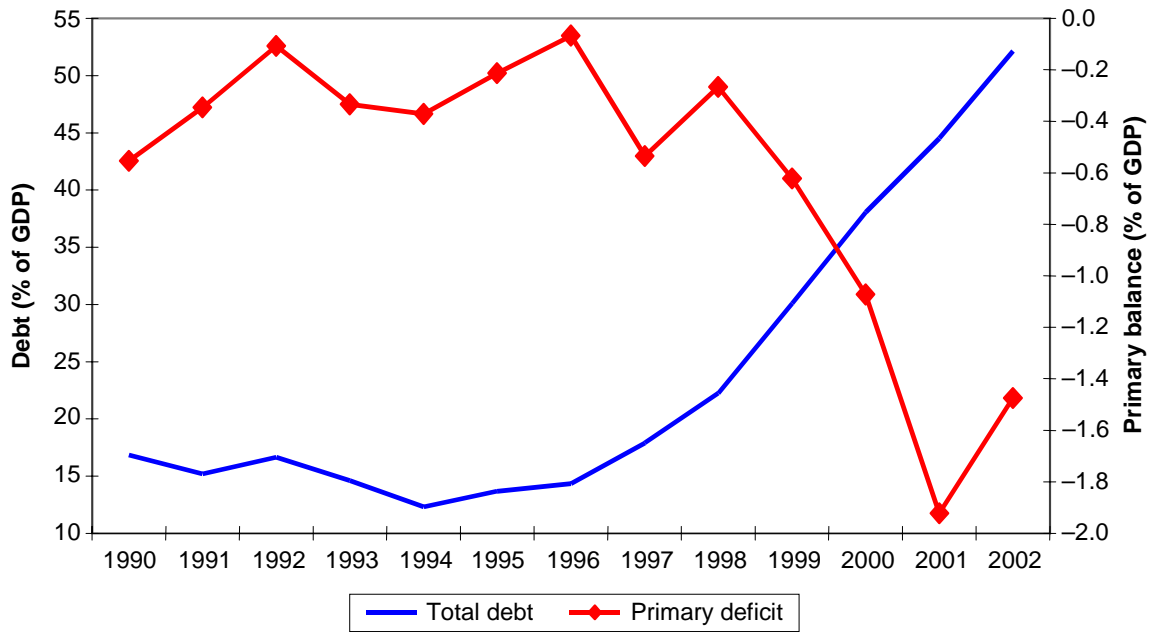
Graph 5

Primary balance and net debt of the non-financial public sector

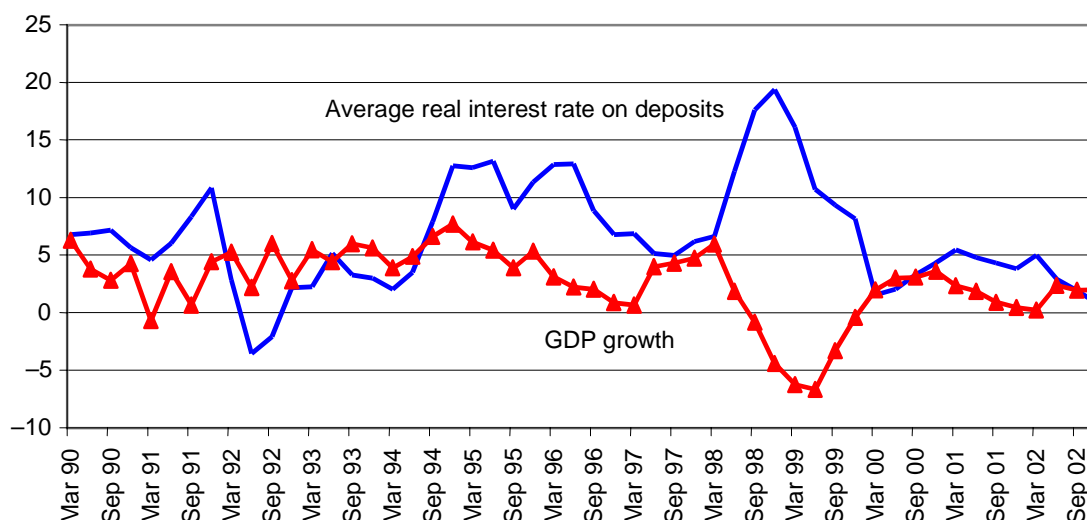


Graph 6

Primary balance and debt of the central government



Graph 7
Real interest rate and economic growth



The medium- and long-term projections of the fiscal accounts, based on the government's model, are not surprising. This model concurs with the recent IMF Standby Programme for Colombia, which assumes an average medium-term economic growth rate of 3.6% for 2003-10. Under this programme, the fiscal deficit would decline from an expected value of 4% of GDP in 2002 to 2.5% in 2003 and 2.2% in 2004, which will smooth the public debt trend. The model takes into account the fiscal effects of the economic reforms approved between 2001 and 2002: tax reform (Law 788 of 2002); expenditure reform (Law 617 of 2002); transfers reform (Legislative Act 1 of 2001); pension system reform (Law 797 of 2002); and restructuring, merging and closing of some government departments and agencies (Law 790 of 2002).¹⁰ As Graph 8 shows, under this scenario, the net public debt would reach nearly 60% of GDP by 2010. If it were not for the above-mentioned reforms, the debt would reach 87% of GDP. The estimated level of 60% could still require an additional primary surplus of about 1.8% of GDP, in order to maintain the fiscal policy.¹¹

The following solvency and vulnerability indicators complement the previous debt sustainability analysis: (i) external indicators such as reserves/short-term external debt, reserves/imports, external debt/imports, and external debt/exports; (ii) central government indicators such as tax revenue/debt service and interest payments/total revenue; (iii) non-financial public enterprise indicators such as their debt/GDP. Table 1 displays the behaviour of these ratios in the period 1990-2001, and the current estimate for 2002.

Regarding the external vulnerability indicators, the reserves to short-term external debt ratio, which is a measure of *reserve adequacy* in countries with uncertain access to capital markets, did not show a clear tendency during the second half of the 1990s. The reserves to imports ratio averaged 104% in 1990-94. Subsequently, it went as low as 64% in 1998. By 2001, it increased to 86%, close to the 95% average level predicted for 2002.

¹⁰ This baseline scenario does not contemplate some potential expenditure shocks, associated with the country's increasing investment needs in the military, justice, infrastructure and social sectors.

¹¹ Arbeláez et al (2002, p 17).

Table 1

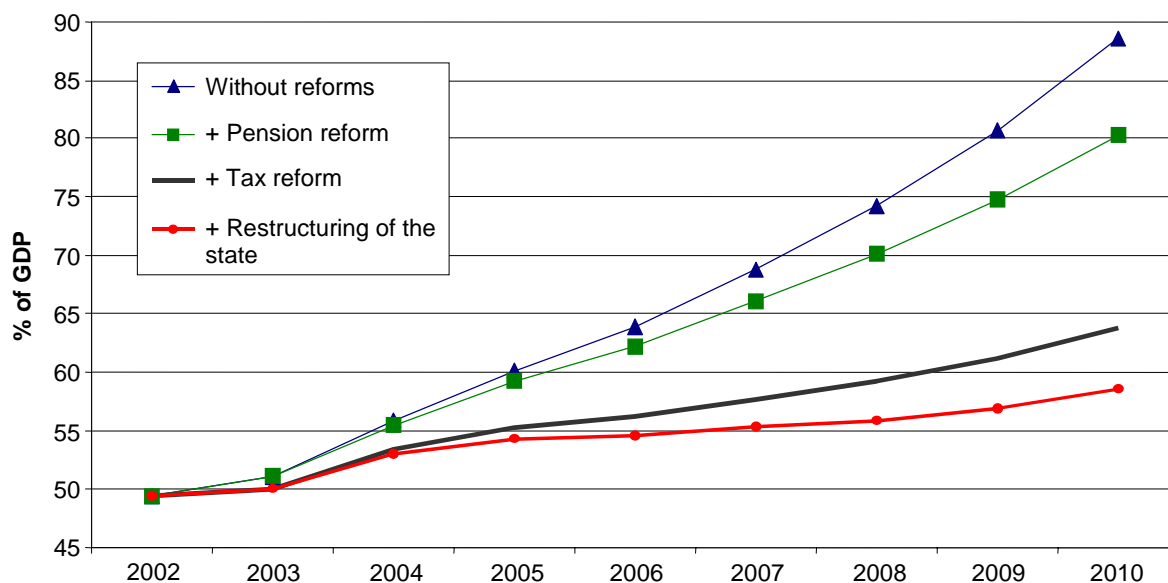
Colombia: selected economic indicators

	Average 1990-94	1995	1996	1997	1998	1999	2000	2001	2002e
General indicators									
GDP (USD billions)	59.8	92.5	97.2	106.7	98.4	86.2	83.2	82.4	80.5
GDP (annual % change)	4.3	5.2	2.1	3.4	0.6	-4.2	2.7	1.4	1.6
Exports ¹ (USD billions)	7.6	10.2	10.5	11.5	10.9	11.6	13.1	12.2	12.1
Imports ¹ (USD billions)	7.2	12.9	12.7	14.3	13.6	9.9	10.7	11.8	11.3
Reserves (USD billions)	6.9	8.4	9.9	9.9	8.7	8.1	9.0	10.2	10.7
NFPS² fiscal indicators									
Fiscal deficit (% of GDP)	-0.1	-0.3	-1.7	-2.8	-3.7	-4.1	-4.2	-4.3	-4.4
Expenditure ³ (COP trillions)	10.0	23.7	32.9	41.5	48.1	57.5	65.9	73.8	80.0
Revenue ³ (COP trillions)	10.1	23.5	31.2	38.1	42.9	51.3	58.6	65.6	71.1
Debt (COP trillions)	...	21.9	25.7	36.5	48.7	63.5	84.1	101.4	110.1
External debt ⁴ (COP trillions)	0.7	1.6	1.3	1.2	1.5	1.3	0.4	0.7	1.3
Interest (COP trillions)	1.4	2.8	3.9	4.5	6.4	5.7	7.9	9.4	10.2
Sustainability indicators (%)									
Reserves/short-term external debt	...	94.0	110.0	112.0	97.0	94.0	114.0	104.0	106.0
External debt ⁵ / imports	287.0	204.0	244.0	241.0	269.0	370.0	342.0	336.0	335.0
External debt ⁵ / exports	249.0	259.0	295.0	298.0	335.0	317.0	278.0	326.0	313.0
Reserves/imports	104.0	66.0	78.0	69.0	64.0	82.0	85.0	86.0	95.0
External debt/GDP	32.0	28.0	32.0	32.0	37.0	43.0	44.0	48.0	47.0
CG ⁶ tax/ debt service	277.0	339.0	216.0	196.0	168.0	122.0	138.0	129.0	128.0
CG ⁶ interest/ revenue	11.0	13.0	18.0	19.0	28.0	31.0	34.0	30.0	32.0
NFPS ² interest/ revenue	14.0	12.0	13.0	12.0	15.0	11.0	13.0	14.0	14.0
NFPS ² debt/GDP	...	26.0	26.0	30.0	35.0	42.0	48.0	54.0	54.0

¹ Balance of payments basis. There was a methodological change in 1994 with the adoption of the IMF's BoP Manual V. ² Non-financial public sector ³ Net of transfers. ⁴ Short-term external debt including BRC, decentralised government agencies, central government, banks and other financial corporations. ⁵ Since 1994, external debt has included leasing and securitisation. ⁶ Central government.

Source: BRC.

Graph 8

Net debt of the non-financial public sector: 2002-10

On the other hand, the external debt to exports ratio measures the debt trend, which is closely related to the repayment capacity of the country. In the period 1990-94, this ratio was 249%, on average. By 1998, it increased to 335%, and by 2001 it was 326%. Likewise, the external debt to GDP ratio, which is useful for relating debt to the resource base, rose between the first and the second half of the 1990s.

According to some international institutions, vulnerability is often greater for smaller and emerging market countries because their economies may be less diversified, have a smaller base of domestic financial savings, and less developed financial systems. Moreover, they could be more susceptible to financial contagion through the relative magnitudes of capital flows.¹²

The reversal in public sector indicators between the first and the second half of the 1990s is clear. In the period 1990-94, the tax revenue to debt service ratio (for the central government) was, on average, 277%. Thereafter, this index decreased, and by the end of 2001 it went down to 129%. The interest payments to revenue ratio (also for the central government) averaged 11% in the period 1990-94. Thereafter, it went up to 30% by 2001. In the last few years, the high cost of the central government's debt along with its dwindling tax revenues have become increasingly evident.

4. Countercyclical macroeconomic policy in Colombia

In spite of a strong negative external shock, in 1998, Colombia's monetary policy was particularly restrictive, mainly due to the following factors (not necessarily in order of importance):

- An inflation rate close to 16%, and increasing inflation expectations.
- A current account deficit of nearly 7% of GDP in the first quarter of the year, displaying an increasing tendency.
- Unsustainable growth of the economy in previous years.

¹² IMF and WB (2000).

- High and rising fiscal deficit and public expenditures as well as strong increases in the foreign debt spread.
- High and rising foreign debt of the private sector.
- Underdeveloped markets for hedging currency risk.
- The exchange rate system was a crawling band.
- Evidence of a high pass-through of the exchange rate to inflation and a new government that promised a large devaluation of the real exchange rate.
- The closing of the international capital markets and the relatively high interest rates in the United States.

These factors led to an increase in foreign (US) interest rates, devaluation expectations and the country risk premium. In addition, there was a growing dissatisfaction evident with economic policy as well as with the new government's lack of commitment to fiscal adjustment. The monetary policy response was then to elevate the intervention rate of the BRC, to intervene in the foreign exchange markets, and to devalue the exchange rate band.

By contrast, during the period 2000-02, monetary policy was expansive mainly because of the following conditions (again not necessarily in order of importance):

- Single digit inflation rates as of the second half of 1999, and markets with decreasing inflation expectations.
- Equilibrium (or a small surplus) of the current account of the balance of payments.
- A negative GDP gap and very high unemployment rates.
- An Extended Facility Agreement signed with the IMF for three years, as of late 1999.
- A high fiscal deficit with a decreasing trend, consistent with the IMF agreement, as well as a high public debt but with a low short-term component. As of the second half of 2000, there was a strong reduction in foreign debt spreads.
- A fragile financial sector and evidence of a credit crunch.
- A reduction in the external debt of the private sector, and a rapid development of the hedging market.
- A floating exchange rate regime and the opening of international capital markets.
- A strong devaluation of the real exchange rate before the implementation of the free-floating system in September 1999.
- The reduction of the intervention rate by the US Federal Reserve, in the last 18 months.

All these factors helped reduce foreign interest rates, and increase the trust and credibility in monetary policy. Under these conditions, the BRC's response was to reduce its intervention rate, to float the exchange rate and to supply a large amount of liquidity. The inflation rate was lowered, and the BRC's targets were easily met in 2000 and 2001. For 2002, inflation of 6.9% was expected (as of September), above the 6% target, mainly as a result of the exchange rate devaluation as well as a considerable increase in the prices of some food products. The fiscal policy, as was expected from the deficit and debt indicators, was not expansive.

In sum, the chief factors that determined the (in)ability of the Colombian economic authorities to carry out countercyclical macroeconomic policies were: (i) the size and sign of the output gap; (ii) the inflation rate and its deviation from the BRC's long-term target; (iii) the level, cost and term structure of the foreign and domestic debt of both the public and private sectors; (iv) the currency composition of the public and private sectors' debt as well as the degree of development of the hedging markets; and (v) the pass-through of the exchange rate to prices.

More exactly, by 1998, when inflation, inflation expectations, the pass-through, US interest rates, and the fiscal and current account deficits were high, and despite the negative external shock faced by the Colombian economy, the country's economic authorities were not able to carry out effectively a countercyclical macroeconomic policy. In more recent years, when inflation, the pass-through and the current account deficit have been low, yet unemployment and the level of the public debt have been

high and rising, the countercyclical policy has been limited to monetary policy decisions. The effectiveness of this policy will largely depend on the level and tendency of the public indebtedness, and particularly on the degree of commitment of the government and congress to its sustainability. The reforms of taxes, the pension scheme and the labour system, approved in late 2002, are a positive step in this direction.

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Fiscal issues and central bank policy in the Czech Republic

Ivan Matalik and Michal Slavik¹

1. Introduction

Macroeconomic analysis in the Czech Republic in recent years has increasingly focused on fiscal policy. The reason is the deterioration in the Czech public finances, which has a structural character rather than being caused by the business cycle. These fiscal policy developments have significant consequences for the implementation of monetary policy.

A fiscal analysis that evaluates in more detail the effect of fiscal policy on economic and monetary developments therefore enables more effective coordination of monetary and fiscal policies. In particular, fiscal developments significantly constrain monetary policy strategy and affect the timing of the adoption of the euro. Against this background, this paper describes some of the characteristic features of fiscal policy during the Czech Republic's economic transformation since the start of the 1990s.

2. Economic transformation and fiscal policy

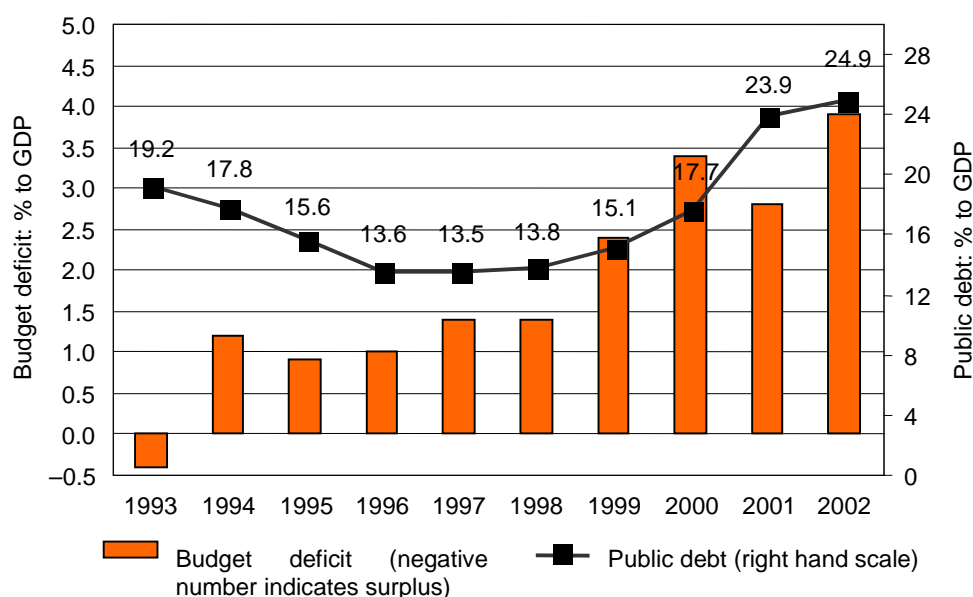
We can divide Czech fiscal policy during the economic transformation into two basic phases. The first period, roughly from 1993 to 1998, could be characterised as "conservative" fiscal policy that aimed at achieving a balanced state budget and a reduced role for the state in the economy. In the second phase, running from 1998 up to the present, fiscal policy has conversely been directed at strengthening the state's role in the economy. One of the consequences is a growing public finance deficit. The widening deficits of the general government budget now place at risk the achievement of economic and monetary policy objectives.

In the period 1993-98, the government's fiscal policy was directed towards establishing a legislative and technical framework comparable to that in modern market economies. This entailed implementing a series of fundamental measures as part of the ongoing economic reform process. In the public finance area, it involved, for instance, introduction of a completely new tax system from January 1993 and an explicit fiscal target of no increase in the nominal state debt (implying a decrease as a ratio to GDP). There was an intensive political and economic debate about establishing a legislative requirement for balanced state budgets, but the proposals were not accepted by the parliament.

Since 1998, the government's fiscal policy has been based on other, often opposite, priorities than in the foregoing period. Although the original fiscal policy target for the period 1998-2002 was the maintenance of balanced public finances, in 2002 the government openly opted for promoting economic growth by means of public budget deficits. Some special off-budgetary institutions were established to carry out public investments in certain areas. This decreased the control of the ministry of finance over the overall development of the public finances and led to a further fragmentation of government budget structure. Graph 1 shows the different trends in the development of the public debt in these two periods.

¹ Thanks to Jaroslav Kochanicek and Pavel Soukup for helpful comments. The views presented here are those of the authors and do not necessarily reflect those of the Czech National Bank. An earlier version was presented at the Oesterreichische Nationalbank's workshop on "Fiscal Policy Monitoring in the ESCB - Perspectives for the Accession Countries" held in Vienna, 6 November 2002 and is forthcoming in their working paper series.

Graph 1
Fiscal developments since 1993



Source: Czech National Bank, based on the IMF's GFS approach.

The precise size of fiscal variables is uncertain in all transforming countries – and the Czech Republic is no exception. This is because large-scale one-off fiscal and quasi-fiscal operations were carried out in the 1990s that are not easy to classify. These include transfers of bad loans from the banking sector into a special government institution or state guarantees given to the banking sector to support bank loans to state companies. Classifications of such operations using different methodologies (GFS, ESA95) give different pictures of fiscal developments. Although these operations are precisely recorded in the cash-based accounting, the timing of their economic impact and hence their recording in the accrual accounting is uncertain. The openness and transparency concerning “hidden debts” – ie debts that were accumulated outside the government sector but have (or will have) a public character and will become part of the official public debt – can also significantly affect fiscal indicators.

3. Public finances during the economic transformation

Definition of the public sector and measurement approaches

The Czech Republic has a highly fragmented government sector. The basic structure of the public sector is similar to that in other countries, comprising central government, local governments, extra-budgetary funds and health insurance companies. But within the central government level there are large public institutions, such as the Czech Consolidation Agency and the National Fund, which complicate the analysis. There are a total of nine extra-budgetary funds with separate management, two of which are privatisation funds and seven are special purpose investment vehicles (eg for investments in transport infrastructure, housing and environment projects). They were established to exclude some projects from the annual planning horizon and political pressures that apply to the state budget and so allow a longer time horizon for their investments and planning.

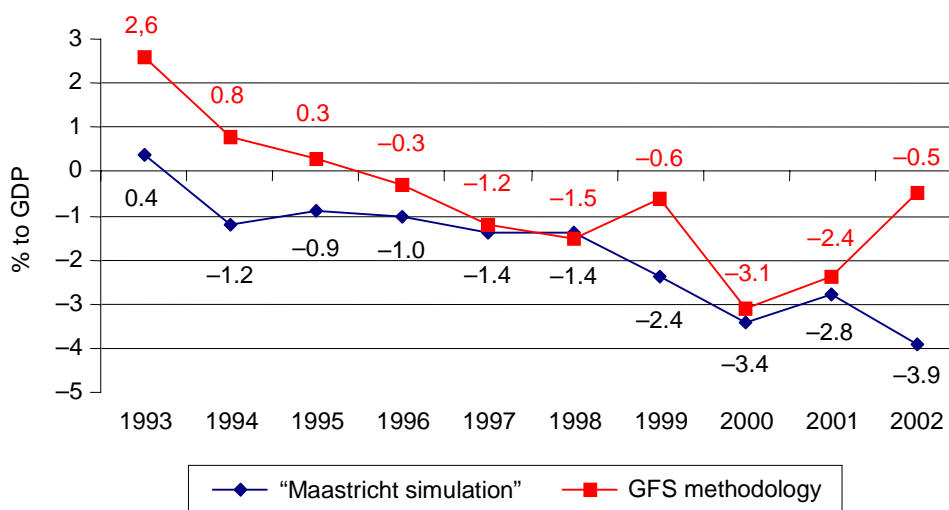
Public finances should be evaluated in a wider context of the impact of fiscal variables. Accordingly, public finance analyses should take account of all levels of government: the state budget, the extra-budgetary funds, possible quasi-fiscal activities of the central bank or other financial and non-financial institutions, the state's assets, expected government revenues, and the direct and indirect liabilities of the government. It is necessary to investigate the starting position of public finances; their sensitivity to short-run shocks (from macroeconomic conditions or the realisation of guarantees); the medium-run

sustainability of expenditures and state debt; and the legal and organisational issues relating to the management of the public finances.

The “cash” approach previously used to monitor public finances has been replaced by the more systematic GFS methodology of the International Monetary Fund. Given the large volume of extraordinary transactions on both revenue and expenditure sides (eg sales of state property, coverage of losses in the banking sector) and the absence of prompt data about the budget balance derived from the national accounts, it was necessary to adopt a surrogate method closer to the ESA95 approach used in the EU countries. This method (sometimes called a “Maastricht simulation”, as it gives an approximation of the deficit referred to in the Treaty) involves taking the available GFS cash deficit and projecting the extraordinary transactions such as privatisation revenues and government transfers to transformation institutions to cover their accumulated debts.

Graph 2 shows the differences in the general government balances reported using these two methods. The deficit in 2002 is larger according to the Maastricht simulation than the GFS methodology because of the inclusion of extraordinary privatisation revenues. As the amount of state-owned property declines, the government’s privatisation revenues are dwindling. As a result, the favourable impression of the budget balance given by the GFS methodology could be misleading as, unless there are substantial cuts in government expenditures, the balance is very likely to deteriorate soon.

Graph 2
Public sector balance

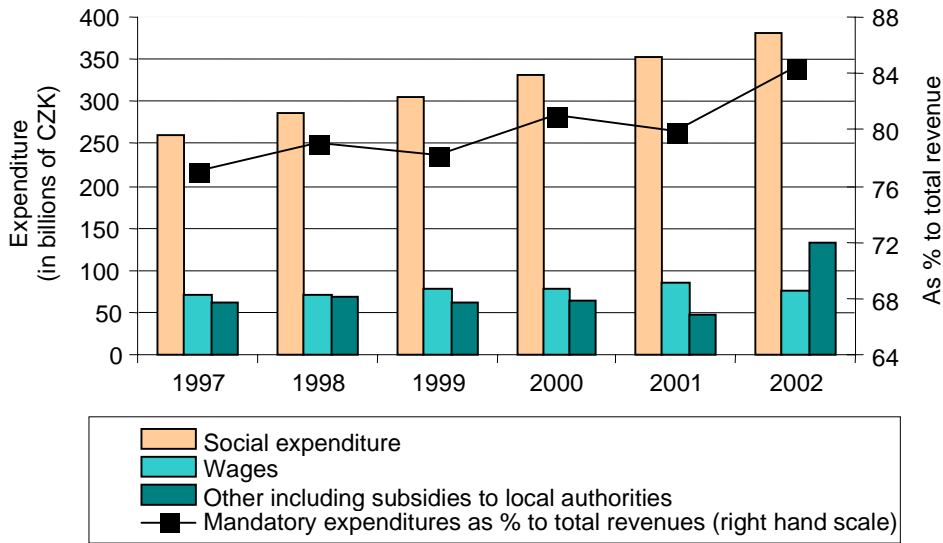


Sources: Czech National Bank; Czech Ministry of Finance.

Developments in the public sector since 1997

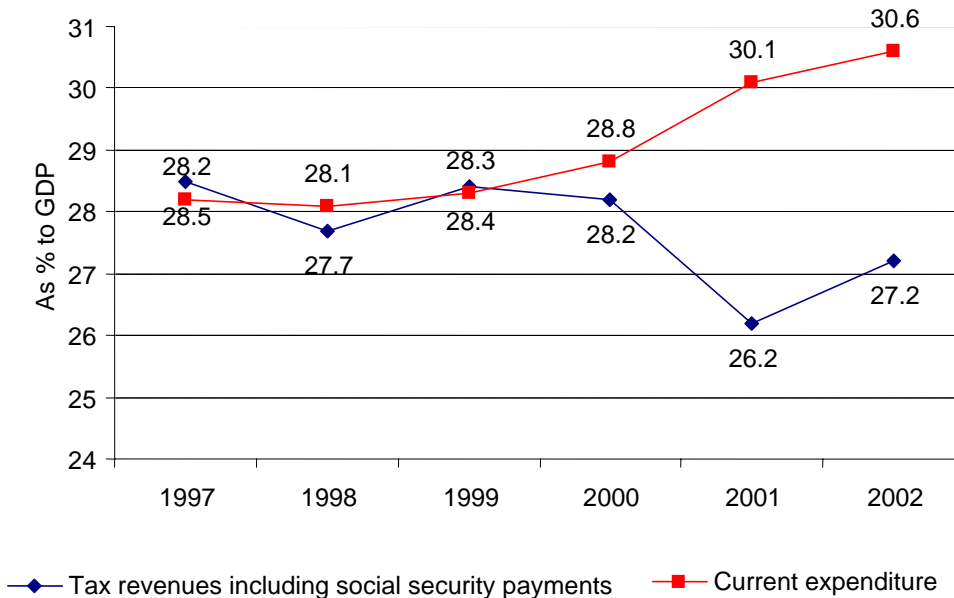
As Graph 1 shows, since 1997 public finances have been characterised by persistent deficits and a steadily rising public debt. The state budget deficit itself is the main cause of this deterioration, but the extra-budgetary funds are a potential danger, as they are highly dependent on privatisation revenues and the stock of state property is shrinking. One major reason for the growing deficits is the predetermined structure of state budget expenditures. The mandatory and quasi-mandatory expenditures – ie the legally required expenditures that cannot be changed in the short run at the government’s discretion – are a rising proportion of the total (Graph 3).

Graph 3
Mandatory expenditures



Sources: Czech National Bank; Czech Ministry of Finance.

Graph 4
State budget



Sources: Czech National Bank; Czech Ministry of Finance.

The bulk of mandatory expenditure consists of social expenditures – pensions, unemployment benefits and various other kinds of social benefits.

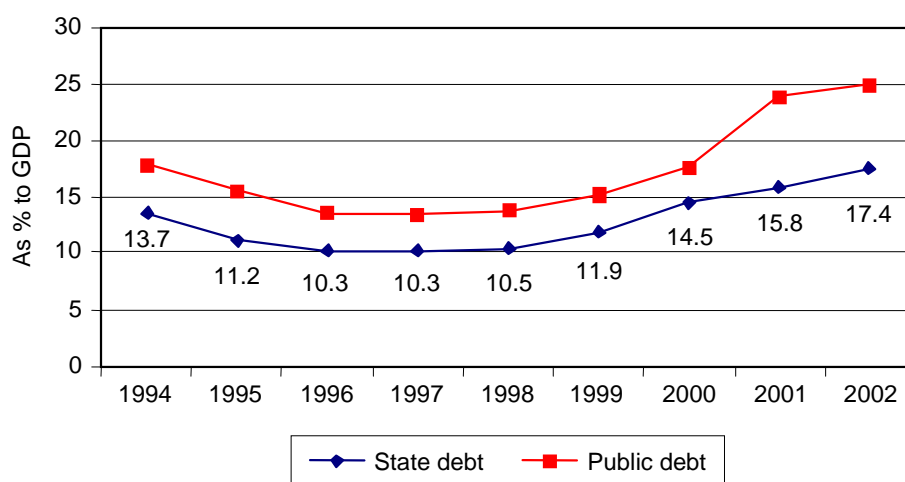
Another cause of the public finance deficits (according to the Maastricht simulation approach) is substantial use of extraordinary privatisation revenues in building infrastructure and housing. A

significant volume of these investments are financed from privatisation revenues which will not be available in the future. Their extraction from the GFS deficit gives a better picture about the current state of the government finances in the Czech Republic.

The public debt is an important indicator of trends in public finance. The Czech Republic has for many years had a relatively low public debt. But since 1998 debt has been rising steadily (Graph 5), reflecting the public budget deficits and the “transformation losses”.

The dynamics of the public debt depends on the speed of exposure of the “hidden debts” created during the transformation process and accumulated in special institutions (such as the Czech Consolidation Agency). The hidden debts are around 10% of GDP, so their inclusion would increase the public debt/GDP ratio to at least 35%; see Polackova-Brixi (2000) or Bezdek and Krejdl (2003).

Graph 5
Public/state debt



Sources: Czech National Bank; Czech Ministry of Finance.

4. New procedures for fiscal analysis

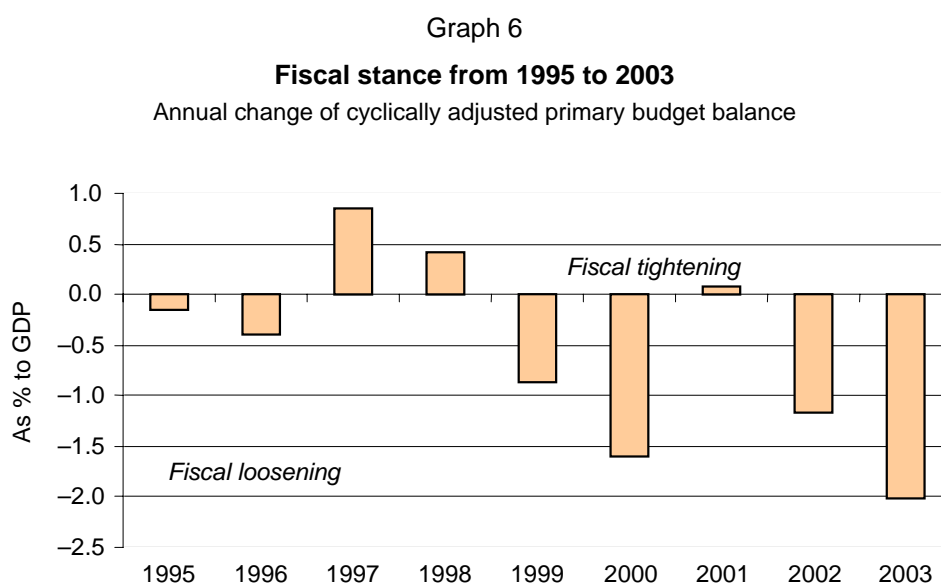
During the early years of economic transformation, the public finances have been subject to standard macroeconomic analysis. But given the relatively balanced state budget and initially low public debt, fiscal policy did not attract rigorous attention. This attitude changed substantially in the late 1990s, when the government deficit and public debt began to rise. Fiscal policy, which started to lose its stabilising function and was rather procyclical in certain periods, began to play a more significant role in economic development. The Czech Republic’s integration into the EU structures also increased demand for better fiscal data – for instance the SNA data on the government sector.

Fiscal analysis in the Czech Republic is primarily focused on key areas such as the public budgets, the fiscal stance, the fiscal impulse, the functioning of automatic fiscal stabilisers, and public debt. Relatively less attention is currently devoted to assessing long-term sustainability and the impact of the ageing population.

The budgets at all levels of the government sector are monitored in fair detail by the Czech National Bank (CNB). A major challenge is to speed up the transition to the standard SNA/ESA95 methodology. This is primarily a task of the Czech Statistical Office. However, the transition to and implementation of the ESA95 standards (such as accrual accounting) looks to be a long-term affair. The principles of accrual accounting are fully applied only in a small part of the public budgets (eg the National Property Fund and some of the smaller extra-budgetary state funds). Although preliminary ESA95 data are

available, they may be subject to revisions. The more accurate results are due later in 2003. A principal obstacle to using this information for economic policy is the long time lags. Improving the quality and shortening these lags would be more than welcome.²

At the end of the 1990s, the CNB became one of the first institutions in the Czech Republic that started analysing the cyclically adjusted public budget balance. This procedure, common in other European countries, provides better information about the economic behaviour of the budget balance and its interaction with the business cycle than the unadjusted budget balance. These analyses allow calculation of the “fiscal stance”. In the Czech Republic, we mean by this term simply the annual change in the cyclically adjusted public budget balance (Graph 6).



Source: Czech National Bank.

The adjustment method stems from the original OECD methodology (see eg Giorno et al (1995)). Rather than estimating potential output through a Hodrick-Prescott filter or Cobb-Douglas production function, information about the output gap generated by the CNB’s macroeconomic model is employed. The majority of tax components display a certain degree of sensitivity to the business cycle, whereas on the expenditure side probably only the unemployment expenditures do so, but the correlation is not very strong.

For achieving optimal monetary and fiscal policy coordination, the relevant analytical issues include not only assessing the fiscal stance per se, but in particular evaluating the way in which the fiscal stance feeds through into macroeconomic developments. Above all, this involves evaluating the effects of government economic policy on the individual components of domestic demand, on output and subsequently also on inflation. Accordingly, increased attention is being devoted to analysis of the fiscal impulse. However, it should be said that analysis in this area at the CNB is just beginning.

The CNB uses a macroeconomic model to forecast inflation. This model, however, does not have a full fiscal block. This means that there are obvious limitations in the evaluation of the fiscal influence on macroeconomic developments. In response, in 2001 an analytical framework was designed which endeavours to estimate the effect of the budget deficits on each demand component. Owing to a number of limitations in applying this analytical framework, the management of the CNB has approved

² The Czech Statistical Office currently produces the definite or semi-definite figures based on the ESA95 methodology with a time lag of approximately two years. Previous ESA95 data are only estimates by the Ministry of Finance.

a long-term research project to develop a model of the fiscal impulse. The NiGEM and QUEST models are currently being studied to see whether they meet the needs of this project.

Given the Czech Republic's integration into the European Union and EMU, the functioning of automatic fiscal stabilisers is also becoming a subject of analytical interest. The operation of such stabilisers would help the Czech Republic to fulfil the basic principles of the Stability and Growth Pact. Previous research in this area has focused primarily on measuring the partial elasticities of selected revenue and expenditure items with respect to fundamental macroeconomic variables. Certain linkages have been identified, for instance, between VAT collections and GDP and between personal income tax and GDP. Work on establishing a special analytical apparatus is currently in progress.

The rising level of public debt in the Czech Republic is heightening the importance of analysing the effect of the debt financing structure on certain macroeconomic variables. First and foremost is the "crowding out" effect, ie the impact of domestic public debt financing on interest rates and the availability of credit to the private sector. The analyses conducted so far suggest that the budget deficit is currently being financed with no apparent implications for interest rates and private sector financing. Another important area of analytical interest is a linkage between the exchange rate and external debt financing. Because of the Czech koruna's appreciation against the euro during 2002, the CNB and the Czech government concluded an agreement which, among other things, limits the use of bond issues on foreign markets for covering the budget deficit.

5. European integration and Czech fiscal policy

Numerous issues have been, and are being, dealt with in connection with the Czech Republic's entry into the European Union and later to EMU. The first group of issues comprises institutional measures such as fiscal decentralisation. New self-governing regions have been established and new budget rules have been issued for both central and local governments. Moreover, a large part of the legal system has been harmonised with EU requirements. This process is almost complete and in this regard we could say that the Czech Republic is ready to join the European Union.

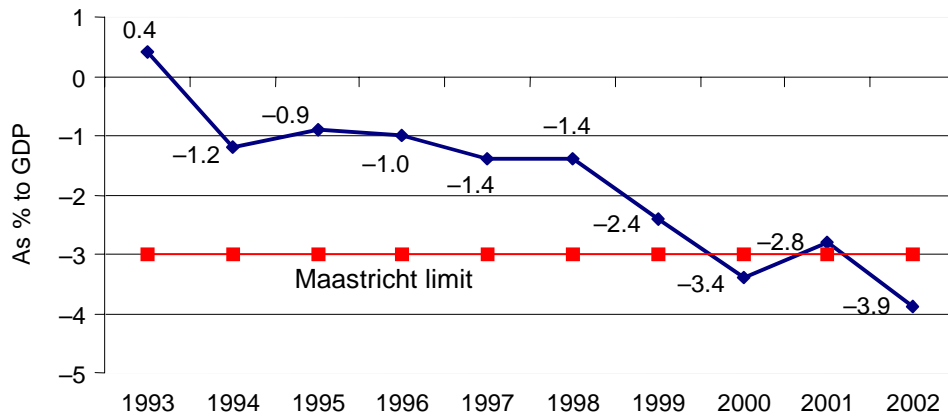
The second group of issues comprises the development of public finances and the need for consolidation to fulfil the Maastricht criteria. The budget deficit has exceeded the required 3% of GDP since 2000 (Graph 7) and is expected to exceed 6% in 2003. This is mainly due to structural problems, which are above all concentrated on the expenditure side of the budget and extra-budgetary funds. Fiscal policy is becoming one of the key medium-term risks to the Czech economy, as it is exhibiting a strong tendency towards procyclical behaviour. There are not sufficient instruments built into the system for addressing this problem at the moment, but the government is considering certain remedies as a part of the fiscal reform effort.

The need for fiscal consolidation is thus becoming a pressing issue. This consolidation should take the form of a mix of both revenue and expenditure measures, emphasising reform of the mandatory expenditures. Short-term measures to limit particular expenditures should be accompanied by long-term reforms, for example in the area of the pension system. Given the modest decline in the total tax burden, there might also be some space for measures on the revenue side. Although the real public finance consolidation process has not moved forward very much in the Czech Republic, the government's official obligation to fulfil all the conditions of EU accession provides a guarantee that this issue will be resolved in due course.

The Czech Republic's public debt is still well below the Maastricht limit of 60% of GDP (Graph 8) because of the favourable position of the public finances at the start of the economic transformation. However, since 1998 the public debt has doubled, and further growth can be expected unless the structural public finance problems are resolved. Although there is little danger that the Czech Republic's public debt will surpass the 60% limit in the next few years, it is still possible that it could exceed 40% of GDP once all the transformation losses have been covered. In this connection, there are pressing questions regarding the financing of the debt and related macroeconomic aspects regarding the development of interest rates and the exchange rate. A sharp rise in public debt caused by large consecutive public budget deficits (of around 7% of GDP) could ultimately lead to macroeconomic imbalances.

Graph 7

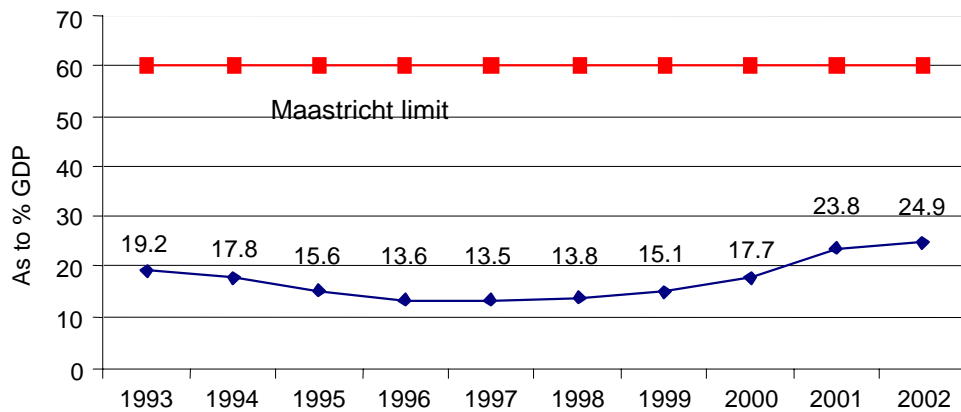
Public sector balance and the Maastricht criteria



Source: Czech National Bank.

Graph 8

Public debt and the Maastricht criteria



Source: Czech National Bank.

6. Conclusion

The Czech Republic's public finances have been characterised by persistent growth in the deficit and public debt. This reflects both "transformation losses" and structural problems built into the Czech public finances. The structural problems are concentrated both on the expenditure side of the state budget and in a number of extra-budgetary state funds. Mandatory state budget expenditures make up around 85% of all state expenditure. This severely limits the government's ability to implement discretionary fiscal policy. Fiscal policy in the Czech Republic is continuing to lose its stabilisation function and in the last few years has not been entirely in conformity with the principles applied in the European Union. The government has already recognised this problem and is trying to implement a fiscal reform that could solve some of the pressing fiscal issues.

Regarding the CNB's monetary policy, public finances are treated as one of the key medium-term macroeconomic risks. Given the current situation, with low GDP growth, the potential adverse implications of excessive government sector deficits are clearly visible. If the current trends in fiscal policy continue, this may give rise to serious macroeconomic imbalances, and to external imbalances in particular. Going forward, the considerable uncertainties regarding Czech public finances are therefore complicating the central bank's monetary policy-making, especially with respect to the need to set an optimal monetary policy mix.

Consolidation of Czech public finances is a current macroeconomic necessity not only with regard to the Czech Republic's EU integration efforts, but also for strong and sustainable macroeconomic development in the medium and long run. A stabilising reform of public finances has yet to be approved in the parliament, but given the government's explicit obligation to fulfil all the conditions of the Czech Republic's accession to the European Union and later on EMU, this objective should be fulfilled.

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The fiscal deficit and macroeconomic stability in Hong Kong SAR

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The consolidated government budget, which was broadly balanced or in surplus before 1997/98, turned into deficit in recent years and reached a historical high in 2001/02. Our estimates suggest that the bulk of the deficit is of a structural nature, as concluded in a government study released in early 2002. The deterioration in the underlying position has emerged due to persistent growth in recurrent expenditure and sharp declines in asset trade receipts and investment income.

It is therefore important to establish a credible medium-term strategy for budget consolidation. However, account needs to be taken of the current weak economic conditions when deciding on the adjustment measures in the near term. The 2002/03 budget represents an effort to strike a balance between providing short-term fiscal stimulus and moving towards medium-term retrenchment.

1. Introduction

Hong Kong SAR has an impressive record of fiscal prudence and stability. The consolidated government budget was balanced or in surplus in most years during the past two decades. However, the budget has been in deficit since 1998/99, except for a small surplus in 1999/2000. The deficit reached a historical high of 5% of GDP in 2001/02 and was 4¾% of GDP in 2002/03. This deterioration has raised concerns about the sustainability of the fiscal position and its implications for monetary stability. A study by the government concluded that Hong Kong's fiscal deficit is of a structural nature.² The budget for financial year 2002/03 projects that Hong Kong's substantial fiscal reserves - currently at about 30% of GDP - would be reduced to 18% of GDP by 2006/07.

This paper provides a preliminary analysis of the fiscal position, and draws macroeconomic and policy implications, particularly from the standpoint of the potential impact on the linked exchange rate system. Using the "structural budget balance" approach, which differs somewhat from the approach taken by the government study, we provide an alternative estimate of the structural balance. The remainder of the paper is organised as follows. Section 2 briefly reviews the role of fiscal policy in a small open economy with a currency board arrangement. Section 3 provides an estimate of the structural balance. Section 4 discusses some macroeconomic and policy implications of a structural deficit. Section 5 provides concluding remarks.

2. The role of fiscal policy

Fiscal prudence is a key factor underpinning a fixed exchange rate system. Under the currency board arrangement, the government cannot rely on the central bank to finance its spending. There is no question of monetisation of fiscal deficits, which threatens monetary stability in many emerging economies. However, while a currency board shows a commitment to responsible fiscal policy, it cannot prevent the government from running persistent deficits and accumulating a large public debt, as international experience shows. If the public debt becomes unsustainable, the government would have incentives to abandon the currency board and inflate away its domestic debt.

¹ All from the Economic Research Division of the Hong Kong Monetary Authority.

² Report by the Task Force of Review of Public Finances, February 2002, Hong Kong SAR Government.

In an open economy with developed financial markets, perceptions of fiscal sustainability matter. With increasing fiscal deficits, markets may fear that the monetary authority may be tempted or forced to engage in monetary financing at some stage. Interest rates could thus rise due to an increased risk premium. This presents risks of increasing debt servicing costs, and concerns from rating agencies and others about the ability to repay and about macroeconomic balance more generally. In an extreme case, a vicious circle could develop and investors' expectations become self-fulfilling. However, such problems are more likely to affect economies with a history of lax fiscal and monetary discipline that has led to unsustainable levels of indebtedness and hyperinflationary tendencies.

Under a currency board arrangement, fiscal policy is of particular importance for macroeconomic stabilisation since there is no room for manoeuvre on the monetary policy front. At the same time, tax and expenditure measures could be more effective than under a flexible exchange rate regime. This is because interest rates would not rise - to the extent that policy measures do not lead to a rise in the risk premium - to crowd out any stimulus from fiscal policy.

However, conflict may arise between preserving fiscal sustainability and pursuing countercyclical stabilisation. Specifically, in an economic downturn when there is already a sizeable fiscal deficit, the desirability of expansionary policies depends importantly upon the nature of the deficit. If it mainly reflects cyclical effects, implying that it would disappear when the economy recovers, a case could be made for providing fiscal stimulus to support aggregate demand. The situation will be complicated if there are concerns about the long-term fiscal position. On the one hand, measures need to be taken to correct the underlying imbalance. On the other hand, such policies may result in a large contractionary effect that worsens the economic downturn.

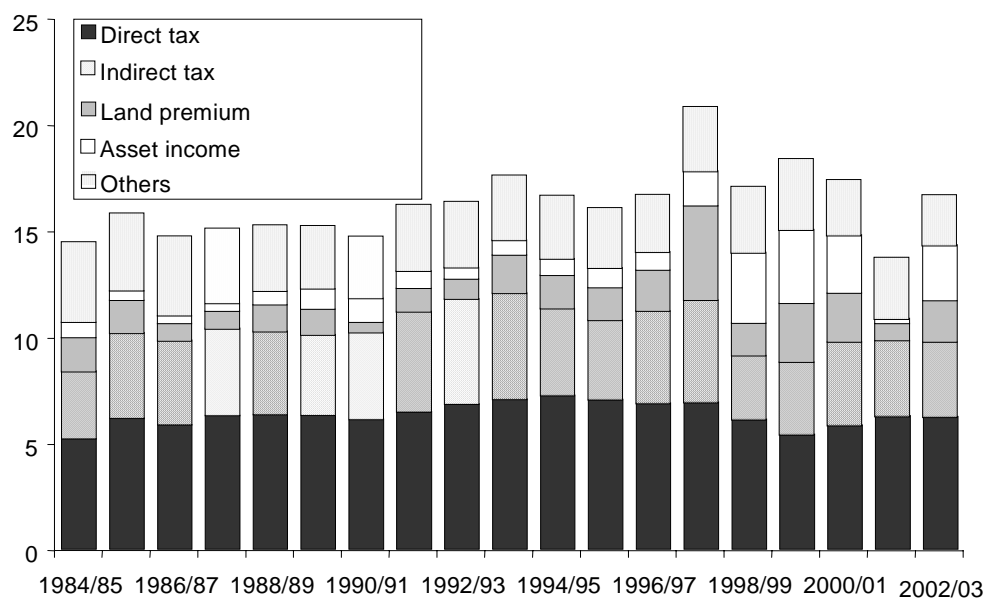
3. Estimating the structural deficit in Hong Kong

Government revenue in recent years has on average decreased to 16¾% of GDP during the fiscal years of 1998/99 to 2002/03, from 17½% in the previous five years (Graph 1). Moreover, there have been some undesirable developments in the composition of revenue. Specifically, tax and non-tax income has declined in the past few years, although this was offset by increases in the land premium, privatisation proceeds and investment income on fiscal reserves. Aggregate revenue has thus become more variable because of the increased importance of these relatively volatile asset-related receipts.

Government expenditure has been on the rise, reflecting mainly changes in recurrent expenditure, over the past decade (Graph 2). All the major categories of recurrent expenditure have increased steadily, including personnel-related expenses, health, education and social welfare (Graph 3). At first glance, therefore, the numbers suggest that the deterioration in the fiscal balance in recent years was mainly attributable to rising expenditure. However, volatile asset-related receipts and the recent cyclical downturn obscure the assessment of the developments in the underlying balance. This is discussed in the following sections.

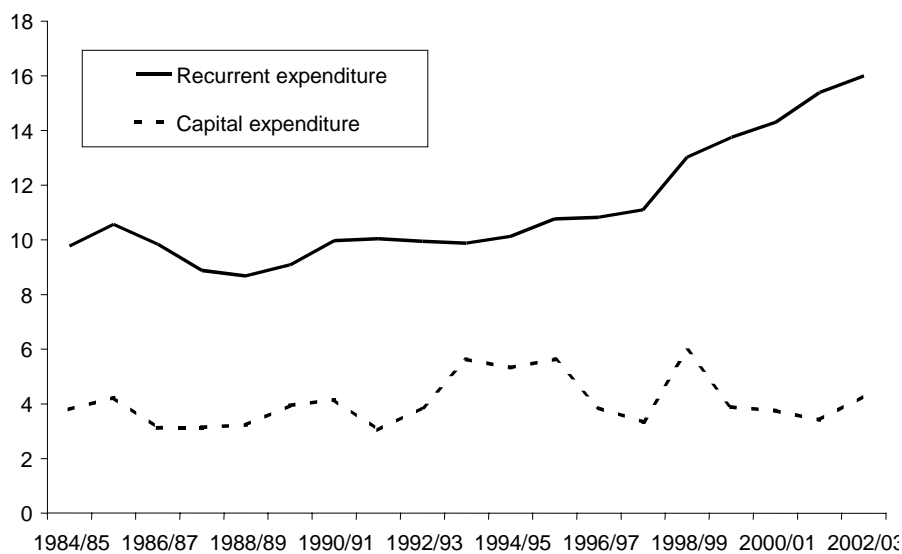
The first step in assessing the structural balance is to consider the treatment of the land premium, privatisation proceeds and investment income. Land owned by the government can be viewed as a non-renewable resource which is part of its net worth. Sales of land represent an asset transaction that does not change the net worth of the government. As a result, drawing down resource wealth - in this case, land - to build financial assets or pay down debt does not impact on the long-term fiscal position. However, running down resource wealth to fund government spending is not sustainable indefinitely. Conceptually, there is thus a case for placing the land premium as a financing item rather than a revenue source in the fiscal accounts. The same can be argued for privatisation proceeds. In practice, of course, these asset-related receipts can improve the financial position of the government because they improve the latter's liquidity position. Furthermore, it could be argued that, if land supply is abundant, any impact on the long-run fiscal position may be beyond the horizon of the current economic agents. Nevertheless, concerns may arise if there is over-reliance on receipts from asset sales in financing government expenditure for a sustained period.

Graph 1
Total revenue¹
as a percentage of GDP



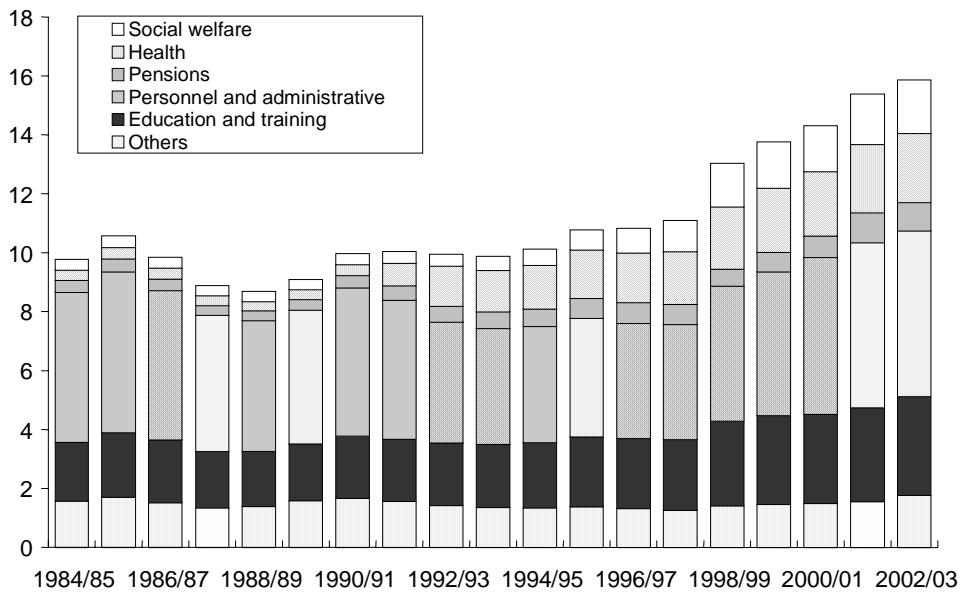
¹ Based on 2002/03 budget projection.

Graph 2
Recurrent and capital expenditure¹
as a percentage of GDP



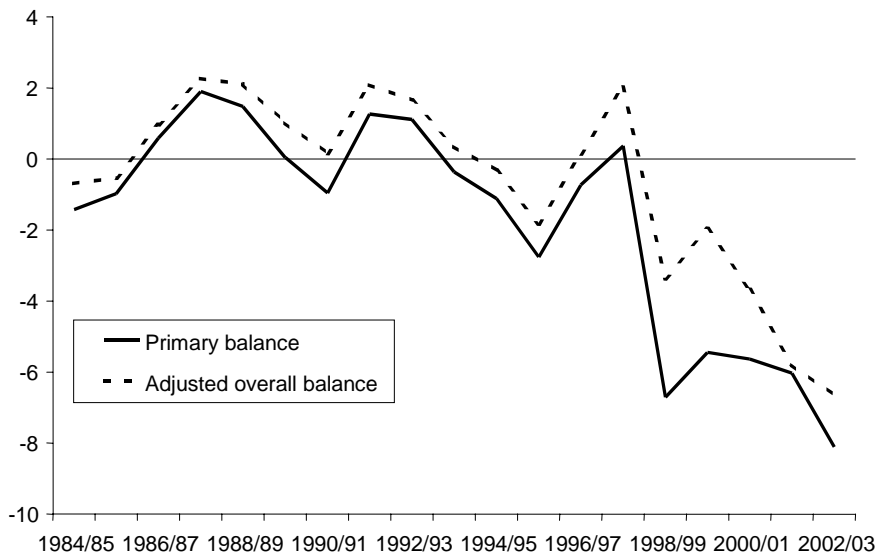
¹ Based on 2002/03 budget projection.

Graph 3
Recurrent expenditure¹
as a percentage of GDP



¹ Based on 2002/03 budget projection.

Graph 4
Fiscal balance¹
as a percentage of GDP



¹ Based on 2002/03 budget projection.

The investment return on fiscal reserves is recurrent income and should be treated as a revenue item. However, it is different from tax revenues in that it is outside the control of the fiscal authority and can be volatile due to changes in market conditions. Thus, over-reliance on investment income in order to finance spending could also be a problem. Based on these considerations, we derive a measure of

primary fiscal balance by excluding the land premium, privatisation receipts and investment income from aggregate revenue (Table 1). The results indicate that a significant primary deficit emerged in financial year 1998/99 (Graph 4). It remained at 5½-6% of GDP in the following three years, and is projected to be above 8% in 2002/03. The balance that excludes asset trade receipts but includes investment income - the “adjusted” overall balance - was also in deficit in recent years, albeit at a lower level.

Table 1
An analytical presentation of fiscal accounts
as a percentage of GDP

Fiscal year	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	Projection ¹ 2002/03
Revenue	16.1	16.7	20.9	17.1	18.4	17.5	13.8	16.8
Tax	10.8	11.2	11.8	9.1	8.8	9.8	9.8	9.8
of which:								
Direct tax	7.0	6.9	6.9	6.1	5.4	5.8	6.3	6.2
Indirect tax	3.7	4.4	4.8	3.0	3.4	3.9	3.6	3.5
Non-tax	5.3	5.5	9.1	8.0	9.6	7.7	4.0	7.0
Of which:								
Land premium	1.5	1.9	4.4	1.5	2.8	2.3	0.8	2.0
Privatisation proceeds	0.0	0.0	0.0	0.0	0.0	0.8	0.0	1.2
Investment income	0.9	0.9	1.7	3.3	3.5	2.0	0.2	1.5
Expenditure	16.4	14.7	14.4	19.0	17.6	18.1	18.8	20.3
Recurrent	10.8	10.8	11.1	13.0	13.8	14.3	15.4	16.0
Capital	5.6	3.9	3.3	6.0	3.9	3.8	3.4	4.3
Overall balance²	-0.3	2.1	6.4	-1.8	0.8	-0.6	-5.0	-3.5
Adjusted overall balance ³	-1.8	0.1	2.0	-3.4	-2.0	-3.7	-5.8	-6.7
Primary balance ^{3,4}	-2.8	-0.7	0.4	-6.7	-5.4	-5.6	-6.0	-8.1
Memorandum								
Structural primary balance	-3.0	-1.1	-0.0	-5.9	-5.1	-5.9	-5.8	-7.2
Structural adjusted overall balance	-2.3	-0.4	1.8	-4.0	-3.2	-4.1	-4.2	-5.9
Fiscal reserves	13.3	13.9	34.0	34.4	35.1	33.4	29.3	25.4

Source: HKMA Research Department staff estimates.

¹ Based on the 2002/03 budget, and projections therein for economic growth and price inflation. ² Budget definition. ³ Excluding land premium and privatisation proceeds. ⁴ Excluding investment income.

The primary balance and adjusted overall balance derived above reflect cyclical conditions as well as the effects of policy measures and structural changes in the economy that may have a durable effect on revenue and expenditure. A structural balance is obtained by purging the effects of cyclical conditions. To this end, we employ the “structural budget balance” approach developed by the IMF (see Annex for a technical note on the methodology). The estimates suggest that only a small part of the deterioration in the primary balance was attributable to cyclical effects, and that a sizeable structural primary deficit of 5-7% of GDP emerged in recent years. The adjusted overall structural

balance was obtained by estimating investment income using a trend return rate.³ The results indicate a structural deficit of 4-6% of GDP.

These indicators suggest a considerable deterioration in the structural balance starting from 1998/99. The underlying shortfalls were covered by asset trade and investment income, with only modest deficits recorded in the earlier years. However, the unfavourable market conditions significantly affected these asset-related receipts in 2001/02, leading to a sharp rise in the overall deficit.

The government study examines fiscal sustainability using a somewhat different approach. It projects the likely future fiscal balance under existing revenue and expenditure policies, on the assumption that the economy will grow at its trend rate in the long term.⁴ The study concludes that there is a sizeable structural deficit. Specifically, the projections suggest persistent deficits at about 3-4% of GDP in the next five years. These projections include a land premium assumed at 2% of GDP per annum. Adding the same number to our structural balance - which excludes the land premium - would give a deficit of about the same size as estimated in the government study. The exact magnitude of the estimated structural deficit should be treated with caution, considering the caveats and uncertainties with both estimation methods. Nevertheless, it is clear that there has been a significant deterioration in the underlying fiscal position. The government study notes a combination of factors that have contributed to this unfavourable development. These include the structural changes in the economy, such as the consolidation of the property market, and countercyclical measures adopted in recent years. Our analysis highlights the risk and vulnerability of relying on volatile revenue sources such as asset trade receipts and investment income to finance a significant part of the expenditure.

4. Macroeconomic implications of the structural deficit

The existence of a structural deficit would call for fiscal consolidation. However, the exact measures, timing of implementation and strength of adjustment should be carefully considered, taking into account a number of factors. These include the urgency of adjustment, current economic conditions, and the need to rationalise revenue and expenditure to improve the microeconomic efficiency of fiscal operations. On the latter, for example, there are concerns about the broad-based increase in recurrent government expenditure relative to output in recent years. Thus, in addition to the need for fiscal retrenchment, there is an issue as regards the appropriate size of the public sector. Government spending on capital projects should also be justified by cost-benefit analysis or reference to any implied market failure in the private sector. It is beyond the scope of this note to provide a comprehensive review of the related issues. Nevertheless, it is useful to outline some broad considerations in relation to monetary and macroeconomic stability.

First, it should be emphasised that a continuing fiscal deficit in the short term does not necessarily pose a serious threat to monetary stability or to the exchange rate link. There would appear to be scope to run budget deficits, given the substantial fiscal reserves and absence of any government debt. However, it is important to have a credible medium-term strategy to tackle the issue of fiscal sustainability. Market confidence concerning monetary stability generally and the link in particular may be affected if investors perceive signs of the imbalance persisting into the longer term. The proposal to cut civil service salaries in 2002/03 and the medium-term strategy of expenditure retrenchment, as announced in the 2002/03 budget, represent a move in the direction of fiscal consolidation and

³ We estimated a trend return rate with reference to the yield on US treasury bonds, which turned out to be very close to the assumption of 5.5% per annum in the government study.

⁴ The projection and the structural balance approach adopted have advantages and limitations. Specifically, the projection approach is subject to uncertainties about future growth and inflation rates, and asset and investment income. However, the projection framework can be used to assess the effects of the alternative revenue and expenditure policy measures. Our approach focuses on the current underlying position. For example, our estimates suggest that the main shift in the underlying balance took place in the wake of the Asian financial crisis. However, it is less suitable for examining the effects of alternative future policy measures.

demonstrate the government's commitment to the maintenance of a prudent fiscal policy.⁵ Specifically, the government proposed to balance the budget by 2006/07, mainly through cuts in expenditure.

Second, it should be noted that weak economic activity and uncertain prospects for recovery constrain the pace of fiscal adjustment in the near term. A tightening of the fiscal position would represent a procyclical policy stance for the first time in the past two decades. HKMA (2000) suggested that fiscal policy had been expansionary in the previous economic downturns, including notably in the mid-1980s and following the Asian financial crisis. An updating of that analysis indicates a continuation of an expansionary stance in the past two years (Table 2). Furthermore, the fiscal impulse is projected to raise GDP growth by about 1 percentage point in 2002/03, mostly due to increased expenditure. The significantly expansionary stance of policy contrasts with the concerns about a considerable structural deficit raised by the government study. This indicates that the priority has been placed on helping the economy in the near term, while pursuing the required adjustment to correct the underlying imbalance in the medium term. A front-loaded and drastic adjustment in the fiscal position would worsen economic conditions and lead to a rise in the unemployment rate, which is already at a high level.

Table 2
Fiscal impulse and multiplier effect on GDP
as a percentage of GDP

Fiscal year	1995/ 96	1996/ 97	1997/ 98	1998/ 99	1999/ 2000	2000/ 01	2001/ 02	Projec- tion ¹ 2002/03
Fiscal impulse²	1.9	-1.0	-0.8	3.1	1.7	0.2	0.7	1.6
Revenue	0.7	-0.3	-0.8	1.8	1.4	-0.9	0.1	0.4
Expenditure	1.2	-0.7	0.0	1.2	0.3	1.1	0.6	1.2
Multiplier effect on GDP³	1.0	-0.5	-0.3	1.5	0.7	0.3	0.4	0.9
Contribution from:								
Revenue	0.3	-0.1	-0.3	0.7	0.6	-0.4	0.0	0.2
Expenditure	0.7	-0.4	0.0	0.7	0.2	0.6	0.4	0.7

Source: HKMA Research Department staff estimates.

¹ Based on the 2002/03 budget. ² Base year is fiscal year 1992/93. ³ The tax and spending multipliers are assumed to be 0.4 and 0.6 respectively, based on HKMA (2000).

5. Conclusions

Our analysis concludes that there has been a considerable deterioration in the underlying fiscal balance in recent years. A structural deficit emerged mainly due to rising recurrent expenditure and falling asset-related receipts. To address the issue of fiscal sustainability, it is important to have a concrete and credible medium-term framework. At the same time, the immediate threat to fiscal and monetary stability should not be exaggerated, and due consideration should be given to the current weak economic conditions in deciding on the adjustment measures in the near term. In that regard, the 2002/03 budget represents an effort to strike a balance between providing short-term fiscal stimulus and moving towards budgetary consolidation over the medium term.

⁵ The actual reductions in civil service salaries, effected from 1 October 2002, were 4.42% for the directorate and the upper salary band, 1.64% for the middle salary band and 1.58% for the lower salary band, representing an estimated average reduction of 2-2½% in civil service salaries.

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Annex: Methodology for estimating structural balance

The conventional measure of budget balance does not fully reflect the underlying fiscal position, because it reflects the effect of cyclical conditions. The structural budget balance (SBB) provides a measure of the underlying position by purging cyclical effects. The SBB framework is widely used by IMF staff in assessing member countries' fiscal policy. The methodology is described in Heller et al (1986), IMF (1993, 1995) and Hagemann (1999).

The IMF's SBB approach

The IMF's SBB method assumes that actual real output moves around an underlying path that reflects the long-run potential growth of the economy. A fiscal deficit will emerge during a cyclical downturn, but the cyclical effects will dissipate during the subsequent upturn, when output reverts to its long-run equilibrium path. By quantifying the size of the deviation of actual output from potential and the cyclical sensitivity of revenues and expenditures to such a deviation, the SBB method estimates the portion of the budget balance that is attributable to cyclical changes in economic conditions. An estimate of the SBB is derived by subtracting the estimated cyclical component from the observed balance. The SBB methods thus involve estimating the output gap and the responsiveness of revenue and expenditure to that gap. In particular, a measure of "structural revenue" is estimated by adjusting observed revenue using elasticities for major tax items and taking account of the output gap. A measure of "structural expenditure" is calculated by adjusting total outlays by an amount that reflects the expenditure impact of the divergence between the actual and the natural rate of unemployment.

Caveats

Structural balance estimated under the SBB approach needs to be interpreted with caution. First, it relies on estimates of potential GDP and the natural rate of unemployment, which can be subject to considerable uncertainties. Second, estimates of revenue elasticities could be influenced by the effect of policy changes, which are empirically difficult to disentangle from other factors.

Calculating the fiscal stance at the Magyar Nemzeti Bank

Gábor P Kiss¹

1. Introduction

The Magyar Nemzeti Bank (MNB, the central bank of Hungary) has systematically analysed the fiscal stance since the mid-1990s. In a small open economy like Hungary, changes in the fiscal balance are likely to have somewhat greater impact on GDP and the external balance than on inflation, so the MNB's fiscal analysis initially focused on medium-term sustainability and the short-term demand impact of fiscal policies. However, with the adoption of an inflation targeting regime in June 2001, the assessment of the fiscal impact on aggregate demand has become increasingly important.

This paper presents the current status of the MNB's fiscal analysis. Section 2 describes various measures of the budget deficit used in Hungary and adjustments to these measures made by the MNB in order to calculate a first-round or "headline" indicator of the fiscal impact. Section 3 describes how this indicator is decomposed, ie, how the MNB accounts for different factors that determine the change in the budget balance. Sections 4 and 5 then describe approaches to assessing the macroeconomic impact of changes in the budget balance, first in a partial and then in a general equilibrium setting.

2. Measures of the budget deficit and the fiscal impact

Fiscal impact can in general be defined as the aggregate demand impact of a given change in the budget balance. The question is, of course, which definition of the budget balance is appropriate for assessing the fiscal impact. Hungary uses three different definitions of the general government deficit, shown in Table 1; see MNB (2002):

- The deficit based on the IMF's GFS86 methodology. This was the official definition of the deficit until 2002;
- The deficit based on the European Union's ESA95 methodology, which became the official definition of the deficit in Hungary starting in 2003; and
- The deficit based on an adjusted SNA93 methodology, used by the MNB for analytical purposes; see P. Kiss and Szapáry (2000) and MNB (1995).

Table 1

Budget deficit indicators for Hungary, 1997–2001

(as a percentage of GDP)

	1997	1998	1999	2000	2001
Official deficit (GFS approach)	4.7	4.8	3.7	3.7	3.0
ESA95 deficit (preliminary calculations)	6.8	8.0	5.5	3.0	4.1
SNA deficit (MNB-adjusted)	7.0	7.9	6.2	4.1	5.3

Source: MNB

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The MNB looks primarily at the SNA deficit, making various adjustments to arrive at a first-round or “headline” indicator of the fiscal impact. The adjustments are motivated by the need for flexibility in determining the proper classification of public sector activities and the proper time of recording of transactions. In particular:

- The activities included in public and private sectors should be homogeneous regarding their economic objectives and behaviour. The government’s major concern is not maximising profits but rather responding to public policy considerations. Corporations engaged in quasi-fiscal activities or the provision of non-market services are not enforced to respond quickly to market signals and should therefore be classified as parts of the government.
- Fiscal transactions should be classified as “above” and “below” the line on the basis of their effective economic impact, ie, on the basis of the expected behaviour of the recipient. For example, government “lending” may have the same effect as transfers if the recipients of loans can assume that the government will not in practice enforce its claims.
- Cash-based accounts appear to be adequate for recording most revenue and expenditure transactions. But in the case of interest expenses, VAT refunds and concession fee receipts, it seems sensible to follow the accrual basis of accounting (see Box 1).

Box 1

Accrual-based general government accounts

Since the category of accrual-based deficit was first introduced in the MNB’s 1996 *Annual Report*, the official cash flow-based deficit has been regularly corrected for accrual-based interest rates. Since the compilation of the September 1999 issue of the *Quarterly Report on Inflation*, corrections are also applied for certain items of the primary balance.

The need for corrections partly arises because of the need to apply the accrual concept to the VAT, in response to the occasional significant discrepancy arising between the accrual-based and the cash flow-based VAT figures, where even the sign of the discrepancy shows volatility. This is because the timing of the VAT refunds may vary within legally set limits. Furthermore, about half of gross receipts will be refunded. In recent years, the discrepancy between accrual-based figures (which reflect underlying processes more closely) and cash flow VAT figures has been fluctuating between –0.1% and +0.3% of GDP, depending on whether refunding is slower or faster than usual at year-end. This phenomenon was noted in the MNB’s 1996 and 1997 annual reports.

The other problem lies in the statistical accounting of lump sum concession payments. Receipts from concessions amounted to 35.3 billion forint in 1999, with substantial further payments projected for 2000. In terms of the SNA methodology, such concession fees should be accounted for in a similar manner to leases, where the use of the accrual concept is required. Accordingly, the accrual-based rent should be separated off for the entire period of the lease (concession); in other words, the deficit should be improved each year by the sum allocated to it, regardless of the timing of actual payments. Thus, it is not correct to regard lump sum concession fees as privatisation receipts and fully deduct them from the receipts. This is because privatisation means selling off financial assets (shares) for good, whereas concession only implies the transfer of a right for a limited duration, on the expiry of which the right reverts to the state. In principle, there would not be any difficulty so long as the concession fee were paid on an annual basis in accordance with the accrual concept. However, lump sum payments made in advance or in arrears constitute credit extended either by the party granting the concession or the recipient, and credit transactions should be removed from the general government deficit.

Source: Magyar Nemzeti Bank (1999), Box IV.1.

Based on this reasoning, the MNB adjusts three main categories of revenue and expenditure items.

First, the MNB includes quasi-fiscal activities and road construction financed by the Hungarian Development Bank as part of the government. As the MNB has only partial information about these activities (gathered, for example, from government resolutions, press releases and, in certain cases, through collection of regular data), it can only deal with estimates of the size of these expenditures.

Second, revenues reported by the Hungarian Privatisation and State Holding Company are reclassified in the below-the-line category “reductions in claims” (eg, repayment of debt, disposal of shares and off-budget use of privatisation receipts). Forecasting this item is relatively straightforward as there are estimates available in the Budget Act and performance of the Privatisation and State Holding Company can be monitored in the course of the year.

Third, VAT and concession fee revenues are adjusted on an accrual basis. Some of the items subject to adjustments cannot be observed directly. Consequently, not only the forecast, but also the actual performance against the forecast is based on estimates.² Estimates of concession fee revenue (which are paid in advance as a once-and-for-all payment) are available from the official budget data.

The MNB strives to keep its adjustments as simple as possible, focusing on the most relevant corrections. If the effect of adjustment is constant (ie, it has no trend or volatility) and/or is insignificant in size, no adjustment is necessary because it would not affect the estimated *change* in the deficit. Furthermore, when calculating the fiscal impact it is not necessary to analyse separately the balances of each subsector of the general government (see Box 2). Thus, one can concentrate on the change in adjusted SNA balance at the general government level.

Box 2

Fiscal impact of subsectors of the general government

Apart from local governments, it is becoming increasingly difficult to analyse the deficits incurred by the individual subsectors of general government. Extra-budgetary funds in Hungary underwent major changes in both 1996 and 1999, with all but two of them having been integrated into the central government budget. As a result, it is no longer possible to compare the time series data on deficits of the central government and extra-budgetary funds.

In the past, the social security administration had greater autonomy and only received earmarked transfers from the budget. In spite of this apparent autonomy, deficits of autonomous social security funds were on the whole financed from the central government budget. To resolve this contradiction, major changes were introduced in the management and supervision of the funds in 1998. The autonomous administration framework was wound up and management of the funds was transferred to the government. According to the law, the deficit of the social security funds is now managed by the central budget. As the size of non-earmarked transfers changes from year to year, the exact framework in which the central government deficit is realised has become a matter of choice – namely, non-earmarked transfers reduce the social security deficit but raise the central government deficit.

Source: Magyar Nemzeti Bank (1999), Box IV.2.

MNB also strives to keep its adjustments as transparent as possible. The methodology for adjustments is published and updated when changes are made, and the time series and forecasts are also made available; see MNB (2002). The description of the demand impact shows separately information that is publicly available (eg changes in the headline deficit) and the results of analytical SNA corrections.

Regarding other revenue and expenditure items, MNB's fiscal forecasts are prepared in a very detailed manner, with the budget outcome estimated line by line. The reason is that inflation projections cover the forthcoming six to eight quarters, and policy decisions focus on price developments expected to take place within the next four to six quarters. The fiscal forecast thus requires an approved or at least a draft budget. Without a detailed budget, there is no means of assessing the plausibility of revenue or expenditure estimates. The effective horizon for the fiscal forecast is thus two to five quarters, except for the years 2001–02, when a two-year budget was approved by the Hungarian parliament.

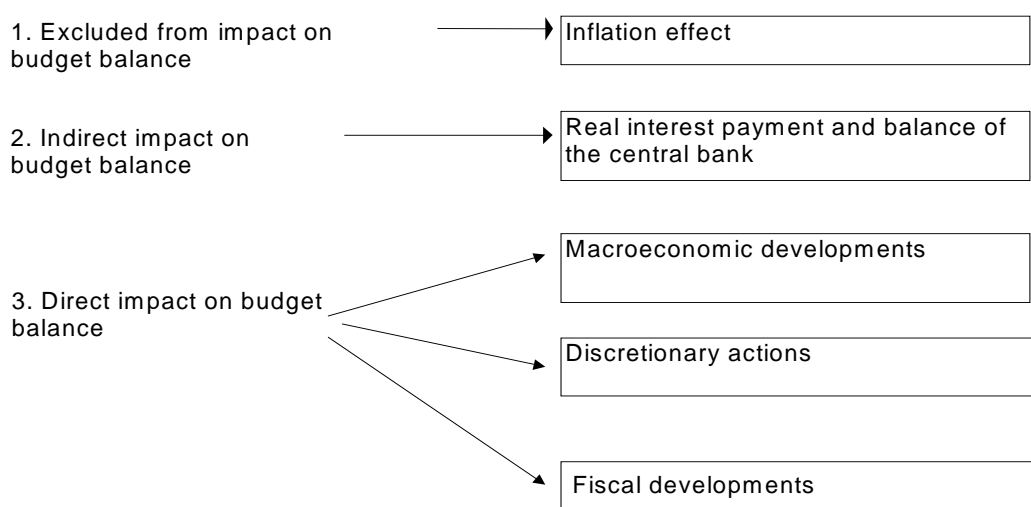
3. Factors determining the fiscal impact

The first step in assessing the impact of changes in the budget balance on aggregate demand is to consider which factors have led to a given change in the balance itself, ie, to decompose the fiscal impact by its determinants. For this purpose, the MNB distinguishes between indirect and direct determinants of the fiscal impact (Table 2). A preliminary step in this analysis is to exclude the effect of inflation on the change in the budget balance.

² To provide estimates of VAT revenue on an accrual basis, the MNB uses special software (SEATS/TRAMO) that eliminates discretionary effects in VAT refunds.

Table 2

Determinants of change in the budget balance



Since changes in interest rates and profits or losses of the central bank are generally beyond the control of fiscal policy, their impact on the budget balance is regarded as *indirect*. Estimating the indirect impact involves separating interest expenditure and including central bank profits or losses in the budget. One technical step in this analysis is to smooth the fluctuations in real interest rates.³

Direct impact on the budget balance – ie, the impact of factors over which fiscal policy has direct influence – is usually much larger. For forecasting and communication purposes, it is useful to decompose this impact in three categories; see MNB (2002):

- The first category includes the effects of *discretionary measures*, ie those fiscal policy measures that are linked to changes in the tax regime and the non-determined range of expenditure.
- The second category includes the effects of *macroeconomic developments*, such as tax receipts, employment benefits and pension expenses on account of the indexation system. The effects of macroeconomic developments on tax revenue can be calculated by deducting the discretionary components. This residual tax revenue excludes all effects of discretionary measures and includes all exogenous influences, such as effects of the business cycle and changes in inflation, oil prices and exchange rates.
- The third category, *fiscal developments*, is a general term including the effects of all factors other than those mentioned in the previous two categories. This residual item is sometimes referred to in the literature as the “policy slippage” or “over-performance”. It reflects the outcomes of the decisions taken by autonomous local authorities and budgetary units and so-called budget chapters. Such decentralised decisions may diverge from intentions of policy makers at the central level (the parliament and the central government). This category also reflects the effects on the budget of some exogenous factors, such as the number of persons eligible for family or health care allowances.

In practice it is difficult to fully separate the above categories. Discretionary measures affect macroeconomic developments, so there is always some overlap between the first two categories. The most obvious example is an increase in public sector wages. Taxes paid by the public sector and

³ The MNB uses a modified version of moving averages suggested by Blanchard (1990) for this purpose: instead of a three-year forward-looking average, the MNB uses a moving average that looks one year ahead and one year back.

public sector employees on these wages flow back automatically into general government revenue. In this case, it may be justified to account for the effect of discretionary measures on a net basis.

Knowing which factors determined a given budget outcome is important not only with regard to forecasting but also for communication. Differences between actual and budgeted revenues are often accumulated year after year as a result of problems with the macroeconomic assumptions of the budget. MNB's estimates of these differences provide an important link between private, government and central bank forecasts. They also help analysts to assess fiscal developments in the course of the year. Discrepancies between appropriations and actual spending are not so obvious during the year because many types of expenditure have no regular seasonal pattern. As a result, the effects of these discrepancies on the deficit are usually not estimated or published by the government or private analysts. Finally, MNB's estimates are useful for assessing the effects of adopted across-the-board discretionary measures.

4. Assessing the fiscal impact, partial approach

To assess the impact of change in the general government balance on GDP, the external balance and inflation, the MNB considers separately elements of fiscal policy that influence two major components of aggregate demand: household consumption and government fixed investment.⁴

In particular, the MNB looks at how household consumption is affected by: (1) changes in transfers to households (mainly the increase in pensions and, to a lesser extent, changes in social and unemployment benefits); (2) changes in the public sector wage bill; and (3) changes in the tax rules (tax rates, tax brackets and allowances) that affect household disposable income. Regarding the impact of fiscal policy on public investment, the MNB augments public investment with investment decided by the government but financed off the budget. This approach is consistent with SNA methodology.

Only some elements of fiscal policy that influence household consumption can be measured on a monthly or quarterly basis (eg tax receipts). Many expenditure items do not exhibit regular time patterns within the year. This stems from the fact that the objectives and appropriations in the Budget Act are set for an entire year and no within-year scheduling is provided in the majority of cases. Therefore, the overall fiscal impact is always interpreted on an annual basis.

5. Assessing the fiscal impact, general equilibrium approach

Simulations using a computable general equilibrium model (NIGEM) complement the assessment of the fiscal impact on household consumption and government fixed investment.⁵ For the purpose of simulations, government expenditure is divided in four major categories: government consumption, government investment, household transfers and interest payments. Government consumption and investment are treated as exogenous policy variables, while transfers depend on nominal income and the unemployment rate. As far as the revenue side is concerned, there are three different tax accounts in the model: corporate and personal income taxes, which move with nominal GDP; and miscellaneous (mainly consumption taxes), which move with nominal consumption. More precisely, the personal income tax moves with nominal GDP if the budget balance is at its targeted path. But if the budget balance deviates from its target, the model assumes that the personal income tax is gradually adjusted to cover the difference. Interest payments by the government depend on the existing debt and long-term interest rates, assuming an average maturity of six years.

Simulations using the NIGEM provide useful information on the dynamics of macroeconomic adjustments and the effects of fiscal policy over time. Fiscal policy usually affects macroeconomic

⁴ For this exercise the MNB uses statistics released by the Central Statistical Office (CSO) on a monthly or quarterly basis. CSO statistics differ from government cash flow statistics on public sector wages and government investment because of the different time of recording and different definitions used.

⁵ NIGEM is a multi-country empirical model with a medium-sized government sector, originally developed in the United Kingdom and recently extended to Hungary (see Jakab and Kovács, 2002).

performance and the external balance in the short run. In addition, other macroeconomic variables, such as inflation, interest rates and exchange rates can be affected. The model estimates the time-varying response patterns of all these variables. The simulations can simultaneously capture not only the direct impact of fiscal policy on aggregate demand, but also the structural effects on private behaviour, expectations and private decision-making.

For instance, in assessing the fiscal impact for 2001, the MNB assumed that fiscal expansion would be implemented through investment activity, spending on goods and services and a reduction in consumption taxes. The NIGEM simulations showed that nearly half of this expansion passed through to GDP within a year, and that it led to an increase in the current account deficit. For 2002, the MNB assumed that fiscal expansion would be implemented through an increase in public wages and transfers to households. The NIGEM simulations showed that this kind of fiscal expansion affected GDP in an even shorter time, and had a relatively longer and stronger impact on external deficits; see MNB (2001).

Comparing preliminary data on budget outturns for 2001 and 2002 with the results of MNB simulations indicates that the actual effects on aggregate demand were smaller than indicated by the model. This is partly the result of deviations in fiscal policy from the model assumptions. For instance, capital expenditure failed to pick up speed at the expected rate in 2001, while it increased in 2002 at a rate much higher than assumed. By contrast, a portion of the increase in wages and household transfers assumed for 2002 was brought forward to 2001. As a result, the impact of fiscal expansion on GDP was much larger in 2002 than had been projected by the model in November 2001. The larger fiscal expansion led to higher public wages and thus an additional increase (rather than a moderation) in spending on goods and services. The updated simulations substantiated earlier calculations that fiscal expansion impairs the external balance but has a relatively moderate effect on inflation. However, due to the size of overall expansion in aggregate demand in 2001–03, inflation in 2003–04 could accelerate by more than 1 percentage point compared with previous projections; see MNB (2003).

6. Conclusion

This paper has outlined the current state of fiscal analysis at the MNB from the perspective of monetary policy. Many further analytical challenges lie ahead. A new general equilibrium model based on quarterly data is being developed to improve forecasting. This model should help to separate better the macroeconomic effects from the effects of discretionary measures. Greater transparency and better communication of the results of MNB analysis are also required. For example, MNB should explain why it employs the corrected SNA indicator instead of the official ESA95 indicator of the budget balance. Analysis of other aspects of fiscal policy, such as sustainability, should also receive more emphasis in the years ahead.

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Fiscal issues and central banks in emerging markets: an Indian perspective

Rakesh Mohan

1. The Indian fiscal system

Under India's federal system of government, the constitution allocates the revenue powers and expenditure functions between the central and state governments. In general, the functions required to maintain macroeconomic stability and international relations are assigned to the centre, while provision of public services such as law and order, internal security, public health, sanitation, water supply and agriculture is largely entrusted to the states. Both government layers share responsibility for education, health and infrastructure. Until the constitutional amendments of 1992, those levels of government below the state level, the local governments in both urban and rural areas, were not mentioned in the constitution.

In the planning system adopted in India in 1951, almost all the investment programmes of government departments, public sector enterprises and other public authorities are covered within a five-year plan framework. The Planning Commission, an apex body set up for approving five-year and annual plans, makes budgetary allocations for direct investment by government departments, equity and loan injections to public sector enterprises, government budgetary subventions and loans to other authorities.

The non-statutory Planning Commission also determines the size of resource flows from the centre to finance state plans as part of the approval process for five-year plans, and the distribution of the total amount of central assistance among the states is determined on the basis of an established formula. However, the actual allocation is made on an annual basis taking account of the fiscal situation of the central and state governments and factors such as availability of resources for funding plan projects, states' own resources, and the need for development of certain sectors and regions. The criteria considered for the distribution of central assistance for plans include population, per capita income, state-specific problems and fiscal management.

For reasons relating to the efficiency and ease of tax collection, the constitution assigns a number of important tax resources to the central government and a limited amount of tax resources to the states. The relationship between state governments and local authorities also exhibits a similar imbalance. Recognising the imbalances, the constitution provides for a Finance Commission, an independent quasi-judicial body constituted every five years, to recommend allocations of central taxes to the states. It also forecasts the revenue and expenditure of the state governments and recommends additional assistance in the form of grants-in-aid to close the resource gap.

A third component of transfers from the central government to the states is specific purpose grants under various centrally sponsored schemes. These grants are awarded to the states to undertake certain agency functions and are therefore entirely financed by the central government. Centrally sponsored schemes are initiated for services falling within the state's jurisdiction to ensure that optimal levels are provided. Essentially, the various modes of resource transfer from the centre to the states are intended to eliminate vertical as well as horizontal fiscal imbalances.

The planning process has governed the system for investment activities in India. For both the central and the state governments, the Planning Commission attempts to devise, through a process of extensive consultations, a financing programme for the whole plan investment programme. There is a variety of sources financing the central government's fiscal deficit, including balances from current revenues, contributions from public sector enterprises, bonds issued by public sector enterprises, market loans, small savings (retail savings made in fixed return schemes administered by the government and post offices), provident funds and capital receipts from previous lending operations.

The constitution requires states to obtain the consent of the central government for raising any loan if there is any loan outstanding to the central government. State plans are financed from the following sources: current revenues, contributions from state public enterprises, domestic borrowing by states

(market borrowings, small savings and provident funds) and central assistance. Of these sources, the market borrowing and small savings components affect the central bank's balance sheet most directly, in terms of their impact on liquidity and interest rates.

Role of the Reserve Bank of India in the Indian fiscal system

The Reserve Bank of India (RBI) plays two crucial roles in relation to the Indian fiscal system, namely as banker to and debt manager of both central and state governments. These roles are derived from the Reserve Bank of India Act 1934 and Public Debt (Central Government) Act 1944. The RBI is *required* to undertake, accept and pay out monies on behalf of the central government up to the amount standing to the credit of its account and to carry out its exchange, remittance and other banking operations, including the management of public debt. The RBI Act *allows* the RBI by agreement with a state government to undertake its banking operations and management of its public debt.

While undertaking the role of banker for both the central and state governments, the RBI also provides temporary support to tide over mismatches in their receipts and payments in the form of Ways and Means Advances (WMA). Prior to April 1997, the RBI's accommodation of the central government was extended against ad hoc Treasury bills. This provision for extending short-term financing (not exceeding three months) was intended to bridge temporary mismatches in cash flows. Unfortunately, the central government slipped into the practice of rolling over this facility, resulting in automatic monetisation of the government's deficit. The process of creating 91-day bills and subsequently funding them into non-marketable special securities at a very low interest rate (4.6%) emerged as a principal source of monetary expansion. In addition, the RBI also subscribed to the primary market issuance of government securities. As a consequence, net RBI credit to the central government increased from about three quarters of the monetary base during the 1970s to over 90% during the 1980s. It was only in the 1990s that some restraint was consciously exercised on monetisation. In 1994, limits were set on the automatic monetisation of the government deficit by the central bank. In April 1997, a new WMA scheme was introduced on the basis of an agreement signed by the central government and the Bank in 1994. Accordingly, the Bank sets limits on the use of WMAs. The limits fixed for 2002/03 were INR 100 billion for the first half of the year (April-September) and INR 60 billion for the second half (October-March), which was the same as in 2001/02. The absolute limits fixed for 2001/02 translated into about 17% and 8% of the gross fiscal deficit in the first and second half of the year, respectively. In the case of state governments, the RBI provides two types of WMAs. Normal WMAs are clean or unsecured advances extended at the Bank rate, while special WMAs are extended against the pledge of central government securities and Treasury bills held by state governments. Until recently, WMA limits were linked to the cash balances the states maintained with the RBI. However, since 1999/2000 the WMA limits have been determined on the basis of a three-year average of revenue receipts and capital expenditure.

Review of fiscal developments

The government sector plays a major role in economic activities in India. The share of (central and state) government expenditure in GDP rose steadily from around 12% in the 1950s to 20% in the 1970s and further to 29% in the 1980s. However, it declined marginally to 27% in the 1990s. Government sector revenue increased over the decades from 9-12% of GDP in the 1950s and 1960s to 15% in the 1970s and 19% in the 1980s. However, it declined to 18% in the 1990s.

The central and state governments had maintained surpluses in their revenue account during the first three decades after independence. However since the 1980s, the major deficit indicators have shown steady deterioration, reflecting an acute resource crunch. The revenue deficit of the government sector, which was barely 0.4% of GDP in 1980/81, rose sharply to 4.2% in 1990/91. Overall revenue growth rose from 15.3% of GDP in the 1970s to 19.0% in the 1980s, but the rise in expenditure was even higher, almost 9 percentage points from 20.1% of GDP to 28.8%, during the same period. Consequently, the gross fiscal deficit, which reflects the overall borrowing requirement of the government sector, rose sharply to 8.5% of GDP during the 1980s from around 5% in the 1970s. This sharp rise in the resource gap culminated in sharp growth of the public debt, posing a severe threat to macroeconomic stability. The combined fiscal deficit constituted 9.4% of GDP in 1990/91.

This deterioration in the fiscal situation and the need to finance the government led to increased repression of the financial system in the 1980s. The high levels of public borrowing forced the RBI to

keep the level of both the cash reserve ratio (CRR) and the statutory liquidity ratio (SLR) high for the banking system. The CRR was raised continuously from 7% in the early 1980s to 15% by 1989. The SLR was also increased continuously from 34% in the early 1980s to 38.5% in 1990. The banks then needed to charge higher interest rates to the rest of the economy. Further, the prevalence of small savings schemes at administered rates impeded the development of the financial markets and led to rigidities in the interest rate structure. To address these issues, fiscal restructuring and financial sector reforms were included in the economic reform programme initiated in the early 1990s.

Following the fiscal correction measures, the fiscal deficit declined progressively from 9.4% of GDP in 1990/91 to 6.4% in 1996/97. This pace of change, however, could not be sustained. While government expenditure was brought down from 28.8% of GDP in the 1980s to 27.1% in the 1990s, there was a steady decline in the tax/GDP ratio from 15% in the 1980s to 14.6% in the 1990s. The gross tax revenue of the central government declined to 8.8% of GDP during 1999/2000 from 10.6% in 1989/90. Similarly, state tax revenue declined from 8% of GDP in 1989/90 to 7.5% in 1999/2000.

Fiscal activism as reflected by a mounting fiscal deficit and the nature of its financing influence inflation, interest rates, exchange rates and private sector behaviour. Excessive bond financing of the fiscal deficit leads to pressure on credit in the domestic market resulting in upward pressure on real interest rates. The monetary financing of the deficit results in growth in primary liquidity, which leads to large monetary expansion and the possibility of generating inflationary pressure. The excess deficit may spill over into the current account deficit if the government depends on a larger external source of funds for financing the deficit, assuming neutrality in private saving/investment. Fiscal imbalances also tend to influence private investment either by pushing up interest rates or directly consuming resources.

2. Impact on monetary policy

Fiscal policy and monetary policy are the two arms of macroeconomic policy, aimed at growth, equity and macroeconomic stability. While fiscal and monetary policy have common objectives, the instruments used differ. Fiscal policy rests upon instruments such as government expenditure, taxes and borrowing. Monetary policy influences the level of economic activity through actions that impinge on the cost of funds and the availability of overall liquidity in the system. Effective macroeconomic management presupposes a well-knit and coordinated fiscal and monetary policy environment, since fiscal policy continues to have a close bearing on the conduct of monetary policy. A high fiscal deficit impedes the effective use of monetary policy instruments.

In the Indian context, the fiscal operations of the government had a dominant effect on monetary policy until recently. Prior to the early 1990s, the financial markets in India were highly segmented. The money market lacked depth, with only the overnight interbank market in place. Interest rates in the government securities market and the credit market were tightly regulated. The dispensation of credit to the government took place through the SLR requirement whereby the commercial banks were made to set aside substantial portions of their liabilities for investment in government securities at below market interest rates. Furthermore, credit to the commercial sector was regulated, with prescriptions of multiple lending rates and a prevalence of directed credit at highly subsidised interest rates. The main instruments of monetary policy were reserve requirements, quantitative control of bank credit, administered interest rates and finance (by repos) to commercial banks.

In the wake of the mounting fiscal deficit, the scale of government borrowings remained high. The ad hoc Treasury bills created automatically to finance the central government deficit without any limit resulted in rapid monetary expansion when the deficit became very large. In such an environment, monetary policy had to neutralise the inflationary impact of the growing deficit. The resources of the banking sector came to be increasingly absorbed to support the government's borrowing and to contain the inflationary impact. The situation led to the gradual scaling-up of the CRR and the SLR to 63.5% in 1991 from only 23% in 1962. Required lending to priority sectors accounted for up to 40% of the remaining bank credit.

Government control over organised credit was enlarged with the nationalisation of commercial banks in 1969. After nationalisation, the administered interest rate regime in India was characterised by cross-subsidisation: credit to priority sectors was accorded interest rate concessions and this was compensated by high interest rates on advances to non-priority sectors. The regulation of interest

rates on loans also led to the regulation of deposit rates. With the proliferation of directed credit arrangements, multiple interest rate prescriptions based on a variety of criteria, such as economic activity, type of commodity, location, type of borrower group, and the resultant cross-subsidisation created a complex administered interest rate structure with virtually no role for market forces in the pricing and allocation of credit.

Besides RBI support and other domestic market borrowings, another means of financing a government deficit is the funds raised under public accounts, consisting mainly of small savings and provident funds, which attract high interest rates. Investments in these instruments also enjoy tax incentives, which enabled the government to garner sufficient funds to close the resource gap. The regulation of interest rates on small savings created distortions in the interest rate structure as well as in allocative efficiency. Furthermore, the integration of financial markets remained weak due to the rigidities in the administered interest rates.

Reforms in the 1990s

The 1990s were characterised by fundamental changes in monetary/fiscal coordination as part of the macroeconomic reform programme. This was largely facilitated by the conscious efforts of the government to launch a comprehensive programme of economic reform in July 1991 with fiscal correction as its key element. The agenda of fiscal correction focused on both tax reform and expenditure management. Reforms in taxation concentrated on the progressive reduction of tax rates, the rationalisation and simplification of tax laws, and effective tax compliance. The focal point in expenditure management was the containment of non-plan expenditures in order to enhance public spending in productive sectors and thereby to provide a stimulus to economic growth. Although the progress in reducing the fiscal deficit was interrupted and even suffered a reversal, the fiscal retrenchment experienced facilitated a more conducive environment for undertaking some path-breaking measures to strengthen fiscal/monetary coordination as well as financial sector reform.

Interest rate deregulation

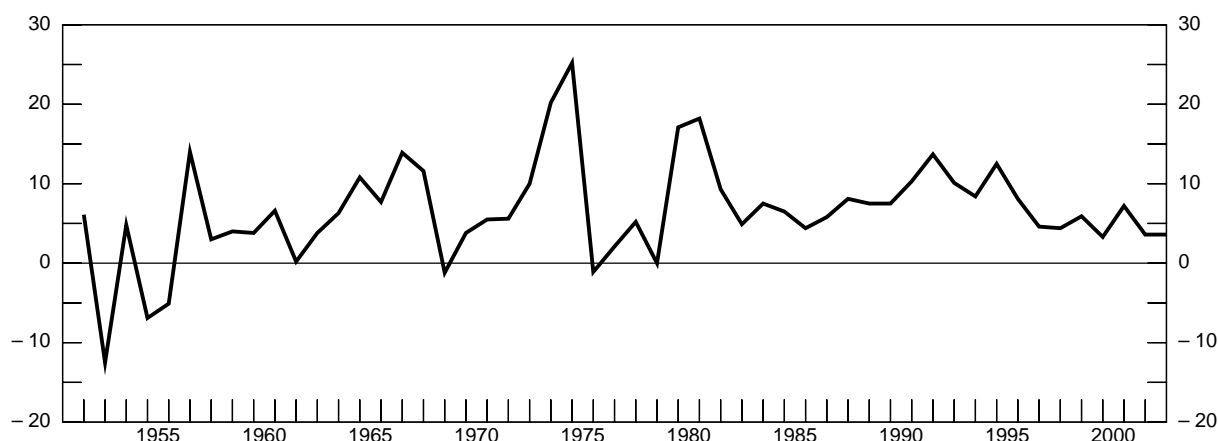
The structure of administered bank interest rates has been progressively dismantled over the years. On the deposit side, prescriptions on rates, including the conditions governing premature withdrawal, and uniformity of rates between depositors irrespective of size of deposits, have been removed. At present, the lone regulation relates to the savings bank interest rate, which has been fixed at 4% since 1 April 2000. On foreign currency non-resident bank deposits, there is an interest rate ceiling of Libor minus 0.25%. Lending rates for different categories have also been liberalised. In the interest of transparency, banks are required to declare their prime lending rates (PLR), but lending at sub-PLR has been permitted. Prescriptions, however, still remain on loans up to INR 0.2 million and for export credit, both linked to the PLR. Banks are also permitted to accept deposits or lend on floating interest rate terms. Reforms in the small savings segment are making interest rates more flexible. Initially, the interest rates on such small loans have been reduced in alignment with market interest rates. The government has announced a broad decision to link small savings interest rates to yields on government securities of similar maturity, which reflect market rates of interest.

Containment of inflation

Inflation (measured by the wholesale price index) over the past fifty years has averaged 6.5%; reasonably satisfactory compared to many developing economies. The inflation rate was fairly low (averaging 1.2%) during the 1950s, although it exhibited substantial volatility. Inflation, however, increased to 6.4% during the 1960s, reflecting a variety of factors such as the two wars (1962 and 1965) and famine conditions (1965-67). Reflecting the impact of the supply shocks emanating from movements in crude oil prices (1973-74 and 1979-80) and crop failure (1972-73), inflation and its volatility both increased during the 1970s: while the inflation rate averaged 9.0% during the 1970s, the standard deviation too was 9.0%. The average inflation rate in the 1980s declining only marginally to 8.0%; attributable to demand pressures deriving from a pickup in growth, partly stemming from the widening fiscal imbalances and the resultant monetary financing. The volatility (standard deviation), though, declined to 3.9% during the 1980s. The second half of the 1990s were marked by a significant fall in inflation to an average 5.3% due to macroeconomic stabilisation and structural reforms pursued during the decade. Inflation was down to almost 1% during 2002 but back to 6% in early 2003.

Graph 1

Inflation in India¹



¹ Annual percentage change in the wholesale price index.

Source: National data.

Elimination of automatic monetisation

A fundamental step during the reform period to strengthen fiscal/monetary coordination was the signing of an agreement between the central government and the RBI in 1994 to replace the automatic monetisation of the budget deficit by the WMA system to finance temporary government mismatches within a ceiling. Under the new system, the RBI was required to set the limits on WMAs to the government with effect from April 1997. When 75% of the WMA limit is utilised by the government, the RBI may trigger a fresh flotation of market loans depending on market conditions. Any amount exceeding the WMA limits is treated as an overdraft. Overdrafts are limited to 10 consecutive working days. The interest rate on WMAs is the Bank rate, and on overdrafts, the Bank rate plus 2 percentage points. Until recently WMA limits for state governments were linked with the cash balances the states maintained with the RBI. However, since 1999-2000 the WMA limits are determined on the basis of a three-year average of revenue receipts and capital expenditure.

Development of the government securities market

The government securities market is a core constituent of the Indian financial system. Since 1991, a number of measures have been taken by the RBI for widening and deepening the market. With the switch in 1992 to borrowings by the government at market-related interest rates through an auction system, and more recently the abolition of the system of automatic monetisation, it became possible to progress towards greater market orientation in government securities. Depth, liquidity and transparency were added to the market by reforms such as;

- introducing new instruments across the maturity spectrum (zero coupon bonds, floating rate bonds, capital-indexed bonds, bonds with call and put options),
- establishing a system of delivery versus payment, the introduction of primary dealers with liquidity support and incentives for underwriting,
- authorising foreign institutional investors to invest in dated securities and T-bills in both the primary and secondary markets,
- announcing an auction calendar for T-bills and dated securities,
- Clearing Corporation of India Ltd commencing operations,
- introducing a negotiated dealing system, and
- the dissemination of online market information.

Furthermore, these reforms have facilitated the switch to indirect tools of monetary management by the RBI through open market operations and repos.

In the initial years of financial sector reform, considering the market perception and the period of transition from preannounced coupon to market-related rates, the maximum maturity on government securities was reduced from 20 to 10 years. This led to a bunching of redemptions in the first few years. In order to avoid this bunching and frequent rollovers, in recent years efforts have been made to elongate the average maturity of central government bonds. The maximum maturity of fresh primary issuances was raised from 10 to 20 years in 1998/99 and then to 25 years in 2001/02 and further to 30 years in 2002/03. Accordingly, the weighted average maturity of public debt for the central government rose from 5.5 years in 1996/97 to 14.3 years in 2001/02. Steps such as consolidating issuances in key maturities, enhancing fungibility and liquidity through the reissue of existing loans and promotion of the retailing of government securities have made the long-term rates more market-related. They have also provided an enabling environment to create a suitable benchmark for pricing various debt instruments catering to the needs of long-term investors. Consequently, the yield on 10-year central government securities is evolving as a long-term benchmark rate.

The wider market participation in the government securities market has obviated the need for the government to depend predominantly on RBI credit for financing the fiscal gap. With concomitant reforms in the money market, such as development of the repo market and the introduction of a liquidity adjustment facility, the interest rate transmission channels of monetary policy have attained greater effectiveness in the recent past. Moreover, currently, the RBI's participation in the government debt market through both primary and secondary operations is part of its overall monetary management consistent with the monetary stance as compared with automatic monetisation until the early 1990s.

Fiscal policy rules

Explicit fiscal rules on deficit and debt, as prevailing in advanced countries, are still evolving in India. The budget process, however, implicitly involves some controls on spending and borrowing. For instance, the size of the deficit, level of expenditure and borrowings are approved by the relevant legislature as part of the annual budget for both the central and the state governments. Similarly, limits are placed on the borrowing powers of the central and state governments, under the provisions of Article 292 and 293 respectively of the Indian constitution. Their WMAs from the RBI are also limited. Moreover, comprehensive legislation, namely the Fiscal Responsibility and Budget Management Bill 2000, is being contemplated by the central government, which would provide the legal and institutional framework to lower fiscal deficits, contain the growth of public debt and prohibit direct borrowings by the central government from the RBI, except by temporary advances.

3. Current issues

Fiscal stress

Many economies are confronted with persistent fiscal imbalances, which are structural and difficult to address. In India, fiscal imbalances arise from the government's inability to raise adequate revenues to meet growing expenditure. Being the banker to the government, the RBI is often required to provide temporary financial support in the form of WMAs. Such accommodation on a continuous basis would be a potential threat to monetary management by the central bank. Moreover, being the debt manager for both the central and state governments, the RBI needs to strike a balance between short-run liquidity management and cost-effective public debt management

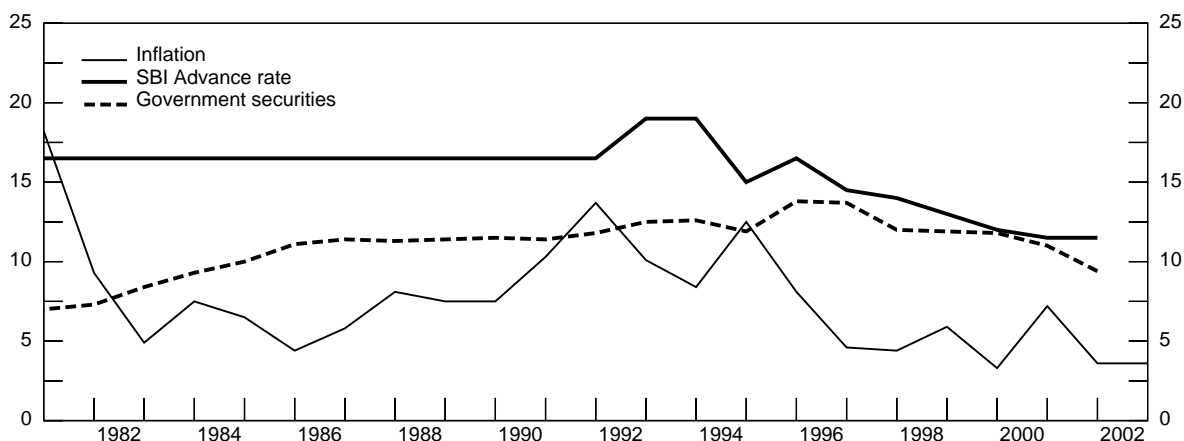
High real interest rates

In India, fiscal dominance persists with a growing volume of gross market borrowings despite some improvement in monetary/fiscal interference. The RBI's endeavour has, therefore, been to ensure that the fiscal gap is financed in the least disruptive way since conduct of monetary policy without sensitivity to fiscal realities will be counterproductive. However, for macroeconomic stability, the sustainability of the real interest rate is critical. Past experience shows that the rise in the real interest rate on government bonds was mostly due to the high combined government sector deficit. With

markets becoming increasingly integrated, the demand pressure on the bond market has repercussions for the entire structure of interest rates in the economy.

Graph 2

Nominal interest rates and inflation¹



¹ In percentages.

Source: National data.

Notwithstanding that long-term rates have become more market-related, the effect in terms of fiscal discipline is not yet visible, since the market borrowing programme is predetermined and there is no feedback effect on fiscal discipline. Being both the debt and monetary manager, the RBI adopts a conscious strategy of private placement/devolvement of government securities, in line with the monetary stance. In case the liquidity conditions in the market are not appropriate for a market issue or in the event that the market is expecting unreasonably high yields from primary offerings as reflected in bids received, the RBI may resort to private placement/devolvement of securities which it offloads subsequently when the market conditions stabilise.

State finances

The states' fiscal outturn significantly affects India's overall fiscal performance, as they account for about 40% of India's gross fiscal deficit. The state governments' fiscal deterioration, especially since the second half of the 1990s, has reflected inadequate revenue and growing expenditure. Broadly, the issues of concern to the RBI relating to state finances are:

- the need for successful completion of the market borrowing programme of the states, with the RBI acting as debt manager, without causing undue pressure on the market;
- the RBI's role as banker to the state governments; and
- the considerations of the RBI as monetary authority regarding financial stability. The last factor assumes critical importance, especially in view of the increasingly significant exposures of banks and financial institutions to state government paper.

The RBI has undertaken many initiatives in recent years to address these issues. First, in order to provide better managed states with greater flexibility to access funds at more favourable rates, an option has been given to the state governments since 1997/98 to raise between 5 and 50% (initially 35%) of their market borrowings through the auction process. Second, to facilitate timely debt servicing by state governments, the RBI has been making the state governments aware of the benefits of setting up consolidated sinking funds, and a number have done so. Moreover, the Technical Committee on State Government Guarantees (1999), set up by the RBI, recommended limiting guarantees, greater selectivity in providing guarantees and the creation of a contingency fund for guarantees. The RBI has also advised banks and financial institutions to eschew any proposal for financing government budgets, directly or through special purpose vehicles. With effect from 2000/01, investment by banks in state government securities outside the market borrowing programme attracts

a risk weight of 20% for the purpose of provisioning. In case of default, such investments are to be treated as non-performing assets and a 100% risk weight is to be attached with adequate provisioning. In view of the fiscal implication of the rising level of guarantees, some states have taken the initiative to place ceilings on guarantees. Like the central government, certain states have initiated or proposed statutory backing of the fiscal reform process through enabling legislation relating to the size of the deficit, a limit on the outstanding stock of debt and the use of borrowed funds. The state of Karnataka has already passed a fiscal responsibility bill.

Separation of debt management

With the large fiscal deficit experienced in recent years and the consequent large market borrowing programme of the government, there has for many years been an overarching influence of debt management policy on monetary policy. The extensive monetisation of the fiscal deficit and borrowings at lower than market-determined interest rates significantly affected the effective functioning of monetary policy. In the process, the monetary policy function became somewhat subservient to debt management. This is compounded by the fact that the RBI statutorily acts as the fiscal agent of the government in managing the public debt. Assigning the debt management policy function to the RBI confronts the RBI with a direct dilemma between debt management and monetary policy. The planned Fiscal Responsibility and Budget Management Bill Act, inter alia, clearly delineates the responsibilities of fiscal policy and monetary policy.

To sum up, the RBI has been reiterating the need for fiscal empowerment by augmenting the volume and scale of revenue (both tax and non-tax) flowing into the budget. Revenue maximisation requires that the tax system be reformed through a widening of the tax base, simplification of tax rules, review of exemptions/incentives and strict tax compliance to arrest the declining trend in the tax/GDP ratio experienced through the 1990s. The RBI has also been emphasising the need to adopt a comprehensive approach to the management of public expenditure, which requires explicit recognition of the macroeconomic linkages of government expenditure policies, the setting of expenditure priorities and ensuring that specified activities are being undertaken efficiently and effectively.

Fiscal issues and central banks: Indonesia's experience

Anwar Nasution¹

1. Indonesia's recent fiscal experience

Prior to the economic crisis, Indonesia had a good track record of fiscal prudence. For three decades, the government had avoided financing its deficits through money creation or government debt, relying instead on external concessionary financing. This ensured domestic financing was available to the private sector and inflation was kept in check.

The severe economic crisis in 1997 left the Indonesian government with a huge amount of debt, primarily due to the recapitalisation of the banking system, which cost about half of annual GDP. In addition, the burden of servicing the external debt rose sharply due to the rupiah's depreciation, and to a lesser extent some increase in foreign borrowing. Total government debt, both domestic and external, rose from 25% of GDP at end-1996 to 102% by end-2000. This large debt burden has threatened Indonesia's economic recovery and put fiscal sustainability at risk.

In response, the government has set two strategic objectives for the budget: reducing the ratios of the deficit and total debt to GDP. It intends to optimise domestic tax and non-tax revenues, improve the efficiency of public expenditure, decrease subsidies and reduce reliance on external financing.

Some encouraging progress has been made. Notwithstanding some revised assumptions, most importantly about GDP growth, inflation and interest rates, and the economic fallout from the Bali bombing, fiscal policy is back on track, with the fiscal deficit for 2002 estimated at 1.7% of GDP, well below the 2.8% in 2001.

Total revenue in 2002 of around IDR 300 trillion was about the same as in 2001. However, compared to GDP, revenue in 2002 (18% of GDP) was lower than that of 2001 (20% of GDP). The government continues to intensify tax collection and expand the tax base in terms of both the number of taxpayers and the types of taxable income. The government lowered its spending relative to GDP, mostly by cutting central government routine expenditure. The major component of current expenditure remains interest on public debt, which consumes 5.6% of GDP. This is less than the 6.0% of GDP in 2001, as interest rates eased and the rupiah strengthened.

2. Fiscal positions in the medium term

The effort to safeguard fiscal sustainability continues. Parliament has agreed to a budget deficit of 1.8% of GDP for 2003 and a balanced budget in 2004. Budgetary subsidies should be phased out by 2004. Over the longer term, the government is committed to lowering debt to below 60% of GDP.

Almost all domestic debt takes the form of bonds issued for the bank recapitalisation programme and promissory notes issued to the central bank (Bank Indonesia, BI) to cover BI's liquidity support to ailing banks and financing bank liabilities under the guarantee programme. Most government bonds will mature during 2004-09. The main concern of domestic debt management is to smooth out the maturity profile of bonds coming due in 2004-09 to a new series of bonds maturing in 2010-20. This has been facilitated by parliament passing a law in September 2002 regulating the rescheduling of the bank recapitalisation bonds. The law also allows the government to issue domestic debt instruments in order to finance the state budget. The government is also reducing outstanding debt through a

¹ Senior Deputy Governor of Bank Indonesia.

buyback programme financed by proceeds from asset disposals by the bank restructuring agency, proceeds from privatisation and divestments and direct swaps for the restructuring agency's loan assets. The government has also worked hard to develop a liquid and active secondary bond market so that optimal debt portfolio management can be achieved in the future.

The government has strengthened cooperation with the central bank to help achieve monetary stability (low inflation rate and stable exchange rate). Given its interest-sensitive debt, the government seeks lower interest rates. Under a burden-sharing agreement between the government and BI, in line with the recommendations of the independent team headed by Mr Volcker, a large proportion of government promissory notes were finally converted into perpetual notes with zero interest. So far the government has issued IDR 228 trillion of promissory notes to BI, of which IDR 159 originated from liquidity support given to banks during the crisis to prevent the collapse of the payment system. IDR 25 trillion of the cost will be borne by BI.

Measuring the fiscal position and assessing sustainability

The current central bank law gives BI the sole objective of achieving and maintaining the stability of rupiah value. Given the strong implications of the budget for monetary policy, the central bank should coordinate with the fiscal authority.

The most relevant measure of the fiscal position for the central bank is the impact of fiscal conditions on base money, as this serves as the operational target. Under the current monetary targeting framework, the impact of fiscal policy is divided into three main channels: (i) maximisation of revenues, mainly from tax; (ii) reduction of expenditure by cutting either routine expenditure such as subsidies or development expenditure; and (iii) financing of the deficit.

Assessing fiscal sustainability is also important for the central bank. Steps taken by the government to achieve fiscal sustainability will affect the central bank's monetary policy objectives. For example, the government may insist that the central bank maintain low interest rates or may ask the central bank to fund the budget deficit.

Fiscal sustainability means that the government can repay its debts in an orderly way without resorting to extraordinary measures. Simple measures of assessing sustainability include whether GDP is growing faster than debt, GDP growth exceeds the domestic real interest rate, export growth exceeds the external real interest rate and depreciation, and the money base is growing faster than GDP. As long as these conditions are met, the debt/GDP ratio will eventually decline. The central bank can assist fiscal sustainability by maintaining relatively low interest rates to encourage economic recovery and lighten the government's interest burden without sacrificing monetary objectives.

Constraints on the provincial fiscal position

The legal basis for decentralisation in Indonesia is provided by laws 22/1999 and 25/1999, which emphasise the devolution of authority from the central government to districts and municipalities. Previously the provincial government was the second most powerful level. Now provincial governments serve only as the representatives of central government in the region and will handle inter-district affairs while the bulk of spending authority is devolved to the local governments.

The law allows local governments to borrow from external sources: central government, financial institutions, other local sources and foreign institutions (bilateral or multilateral). Local governments can borrow either long- or short-term, but long-term debt (maturity over one year) can only be used for development projects, not to meet cash flow problems. However, due to the current national debt problem, a presidential decree has been issued to halt the borrowing by local government.

Government regulation 107/2000 sets out a three-part rule on local government borrowing:

- total amount of principal local debt repayment in any fiscal year should not exceed 75% of the local general revenue in the previous year;
- debt service coverage ratio (net revenue less non-discretionary expenditure divided by total amortisation and interest payments) is projected to exceed 2.5 during the borrowing period;
- short-term borrowing is less than one sixth of the local budget and has to be fully paid back by the end of the year.

The borrowing proposal must be approved by the Ministry of Finance and the local parliament.

Improving fiscal discipline and fiscal rules

The central bank law prohibits BI from buying government bonds in the primary market. In any case, no government bonds have been issued to fund budget deficits. The government bonds were issued to recapitalise banks and replace liquidity support by the central bank. To enhance market confidence, the government explicitly allocates about one fifth of the budget to paying interest on domestic debt. On the financing side, the government will issue some new bonds to replace maturing debt as indicated in the National Development Programme. In addition, as mentioned above, the government is extending the maturity of some bonds.

As in most countries, the government is required to submit an annual budget bill to parliament. Since 1997, the government has not been able to leave any revenues or expenditure off the balance sheet. As well as the amounts of money involved, the bill must also indicate the fiscal strategy and the underlying macroeconomic assumptions. If the assumptions are revised, an amended budget bill must be submitted. As a long-term guideline, the budget deficit and spending are controlled through the National Development Programme Act 2000-04.

Fiscal sustainability can be accomplished through either raising taxes or cutting spending. Cutting spending will help ease demand pressures while reducing subsidies for petrol will affect the supply side and eventually create inflation. Other examples of major government policies that influence inflation are electricity tariffs, transport rates and fuel prices.

3. Countercyclical policy: monetary policy, fiscal policy or both?

The increasing popularity of independent central banks has made monetary and fiscal policy more independent. But this does not mean that central bankers are indifferent to fiscal policy. As mentioned above, achieving rupiah stability requires BI to maintain close coordination with the government. For example, the government should be fully aware of the impact of reducing subsidies on inflation, and the impact of large government transactions on base money. On the other hand, BI must be aware that excessive tightening of monetary policy would be harmful to economic growth. Furthermore, each percentage increase in domestic interest rates adds IDR 2-2.5 trillion to the budget for interest payments.

Based on Indonesia's experience, countercyclical monetary and fiscal policies are not employed. Fiscal policy is directed towards a balanced budget and monetary policy towards monetary stability. The central bank does not adjust monetary policy to boost the economy. It aims at creating monetary stability that in turn will induce economic growth.

While the government budget does not have an annual cyclical pattern, there is a seasonal pattern. Revenue and expenditure peak in the last quarter of each year. On the monetary front, the central bank always tends to apply tight monetary policy or at least neutral monetary policy in order to bring base money to its indicative target. These two illustrations show that there is no automatic stabiliser between fiscal and monetary policy.

4. Central bank balance sheets and fiscal policy-type operations

As mentioned above, BI has provided liquidity support to prevent bank runs and payment system failure. As a consequence, it issued BI certificates to absorb the huge amount of excess liquidity. The increasing burden of paying interest on these certificates raised the problem of the financial soundness of the central bank itself. The problem was exacerbated when the government disputed how much of the losses related to the provision of liquidity support should be borne by BI. After long discussions, the burden-sharing agreement is nearing fruition. The government has sent its final proposal for review by the Supreme Audit Board ahead of further consideration by parliament. However, as noted above, this involves BI paying interest on its own certificates but earning no interest on the government's perpetual notes. This presents a tough challenge in BI's balance sheet. If

the dispute is not settled soon, it may eventually erode the central bank's financial sustainability. A possible solution is to convert the government notes into a marketable instrument, but this would require parliamentary approval as it affects the budget.

The interaction between fiscal and monetary policy in Israel

Meir Sokoler

1. Introduction

For more than a decade there has been a worldwide trend to increase central bank independence and to sharpen the focus of monetary policy as a means of achieving price and financial stability.

Ever since the seminal work of Sargent and Wallace (1981) it has been recognised, however, that granting legal independence to a central bank is not sufficient to keep monetary policy effective on a sustained basis. Recently Woodford (1994, 2001), Canzoneri et al (2002) and others emphasised that for monetary policy to be effective it should not be dominated by fiscal policy. Alternatively, in addition to granting legal independence to the central bank, the fiscal policy regime must be such that it does not allow changes in the price level to become the mechanism through which the condition for government solvency is satisfied. In other words the framework of fiscal policy should result in a monetary dominant regime.

This paper discusses the interaction between fiscal and monetary policy in Israel as it pertains to the issues of fiscal versus monetary dominance. Section 2 describes the main features and some of the problems of the legal and institutional framework in Israel. Section 3 shows how one of the monetary models of the Bank of Israel (BOI) used in the monthly monetary policy deliberations incorporates the influence that fiscal policy may have on the BOI's key interest rate. Section 4 uses Israel's recent experience to show the adverse effects on the price level and financial stability when fears of fiscal dominance grow. It also points out the important role that financial markets play in sending warning signals to the fiscal authorities to avoid fiscal dominance. Section 5 concludes.

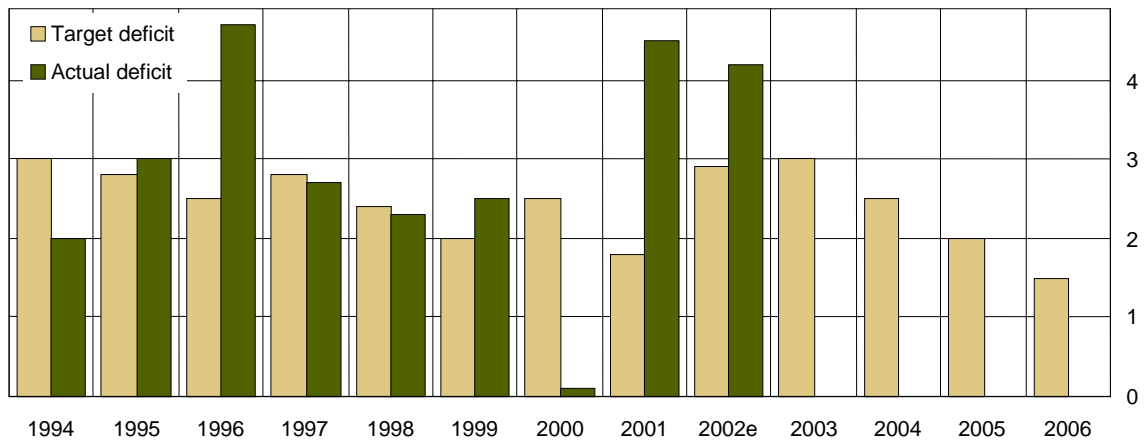
2. The legal and institutional framework

The legal and institutional framework in Israel affects the interaction between monetary and fiscal policy in several ways. First, Section 45 of the Bank of Israel Law prohibits the extension of central bank credit to the government. Second, the Budget Deficit Reduction Law of 1992 requires the government's overall budget deficit, as a percentage of GDP, to decline year by year.¹ Third, the Governor of the BOI is by law the economic adviser to the government. He participates in the government's budget deliberations and also expresses his opinion in public. In addition to discussing government expenditure, tax issues and the size and sustainability of the deficit and public debt, the Governor also discusses the composition of government expenditure, as well as a broad range of other economic issues. Fourth, the BOI is by law the fiscal agent of the government, and the Treasury has to consult with the BOI regarding debt management issues.

At first glance, this setup seems sufficient to prevent fiscal dominance and to enable an effective long-term monetary policy. In practice, however, the situation is more problematic. The main problem is that the Deficit Reduction Law has no legal "teeth" and has been breached many times. The deficit targets were often revised upwards and the date by which the deficit was supposed to be eliminated was pushed further and further into the future (Graphs 1 and 2).

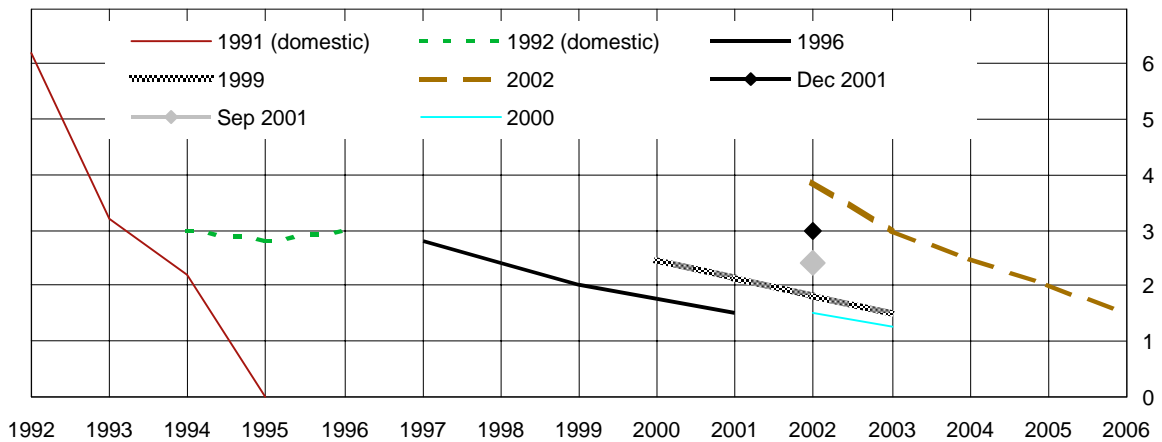
¹ An exception to the above is the possibility of the government issuing bonds to the BOI and using the proceeds to purchase foreign exchange in a situation where the government's foreign exchange expenditure exceeds its foreign exchange revenue. The terms of this loan must be agreed by the Governor of the BOI; so far no such loan has ever been made.

Graph 1
Budget deficit¹
 In percentages to GDP



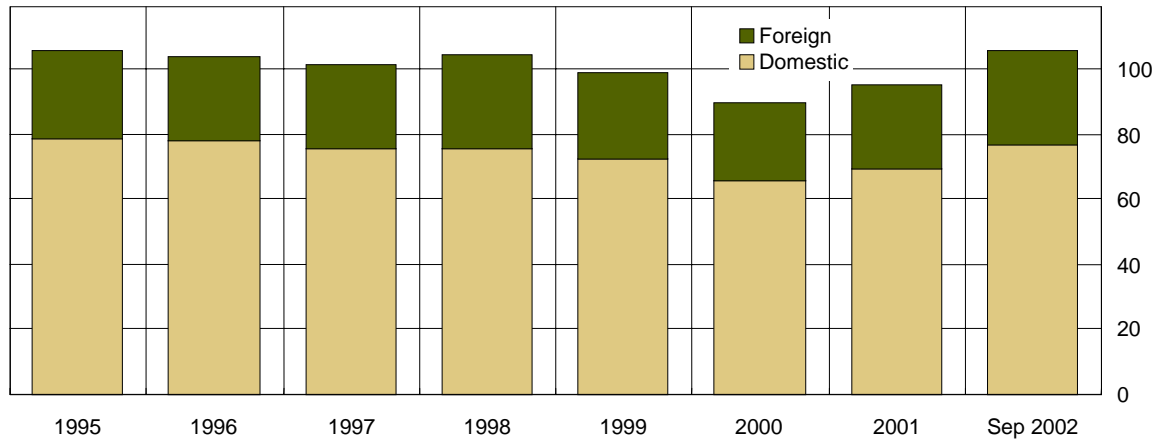
¹ Until 1996, domestic budget deficit ceiling; in and after 1997 overall deficit including Bank of Israel profit, by law; since 2001 overall budget deficit.

Graph 2
Target deficit updates
 In percentages of GDP



In spite of the many problems in implementing the Deficit Reduction Law, the institutional framework described above did nevertheless serve as a deterrent against abandoning fiscal prudence. Thus, throughout the 1990s there was a steady decline in the debt/GDP ratio, albeit from very high levels by international standards (Graph 3). The average maturity of the government's debt - about 6.8 years - also indicated no immediate danger of approaching fiscal dominance. Against this background, monetary policy within an inflation targeting framework proved effective enough to reduce inflation and inflation expectations from a level of 15-20% per year at the beginning of the 1990s to the current 1-3% a year defined as price stability.

Graph 3
Gross government debt
 As a percentage of GDP

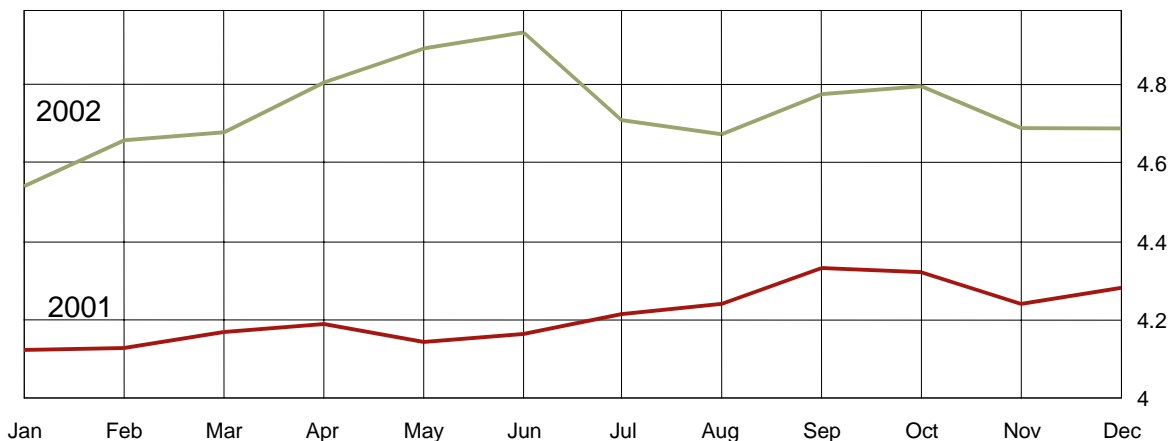


Since the end of 2000, economic conditions in Israel have deteriorated markedly due to the worldwide slowdown in economic activity, tumbling share prices, especially in the United States, and the further deterioration in the security and political situation in Israel. These factors adversely affected GDP growth, which declined from 6% in 2000 to -0.9% in 2001 and in 2002. These negative developments have clearly increased the vulnerability of Israel's financial system.

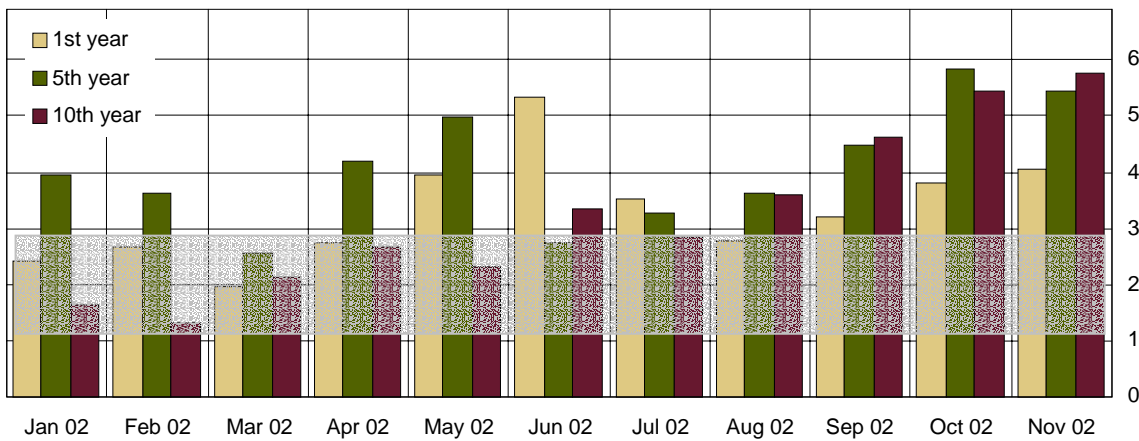
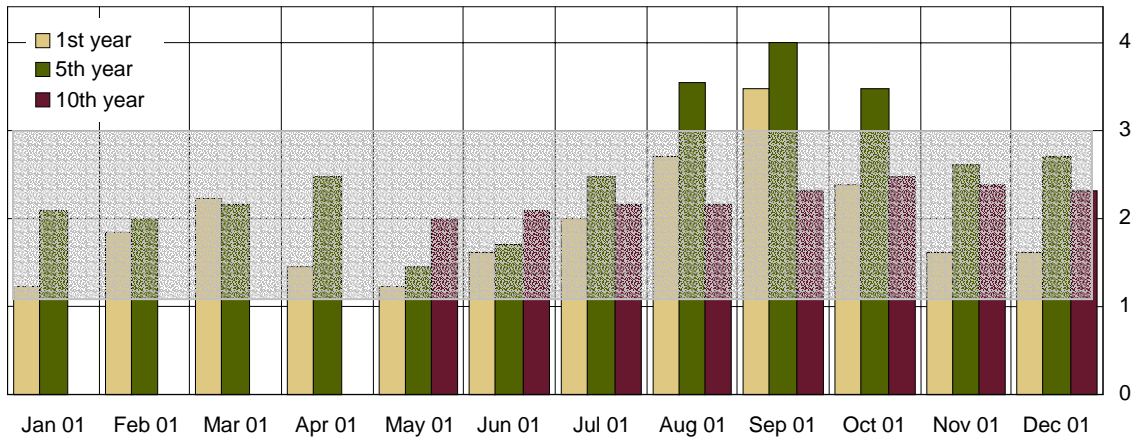
In spite of the difficult situation the financial system has shown remarkable resilience, evident in:

- a stable foreign exchange market characterised by orderly trade and low volatility (lower line in Graph 4);
- inflation expectations for various horizons (derived from regular and CPI-indexed bonds for various maturities) well within the 1-3% range (Graph 5);
- a low probability of a large depreciation of the shekel, derived from the BOI shekel/dollar options (Graph 6);
- declining short- and long-term interest rates (Graph 7).

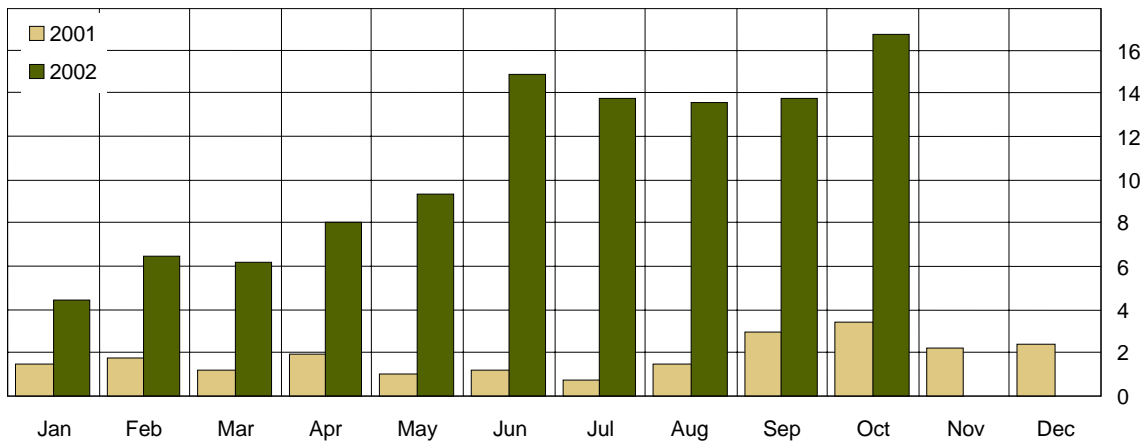
Graph 4
Exchange rate new shekels per US dollar
 Monthly averages



Graph 5
Capital market inflation expectations
 In percentages

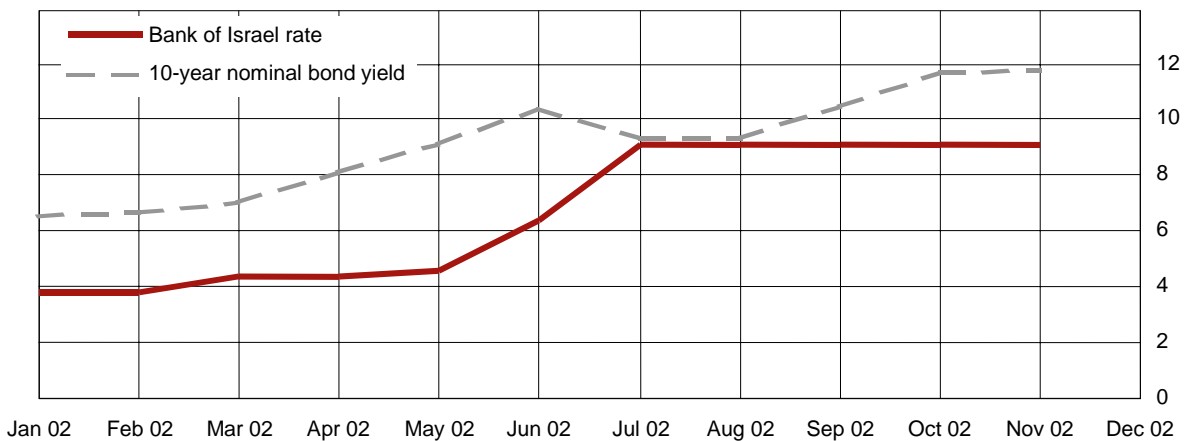
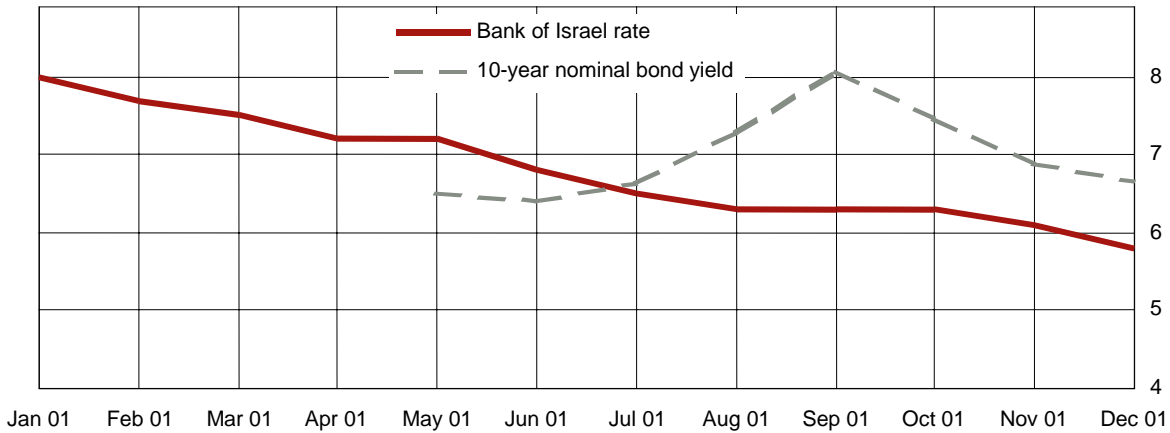


Graph 6
Probability of depreciation¹ of more than 10% in six months
 Monthly average, in percentages



¹ Shekel/US dollar exchange rate.

Graph 7
Nominal interest rates
 In percentages



These impressive results, against a very difficult background, were possible because fiscal and monetary policy were focused on reducing the deficit and government debt and on maintaining price stability respectively, and were so perceived by the public. In other words, the public saw little danger of fiscal policy becoming dominant. Matters changed drastically for the worse towards the end of 2001 and the situation deteriorated even further in 2002 (see Section 4).

3. How fiscal policy enters the monthly monetary policy deliberations

The interaction between fiscal and monetary policy in Israel can be also examined from the perspective of the various models that the BOI uses in its monthly monetary policy deliberations. One of these models (Elkayam (2001)) is a small, forward-looking neo-Keynesian model, à la Clarida et al (1999), with one twist. Instead of the standard output gap in the inflation equation there appears an interest gap (see the Appendix for an outline of the basic equations of the model). This gap is the

difference between the current real rate and a proxy of the natural rate of interest. The current real rate is measured as the difference between the BOI's key rate (lagged) and expected inflation. The proxy for the natural rate is the real yield on 10-year government bonds traded regularly on the Tel Aviv Stock Exchange.² As the model is forward-looking, each month it generates a whole path for the BOI's key rate as well as other endogenous variables. The end point of this path, viewed from the present, is the steady state nominal key rate consistent with price stability whose real rate component is equal to the natural rate. That means 2% plus the real yield on 10-year government bonds.³ The end point (as well as the entire path) is revised each month depending on the changes in the 10-year real yield. One of the factors affecting the changes in this yield is the unexpected change in the financing needs of the government. As this clearly depends very much on the course of the fiscal policy pursued by the government, this approach enables fiscal policy issues to be incorporated into the monthly monetary policy discussions.⁴

4. The adverse effects of 2002

During 2001 it became apparent that the deficit target would be exceeded to a very significant degree. This was mostly due to a large shortfall of tax receipts resulting from the rapid deterioration in economic activity. At the end of 2001 the macro policy challenge was to restore public confidence in fiscal prudence and at the same time take steps to alleviate the worsening economic conditions. The course chosen was a publicly agreed change of the policy mix by the government and BOI. The agreement aimed at:

- (a) Reassuring the public that the government was determined to take the necessary steps to deal with its deteriorating fiscal position. The concrete step was an announced deficit target of 2.4% for 2002 and 1.0% for 2003 (originally the target was 1.5% for 2002 but it became clear that it would not be met because of shortfalls in taxes resulting from the recession). It was feared at the time that without immediate corrective measures the deficit in 2002 might reach 6 or 7% of GDP.
- (b) A change in the macro policy mix - tighter fiscal policy and looser monetary policy. The idea was to bring down both short- and long-term interest rates to stimulate economic activity without adversely affecting the price level and financial stability.

It soon became apparent, however, that because of political difficulties the government was not able to keep its part of the agreement. The result was a sharp reaction of the financial markets:

- the exchange rate shot up and became more volatile (upper line in Graph 4);
- the whole term structure of inflation expectations moved way above the inflation target range of 1-3% (Graph 5);
- the probability of a large depreciation of the shekel increased markedly (Graph 6);
- the level of interest rates at all maturities moved, well above the inflation target range (Graph 7).

These conditions led the government to shorten considerably the maturity of its new bond issues to the public. Whereas in 2001 10-year fixed rate nominal bonds comprised 10% of all government bonds

² The key rate in the model reacts to the difference between expected inflation and the target, as well as to the lagged key rate.

³ 2% is the midpoint of the inflation target range of 1-3%, which was declared by the government as the standing target for price stability.

⁴ The long-term real yield is only a proxy of the natural rate and may of course be affected by the BOI's key rate. Thus, judgment is added in using the real yield as a proxy for the natural rate.

issued in that year, their issue was virtually stopped in 2002 and the typical maturity of the nominal bonds was five years.⁵

Continuing to shorten the horizon of the government debt, under the circumstances described above, may easily be interpreted by domestic and international investors as moving in the direction of fiscal dominance.

The BOI reacted to these developments with several hikes of its key rate: after two increases in the interest rate, by 1 and 1.5 percentage points, in June 2002 the key rate in early 2003 was 8.9%. In addition the very negative reaction of the financial markets forced the government to pass the 2003 budget with another upward revision of the deficit to 3% of GDP. But even this deficit target met many difficulties in parliament. In fact the budget was a main reason for calling an early election. It was finally approved by a large majority as the Knesset's last act before dissolving itself.

5. Concluding remarks

In order to maintain price level and financial stability it is necessary to avoid fiscal dominance. The evidence from Israel shows that it is not enough to have an institutional and legal framework which guarantees the central bank's independence. What is required in addition is a framework which guarantees fiscal prudence in the medium term. It is important to ensure that the growth of government debt is contained and that the maturity of the debt does not become shorter so as to leave monetary policy entirely ineffective. The evidence from Israel also suggests that well developed financial markets, as a means of sending messages to policymakers, are important in trying to avoid fiscal dominance. In this regard, the institutional and legal setup and the government bond markets reinforce each other.

⁵ The government also issues CPI-indexed bonds with terms of up to 20 years and a variable rate nominal bond of up to 10 years. The maturity profile of all bonds issued in 2002 was shorter than that in 2001.

Appendix

(1) The inflation equation:

$$dp = \beta_0 + \beta_1(de + dpim) + \beta_2Edp + \beta_3(i - Edp - r) + lags$$

(2) The exchange rate devaluation equation:

$$de = dp - dpex + \gamma_1(\Delta i - \Delta id) + lags$$

(3) The monetary policy reaction function:

$$i = \delta_1[r + dpT + \delta_2(Edp - dpT)] + [1 - \delta_1]i_{t-1}$$

(4) The inflation expectations equation:

$$Edp = E_t(dp(+4) | I(t))$$

or

$$Edp = \phi_1 dp + \phi_2 Edp(-1),$$

where:

dp - the rate of change of the CPI;

de - the rate of change of the shekel/ US dollar exchange rate;

$dpim$ - the rate of change of the import price (abroad, in dollar terms);

Edp - expected inflation for the following four quarters;

i - the nominal interest rate set by the BOI;

r - the real yield to maturity on indexed 10-year bonds;

dpT - the inflation target for the following four quarters;

$dpex$ - the rate of change of the price of exports (in dollar terms);

id - the Libid US dollar interest rate;

$I(t)$ - the information known up to time t ;

$dp(+4)$ - expected inflation for the next four quarters.

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The fiscal response to the currency crisis and the challenges ahead - Korea's experience

Chung Kyu Yung¹

1. Fiscal management and its impact after the currency crisis

Fiscal position before the currency crisis

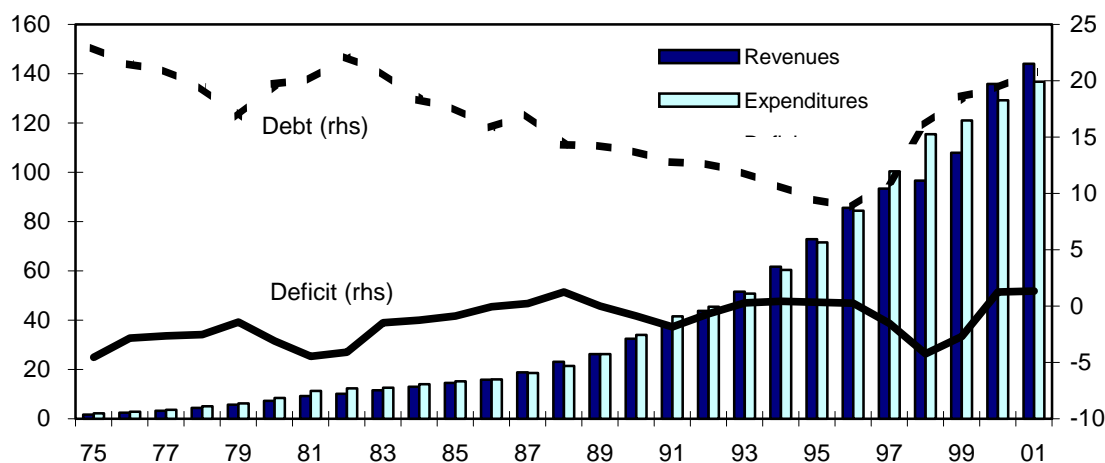
Central government expenditure was approximately 20% of gross domestic product during 1975-97. During 1975-82 it remained around 20-22% before easing to 16-19% during 1983-95, but rose again to 22% immediately before the currency crisis. Meanwhile, the scale of the consolidated public finances increased by 19.5% per annum during 1975-97.

The consolidated fiscal balance showed a chronic deficit, apart from a few exceptional periods in the latter half of the 1980s and the first half of the 1990s, because of stimulatory fiscal policies adopted in the process of economic development. In the 1970s and the first half of the 1980s, the ratio of the fiscal deficit to GDP exceeded 2%. The ratio rose above 4% immediately after the first and second oil shocks. From the early 1980s to just before the currency crisis, however, it stood at less than 2% of GDP and there were occasional fiscal surpluses. The ratio of national debt (excluding local governments) to GDP steadily declined from 23% in 1975 to 9% in 1996, immediately before the currency crisis.

Graph 1

Trends of revenues, expenditures, deficit and debt

In trillions of won (lhs) and as a percentage of GDP (rhs)



Source: Ministry of Finance and Economy.

¹ Director-General of Research Department of The Bank of Korea.

In conclusion, the Korean government had scope to pursue bold fiscal stimulation policies to overcome the currency crisis thanks to firm adherence to the fiscal principle of “expenditures within revenues” over a period of many years.

Major fiscal policies after currency crisis

Supporting financial restructuring

In the run-up to the currency crisis of late 1997 and in its aftermath, due to interest rate hikes and a credit crunch, a number of large corporations collapsed in chain insolvencies and the undercapitalised banks, securities companies, and some financial institutions were thrust to the brink because of a shortage of liquidity. Accordingly the financial market became extremely unstable and even the financial system itself faced the risk of collapse.

The Korean government proceeded to clean up the troubled financial institutions by the suspension of operations, purchase and assumption (P&A) and mergers etc and injected KRW 157 trillion of public funds into financial institutions through capital subscriptions, purchase of bad debts and payments of deposits of failed financial institutions. The public funds were mainly raised by issuance of Deposit Insurance Fund Bonds and Non-performing Assets Resolution Fund Bonds, whose repayment was guaranteed by the government. The government also extended interest-free loans to the Deposit Insurance Corporation and the Assets Management Corporation for interest payments on the bonds.

Table 1

Scale of public funds injected and loans for interest payments

In trillions of won

	1998	1999	2000	2001	2002 (Jan-Sept)	Total
Scale of public funds injected	55.6	35.5	37.1	27.1	1.7	157.0
Scale of government lending for interest payments	1.3	4.0	5.6	6.0	7.3	24.2

Source: Ministry of Finance and Economy.

Building a social safety net

Owing to the chain bankruptcies of firms and corporate restructuring, the unemployment rate soared to a record high level. The Korean government expanded public assistance by creating temporary jobs. It also extended the scope of social insurance to include additional beneficiaries and increased the amount of benefit available.

As compulsory membership of unemployment insurance was extended to cover workers in small corporations, and farmers and the urban self-employed were given subsidies representing some part of the contributions to encourage them to join the National Pension Scheme, the number of beneficiaries of social insurance was increased substantially. In order to stabilise the livelihood of low-income families, the scale of benefit was increased and the range of beneficiaries was also broadened. Accordingly, the related budget allocation increased by 32% per annum during 1998-2001. The government’s subsidies for medical insurance covered 40% of losses by regional health insurance authorities. Along with strengthening of the social safety network, the budget for health and social security was markedly increased. The share of the budget allocation in the general account rose from 6.2% in 1997 to 10.8% in 2001 and its ratio to GDP rose from 0.9% to 2.0% during the same period.

Table 2
Number of persons receiving social insurance payments
 Year-end, in millions

	1997	1998	1999	2000	2001
Unemployment	4.3	5.3	6.1	6.7	6.9
National pension	7.4	6.6	10.7	11.8	11.8
Industrial accident	8.2	7.6	7.4	9.5	10.6

Source: Ministry of Health and Welfare.

Deficit spending to counter the recession

Immediately after the currency crisis, the IMF demanded the build-up of adequate foreign reserves, stabilisation of the exchange rate, and retrenchment in financial and fiscal management. The Korean government slashed expenditure by KRW 7 trillion, which represented 10% of the original budget.

As expectations concerning economic growth worsened and the number of unemployed increased markedly, however, the government issued a revised budget whose deficit was increased to 5% of GDP in 1998 in order to cope with the surge in unemployment, support small- and medium-sized enterprises, and increase social overhead capital investment. The government continued its expansionary fiscal stance in 1999 with a fiscal deficit of 2.7% of GDP.

Fiscal conditions after the currency crisis

Consolidated expenditure

Consolidated expenditure in 2001 was KRW 136.8 trillion, which was 1.6 times the 1996 figure. Its ratio to GDP rose from 20.2% to 25.1% during the same period.

Table 3
Size of consolidated expenditures
 In trillions of won and percentages

	1995	1996	1997	1998	1999	2000	2001
Scale of expenditure	71.6	84.4	100.3	115.4	121.0	129.2	136.8
Ratio to GDP	19.0	20.2	22.1	26.0	25.1	24.8	25.1

Source: Ministry of Finance and Economy.

Consolidated fiscal balance

After the currency crisis, the business cycle moved through a deep recession, a recovery phase and a renewed downturn. Reflecting this, the consolidated fiscal balance showed a similar pattern of an expanded deficit (in 1998), a reduced deficit (1999) and a shift into surplus (2000) due to the increased levels of tax revenues and contributions from social security funds that accompanied economic recovery. However, the fiscal deficit, after excluding the surplus of social security funds, represents 1.5% of GDP, which exceeds the ratio in 1996 by half a percentage point.

Table 4

Consolidated central government budget

In trillions of won and percentages

	1996	1997	1998	1999	2000	2001	2002 Jan-June
Real GDP growth rate	6.8	5.0	-6.7	10.9	9.3	3.0	6.1
Consolidated fiscal balance (A)	1.1	-7.0	-18.8	-13.1	6.5	7.3	16.1
(Ratio to nominal GDP)	0.3	-1.5	-4.2	-2.7	1.3	1.3	-
Social security funds balance (B)	5.3	5.9	6.1	7.4	12.5	15.5	9.4
Excluding social security funds (A/B)	-4.2	-2.9	-24.9	-20.5	-6.0	-8.2	6.7
(Ratio to nominal GDP)	-1.0	-2.8	-5.6	-4.2	-1.1	-1.5	-

Sources: Ministry of Finance and Economy; The Bank of Korea.

National debt

After the crisis, in order to finance the fiscal deficit and stabilise the exchange rate, the issuance of Treasury bonds and inducement of sovereign loans increased, resulting in a surge in the scale of national debt. The ratio of national debt to GDP rose from 11.9% at end-1996 to 22.4% at end-2001. Considering that net government lending also increased, fiscal soundness did not, however, deteriorate to as great an extent as may appear from the figures for the ratio of national debt to GDP.

On the other hand, contingent liabilities increased drastically after the government guaranteed the Deposit Insurance Fund Bonds and the Non-performing Asset Resolution Fund Bonds that were issued to raise the funds necessary for financial restructuring. Accordingly, the ratio of contingent liabilities to GDP rose from 1.8% at end-1996 to 19.6% at end-2001.

Table 5

Gross government debt and guarantees

In trillions of won at end-year and percentages

	1996	1997	1998	1999	2000	2001
Total debt	49.8	65.6	87.7	98.6	111.3	122.1
(Ratio to GDP)	11.9	14.5	19.7	20.4	21.4	22.4
Government guarantees	7.6	13.0	72.0	81.5	74.6	106.8
(Ratio to GDP)	1.8	2.9	16.2	16.9	14.3	19.6
Total debt plus government guarantees	57.4	78.6	159.7	180.1	185.9	228.9
(Ratio to GDP)	13.7	17.4	35.9	37.3	35.7	42.0

Source: Ministry of Finance and Economy.

Expenditure structure

As the share of fixed or mandatory expenditures, such as social security expenditures for guaranteeing a minimum livelihood and debt servicing expenses, increased, the share of the budget which the government could allocate at its discretion correspondingly shrank. Of the total budget

(in terms of general account and net lending), the share of such fixed expenditure² rose from 54.4% in 1997 to 59.3% in 2002. Correspondingly the scope for discretionary spending narrowed from 45.6% to 40.7% over the same period.

Table 6
Share of fixed expenditures
 In trillions of won and percentages

	1997	1998	1999	2000	2001	2002	Increase 1997-2002 in %
Fixed expenditures (A)	38.7	42.5	46.0	51.7	63.8	66.4	72
General account and net lending (B)	71.2	80.8	88.5	94.9	106.1	119.8	68
A/B	54.4	52.7	52.0	54.7	60.1	59.3	

Source: Ministry of Finance and Economy.

2. Evaluation of fiscal policy's stabilising role after the crisis

Before the crisis, the government adhered to its self-imposed principle of "expenditures within revenues". Therefore, there was little room for conducting fiscally based countercyclical stabilisation policies. Immediately after the crisis, the government implemented bold fiscal policies to curb unemployment and boost the economy, which resulted in the expansion of national debt. In order to prevent the consolidation of the trend of fiscal deficits, the government focused on fiscal soundness. Therefore it has come to rely more on control of the rate of budget disbursement to lean against the wind in smoothing the movement of the business cycle since 2000.

In conducting monetary policy, The Bank of Korea closely monitors the fiscal stance and position using various fiscal indicators such as the consolidated fiscal balance, the rate of increase of expenditures, the rate of budget disbursement, the fiscal impulse indicator and the structural fiscal balance.

The role of automatic fiscal stabilisers has been relatively small in that the scale of the public finance, representing 25% of GDP, was far below that of most OECD members. It has shown an increasing trend, reflecting the larger share of public finance and strengthened social safety net.

As for discretionary fiscal policy, the Korean government has been generally successful in smoothing the business cycle, ensuring stable economic growth. During the period 1997-99, an especially hard time for the Korean economy, the government aggressively boosted the depressed economy by fiscal pump priming. Since 2000, it has been placing more stress on fiscal soundness, the capacity for repayment of public funds and a balanced budget, while less stress has been put on the dynamic use of fiscal policy.

² Generally fixed expenditure means spending that is mandated by law or government commitment. In Korea, however, the defence budget and transfers to local governments are classed as non-discretionary spending because the tensions between South and North Korea make the defence budget very inflexible and transfers to local governments are stipulated by legislation.

Table 7

Decomposition of consolidated fiscal balance

	Fiscal balance (trillions of won)			D = A/GDP (%)	E = B/potential GDP (%)	F = D – E (%)	GDP gap (%)	Elasticity of fiscal balance to GDP	Fiscal stance
	Consolidated (A)	Structural (B)	Cyclical (C)						
1995	1.2	-2.4	3.6	0.33	-0.66	0.99	5.3	0.19	-0.69
1996	1.1	-3.4	4.5	0.26	-0.86	1.13	5.5	0.21	-0.20
1997	-7.0	-10.5	3.5	-1.54	-2.40	0.86	3.7	0.23	-1.53
1998	-18.8	-10.1	-8.7	-4.22	-2.05	-2.17	-9.5	0.23	0.35
1999	-13.1	-8.3	-4.8	-2.71	-1.66	-1.05	-3.9	0.27	0.39
2000	6.5	8.1	-1.6	1.25	1.55	-0.30	-0.8	0.36	3.20
2001	7.3	9.2	-1.9	1.34	1.66	-0.32	-1.4	0.23	0.12
2002e	12.9	13.7	-0.8	2.20	2.32	-0.12	-0.4	0.32	0.66

Source: Korea Institute of Public Finance.

3. Challenges to fiscal policy

Although Korea's ratio of national debt to GDP is relatively low compared to other OECD countries, more efforts need to be made to enhance fiscal soundness. This is because of the numerous factors acting to induce a deficit: government should absorb the loss of KRW 49 billion of public funds injected to clean up the financial sector; in the long run, the National Pension Fund is expected to slide into deficit; and the expenditures associated with Korean reunification will also escalate continually.

Even though the consolidated fiscal balance has recorded a surplus since 2000, the national debt/GDP ratio shows an increasing trend when we strip out the surplus from social security funds such as the National Pension Scheme. Accordingly, strong measures to augment fiscal soundness are called for, such as expenditure controls or reduction of tax exemptions. At the same time as maintaining fiscal soundness, the role of fiscal policy in stabilisation should also be strengthened, which requires the following institutional changes or improvements.

So far the stabilising role of fiscal policy has been constrained by the "expenditures within revenues" principle. A medium-term fiscal plan should be drawn up and followed to allow government to pursue stabilisation policy from a medium- and long-term perspective.

In order to heighten the transparency of fiscal policy and strengthen fiscal discipline, government should be made more accountable for achieving the objectives of fiscal policy, and the principles for the execution of fiscal policy.

Fiscal policy in Malaysia

V Vijayaledchumy¹

1. Background

In the 1970s, the Malaysian government played a key role in the economy. The government ventured beyond its traditional functions and took on a more direct and active role in the country's overall social and economic development process. This period saw the government's direct participation in the private sector through the establishment of large commercial enterprises. Government participation in the economy expanded further in 1980-82 as it pursued an expansionary countercyclical fiscal policy aimed at stimulating economic activity and sustaining growth to ride out the effects of the global recession. The countercyclical policy led to "twin deficits" in the government's fiscal position and the balance of payments. When confronted with this twin deficit problem, the government implemented comprehensive structural programmes to reduce spending and reordered national objectives consistent with domestic resource availability and to ensure prudence in its recourse to external borrowing.

The new direction in public policy also sought to promote the private sector as the main engine of growth for the economy. The most significant development was the reduction of the public sector's commercial activities, implemented through the privatisation programme. Subsequently, government intervention has been largely in support of private sector initiatives towards overall development of the country. The tax structure was also reformed to increase international competitiveness as well as promote national savings to meet future levels of growth and investment requirements.

The shift in emphasis towards private sector-driven growth contributed to a marked improvement in the government's financial position as well as a reduction in its borrowing requirements. As a strengthened fiscal position emerged in the late 1980s, the government was able to prepay its external debt, thereby improving the nation's external debt profile. It also culminated in fiscal surpluses for five years during 1993-97. With the consolidation of public activities, the share of public expenditure to GDP declined to 21% in 1997, from a peak of 44% in 1982. The total debt level of the federal government was substantially reduced to 32% of GDP by the end of 1997, from a peak of 103% in 1986. The external debt of the government was also low, at 4.6% of GDP or 7.6% of total external debt in 1997. The prudent policies adopted accorded the government greater flexibility in implementing expansionary measures to support growth during the crisis years.

2. Fiscal policy response to Asian financial crisis

During the early stages of the Asian financial crisis, the government tightened budgetary operations to bring about a reduction in the current account deficit of the balance of payments and to reduce inflationary pressures arising from the depreciation of the ringgit. As the regional economic crisis continued into 1998, fiscal policy turned expansionary to support economic activity. The fiscal measures included a selective increase in infrastructure spending, establishment of funds to support small and medium-sized enterprises, a higher allocation for social sector development and a reduction in taxes. Special funds were also established or expanded to provide credit to priority sectors at concessionary rates. The fiscal stimulus package was MYR 7 billion or 2.5% of GDP, of which MYR 1 billion was allocated for social safety net measures to mitigate the impact of the crisis on the poor. As a result of these measures, a fiscal deficit of 1.8% of GDP emerged after five years of surpluses.

¹ All views expressed in this paper are solely those of the author and do not necessarily reflect those of Bank Negara Malaysia.

As global economic uncertainties continued to persist, the 1999-2003 budgets maintained an expansionary stance, with the authorities conscious of the need to maintain debt sustainability. The countercyclical fiscal policy, implemented largely through discretionary measures, was effective in supporting economic recovery and sustaining domestic demand. In particular, when external demand contracted significantly in 2001, Malaysia was still able to record a positive growth rate. The effectiveness of fiscal policy was also supported by other strategies and policies that continue to build on Malaysia's strong economic fundamentals.

3. Analysis of fiscal accounts, 1998-2002

Malaysia keeps all policies under constant review, to respond to changing circumstances. During 1998-2002 monetary conditions also supported the expansion of private sector activities. Interest rates were cut to historically low levels in 1999, with the intervention rate reduced by 550 basis points. Following the events of 11 September 2001, it was cut by a further 50 basis points. In pursuing expansionary demand management policies, care was taken that fiscal and monetary measures would not unduly risk creating imbalances which might jeopardise the long-term growth potential, price stability or gains made in achieving a robust balance of payments. Given that the exchange rate is pegged, the government is fully committed to ensuring that the overall stance of macroeconomic policy is consistent with and supportive of the exchange rate regime to ensure its sustainability. In this regard, both fiscal and monetary policies have been carefully applied to support economic recovery, whilst preserving Malaysia's economic fundamentals.

In determining the size of the fiscal deficit, major considerations are:

- ensuring that revenue is able to meet operating expenditure and hence, that a surplus in the current account is maintained at all times;
- ensuring the availability of domestic and external financing without crowding out the private sector;
- ensuring that debt servicing does not exceed 20% of total operating expenditure.

Overall, to ensure that public debt remains at manageable levels, a legislated borrowing rule stipulates a ceiling for federal government debt.

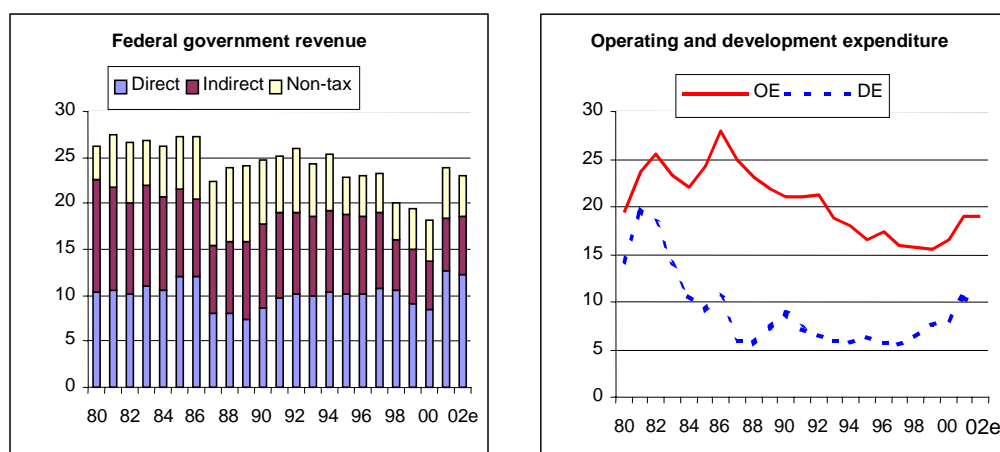
4. Impact of fiscal expansion

Size of the overall budget

Following the implementation of fiscal stimulus packages, government spending increased from an average of 22% of GDP in 1995-97 to 30% in 2001, or an average of nearly 25% of GDP during 1998-2001.

On the revenue side, receipts have remained robust, providing flexibility for increases in development expenditure without exceeding the size of the overall deficit. The improvement was due to an ongoing tax reform programme aimed at improving tax buoyancy and tax receipts as well as increases in petroleum-based revenue, arising from higher oil prices. Petroleum-based revenue accounts for about one fifth of total revenue. In 2001, revenue collected recovered to the pre-crisis level of 24% of GDP, having averaged only 19% of GDP during 1998-2000. Non-tax revenue (20% of total revenue) was relatively stable at about 4-5% of GDP during the crisis period. Consequently, the overall fiscal deficit has been contained at below 6% of GDP.

Graph 1

Federal government revenue and expenditure¹

¹ As a percentage of GDP.

Source: Ministry of Finance.

Nature of the fiscal deficit

To evaluate fiscal risks, it is important to determine the nature of the deficit. Estimates of derived cyclically neutral balance, based on a structural balance concept, indicated a deficit of less than 1% of GDP, compared to an average deficit of about 4% of GDP during 1998-2002. The fiscal stance adjusted for the cyclically neutral stance remained positive, indicating that the fiscal policy was adding stimulus to the economy. In estimating the cyclically neutral balance, 1995 was selected as the base year, as actual and potential GDP were at about the same levels. The fiscal stance indicated a policy deficit induced by the countercyclical measures taken by the government, and not induced by longer-term structural rigidities arising from either locked-in operating expenditure or a persistent decline in revenues due to inefficiency in collection or weak fundamentals. Hence, the impact of the measures on the fiscal balance is expected to be only transitory. As the fiscal stimulus largely comprised higher development expenditure, the capacity to move towards a surplus is greater when economic activities recover. Revenue growth during these years has also remained favourable, reflecting the strong underlying economic fundamentals.

Table 1

Fiscal accounts
As a percentage of GDP

	1997	1998	1999	2000	2001	2002e
Overall balance (budget definition)	2.4	-1.8	-3.3	-5.8	-5.5	-4.7
Primary balance	4.6	0.7	-0.5	-3.1	-2.6	-2.0
Cyclically neutral balance (base year 1995)	0.7	-1.9	-0.7	0.2	-0.4	-0.1
Fiscal stance	-1.7	-0.1	2.4	6.0	5.1	4.6
Fiscal impulse	-2.0	1.6	2.5	3.6	-0.9	-0.4
<i>Revenue</i>	-0.4	3.3	0.5	1.4	-5.7	0.3
<i>Expenditure</i>	-1.6	-1.7	2.0	2.1	4.8	-0.7

The fiscal impulse, which measures the changes in fiscal stance, was positive during the years 1998-2000. A negative fiscal impulse was registered in 2001. In that year, two additional fiscal stimulus packages, of MYR 3 billion in March and MYR 4.3 billion in September, were introduced to minimise the impact of adverse external developments on the domestic economy. The second package was focused on smaller projects which could be implemented immediately. While the increased government expenditure provided a cushion from the impact of the global economic slowdown, the stronger revenue outturn reduced the fiscal stimulus.

More importantly, the fiscal expansion has not created structural imbalances in the economy. Government spending has not resulted in higher inflation due to the excess capacity in the economy. Similarly, government spending has not resulted in leakages and put a strain on the balance of payments as most of the expenditure was on projects with minimal import content. Thus, no stress was imposed on the current account of the balance of payments. Expenditure was carefully managed to strengthen domestic demand. Projects selected under the fiscal stimulus programmes were those with strong linkages to the economy, while meeting socio-economic objectives. About 27% of the expenditure was on education and training, which not only stimulated economic growth in the near term but also help enhance the long-term objective of raising productivity.

Table 2
Selected economic indicators

	1997	2000	2001	2002e
Monetary growth M3 (% growth)	18.5	5.0	2.9	6.2
CPI (% growth)	2.7	1.6	1.4	2.1
Current account balance (% of GDP)	-5.9	9.4	8.3	6.5
Domestic private investment (% of GDP)	31.8	12.8	10.3	13.2
Debt service charges of the Federal Government (% of GDP)	2.3	2.7	2.8	2.7

The high savings rate and excess liquidity in the system made it possible for the bulk of the fiscal deficit to be financed through non-inflationary domestic sources in the form of Malaysian government securities. The large issuance of these securities was subscribed mainly by provident, pension and insurance funds. As there was sufficient liquidity in the banking system to meet the private sector's financing needs, the government requirements did not result in any crowding-out effects.

At the same time, it also reflected that the government has never resorted to monetary financing of the deficit that would lead to money creation.² Given adequate domestic resources, financing from abroad continued to be an option, determined mainly by cost factors and the need to establish a market presence and provide a benchmark for the corporate sector.

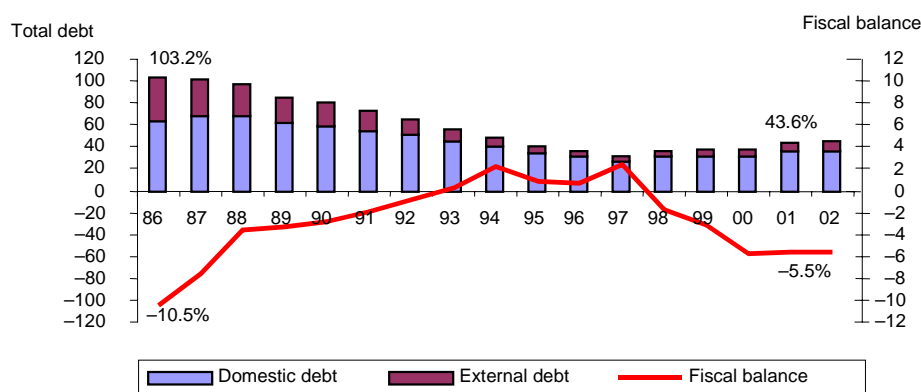
Debt sustainability

The government has remained committed to the adherence to specific rules related to the fiscal balance (maintaining an operating surplus and other fiscal rules over a longer time horizon which are predetermined in the five-year development plans). This commitment, together with strong underlying fundamentals, has enabled the government to contain debt at a manageable level. The deficit has been kept below 6% of GDP and the total federal government debt below 50% of GDP. Debt servicing remains low, at 14.6% of operating expenditure (11.6% of total revenue or 2.7% of GDP) in 2002, and

² There are legal limitations as to the amount and duration of loans that the central bank can make available to the government. The Central Bank Act of 1958 stipulates that the advance should not exceed 12.5% of the budget revenue of the government and must be repaid as soon as possible, and not later than three months after the end of the financial year in which it is granted.

has not constrained fiscal flexibility. Furthermore, as the bulk of government borrowing has been from non-inflationary domestic sources (81% of total outstanding debt is in ringgit), the government's exposure to exchange rate risks has been kept low. Given that the bulk of the borrowings (76%) are raised at fixed interest rates, the exposure to interest rate changes is also low. In addition, about 60% of the debt has a maturity of more than three years and it is adequately spaced out to minimise risks from bunching.

Graph 2
Sustainable fiscal and debt levels¹



¹ As a percentage of GDP.

Source: Ministry of Finance.

Table 3
Federal government debt indicators

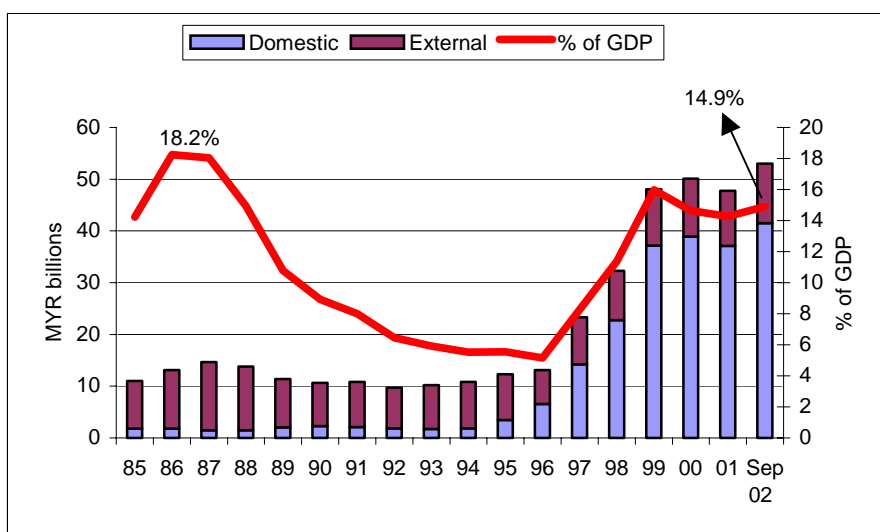
	Fiscal deficit	Domestic ¹	External ¹	Total debt ¹	Debt servicing	External debt servicing ratio
	(% of GDP)				(% of operating expenditure)	(%)
1997	2.4	27.3	4.6	31.9	14.4	0.7
1998	-1.8	31.1	5.3	36.4	15.5	1.0
1999	-3.2	31.1	6.1	37.3	17.0	0.7
2000	-5.8	31.2	5.5	36.7	16.0	1.2
2001	-5.5	36.3	7.3	43.6	15.1	0.5
2002 H1	-3.1	34.5	8.1	42.7	18.9	0.6

¹ Refers to end of period.

The government's drive to reinvigorate and strengthen the economy included financial and corporate restructuring exercises as well as issuance of bonds by Khazanah Malaysia, the federal government's investment arm, aimed at providing a benchmark for ringgit bonds. As a result, the guaranteed debt of the government increased from MYR 23 billion, or 8.3% of GDP, at end-1997 to MYR 48 billion, or 14.3% of GDP, as at 2001. This is not expected to have any adverse impact on fiscal sustainability. Most of the debt guaranteed was for companies that would be able to generate sufficient revenue to meet their obligations. Nevertheless, in an environment of external uncertainty, the government is strongly committed to monitoring potential new obligations very closely to contain the contingent liabilities and thereby minimise financial risks.

Graph 3

Guaranteed debt of the federal government



Source: Ministry of Finance.

During 2001-02, as part of the efforts to accelerate corporate restructuring and encourage private sector activities, the Malaysian government had been directly involved in the restructuring of a few large corporations of strategic and national interest via the Corporate Debt Restructuring Corporation, special purpose vehicles and the appointment of professional managers. This move, however, would not have a significant impact on the government's budget and debt level. Funding for the special purpose vehicles was largely through their issuance of bonds, a large part of which did not require government guarantees. The affected companies are undergoing both debt and operational restructuring to ensure their continued viability. Therefore, there is limited risk to the authorities of an increase in expenditure on these contingent liabilities.

Fiscal policy flexibility

Discussion on the fiscal flexibility of Malaysia has always centred on the unwritten fiscal rule of maintaining a surplus in the current account, the annual budget formulation process and the greater reliance on discretionary measures rather than built-in stabilisers to address cyclical developments. Such a stance has been considered to accord less fiscal flexibility in times of crisis. In this regard, Malaysia has always reiterated that the prudent stance of maintaining at least a surplus position in the current account over the course of the business cycle reduces the longer-term risks for the country. Malaysia is not convinced of the merits of introducing unemployment and social security benefits because such measures have proven to be costly in other countries. Moreover, the existing informal social safety net is considered adequate. The aim is to move towards a fiscal surplus over the medium term to provide more effective built-in stabilisers and allow the use of discretionary measures at appropriate times to protect employment and social cohesion.

In implementing the current fiscal stimulus programme, Malaysia did face implementation constraints initially. Hence, existing procedures were adjusted in order to enhance the efficiency of project implementation, speed up payments to contractors and remove bureaucratic delays. Besides a review

of procedures, rules and guidelines on the implementation of development projects, procurement and payment to contractors, the implementation of projects was also more closely monitored. The government is planning to move towards a broad-based consumption tax, although the timing will depend on economic conditions. Meanwhile, measures have been implemented to gradually widen the scope and coverage of sales and service taxes.

Recognising also the merits of moving towards multi-year planning in the budgeting process, beginning with the 2003 budget the budget preparation and examination process will be carried out once every two years instead of annually.

5. Conclusion

A strong commitment to fiscal sustainability is critical for macroeconomic stability as well as to ensure sustainable long-term growth. Malaysia continues to enjoy flexibility in expanding its fiscal position, which remains sustainable given the government's fiscal prudence and discipline. The impact of countercyclical measures on the fiscal deficit is expected to be transitory. The government, as part of the fiscal prudence policy, will closely monitor its spending. Over the medium term, its fiscal position will be consolidated as the economy recovers and is able to expand at its own momentum. The pace of consolidation will be guided by developments in external demand and domestic economic developments, with a focus on medium-term public debt sustainability considerations.

Implications of fiscal issues for central banks: Mexico's experience

José Sidaoui

1. Introduction

During the past decade there has been a widespread movement to grant independence to central banks.¹ In most cases, the movement has been accompanied by a sole mandate to pursue price stability (defined as the attainment of a low level of inflation) to guarantee the monetary authorities' firm commitment without being influenced by fiscal considerations. Nevertheless, the government's fiscal policies remain of concern even for price-stability-focused independent central banks for at least two reasons: fiscal dominance over monetary policy and the impact of fiscal policies on aggregate demand and supply.

Fiscal dominance occurs when the effectiveness and credibility of monetary policy are jeopardised by the size of fiscal imbalances (eg unsustainable expansionary policy or debt dynamics), an issue related to the public finance approach to inflation initiated by Phelps (1973). The risks associated with fiscal dominance have been addressed in both advanced and developing countries by adopting fiscal rules with the primary objective of conferring credibility on macroeconomic policies. A good example of these rules is included in the European Union's Stability and Growth Pact, which explicitly refers to the "objective of sound government finances as a means of strengthening the conditions for price stability and for strong sustainable growth conducive to employment creation".² Fiscal imbalances can translate into reserve losses, unstable exchange rates, balance of payments crises and higher inflation (Van Wijnbergen (1991)). In effect, this was Mexico's experience in the late 1970s and the early 1980s.

To assess the risks of fiscal dominance and the sustainability of fiscal accounts, and the dynamics of the public sector debt, the Banco de México (Mexico's central bank) closely follows the evolution of public finances. The broad definitions of the fiscal deficit (public sector borrowing requirement, PSBR) and of total public sector debt,^{3,4} together with estimations and stress tests of the public sector debt dynamics, are closely monitored to detect sustainability problems early.

Due to the constitutional mandate, in Mexico the oil and electricity industries belong to the state; thus, a significant amount of resources must be devoted to investment projects in these sectors. Hence, any analysis of the sustainability of public finances must take into account that oil and electricity investments will generate the cash flow needed to repay the associated debt some years after the initial expenditures are made. In addition, the state's control over these sectors gives the government a significant say over energy prices, changes in which can create supply side pressures on headline inflation.

Besides fiscal dominance, fiscal policy can pose considerable challenges to monetary policy through its impact on domestic demand, which may significantly affect the price level. In this context, indicators such as the public sector economic and primary balances are not enough to evaluate the fiscal stance. Consequently, the central bank uses indicators that only consider those items that have an impact on

¹ In 1994 the Mexican central bank was granted autonomy, having as a constitutional mandate to preserve the purchasing power of the country's currency.

² This was translated into a medium-term objective of budgetary positions close to balance or surplus, but allows normal cyclical fluctuations while keeping the government deficit within 3% of GDP and general government gross debt below 60% of GDP.

³ The total net debt includes the financial debt of the federal government and the state-owned enterprises, the liabilities of the Banking Institute for the Protection of Savings (IPAB), the off-budget investment projects (PIDIREGAS), the liabilities of the Public Fund for the Administration of Toll Roads (FARAC) and subtracts the assets of all these agents.

⁴ Measured as the public sector's revenues less expenses, excluding interest payments.

aggregate demand. Furthermore, measures of the fiscal impact are also calculated in order to analyse the discretionary behaviour of the fiscal authorities.

In Mexico's experience, the inflationary consequences of fiscal policies come from both the fiscal stimulus to aggregate demand and the previously mentioned government influence over energy prices (supply shock). The influence that government policies have on private domestic consumption and investment through the incentives embedded in the tax code and purchases of goods and services also need to be considered.

Increases in administered prices and indirect taxes should only have a once-and-for-all effect on the general price level (supply shocks). Nonetheless, second-round effects may appear if such rises contaminate inflation expectations. For this reason, the Banco de México routinely assesses the behaviour of prices of public sector goods and services and accordingly tightens its monetary policy when it deems it necessary to defuse such second-round effects. On the other hand, even though increases in administered prices or indirect taxes could have an adverse effect on inflation, they could improve public accounts. In this regard, the central bank has made clear the desirability of strengthening fiscal sustainability in the medium term, even if headline inflation rises temporarily above the target. Furthermore, having sound fiscal accounts would enable the central bank to pursue countercyclical monetary policies when needed.

This paper provides a brief description of the most relevant indicators that the Banco de México uses to evaluate the fiscal stance, which takes into consideration the increasingly important role of contingent liabilities.⁵ It also deals with the indicators used to measure the impact of fiscal policy on domestic demand. This information is useful for properly assessing fiscal sustainability and inflationary pressures in order to determine the appropriate stance of monetary policy to attain price stability. The second section evaluates the sustainability of fiscal accounts and public sector debt dynamics, including a stress test exercise. The third section presents the adjustments made to the public sector balance (economic deficit) in order to have a useful definition to evaluate fiscal policy effects on aggregate demand, called the expanded operational balance. The fiscal impulse of this measure is also presented in order to analyse some aspects of the discretionary stance of fiscal policy. Finally, some conclusions are offered.

2. Fiscal dominance

One channel through which fiscal policy may affect the price level, as mentioned in the introduction, is related to expectations about the sustainability of public finances. In this section, we present the measures used by the Banco de México to analyse the fiscal situation and describe the behaviour of the public balance and PSBR, together with an assessment of the performance of public debt indicators.

Public balance

The design of the Mexican tax system has been regarded as one of the most neutral and progressive among the OECD countries; see Dalsgaard (2000). However, in practice it has a low revenue raising capacity. While the average tax revenue for OECD countries for the 1997-2001 period was 38% of GDP, for Mexico it was only 18% of GDP.⁶

Another interesting issue is that oil-related income represents around one third of total government income. This fiscal dependence on oil revenues renders government finances vulnerable to changes in the international price of oil, since it affects financial planning as well as the continuity of public

⁵ In Mexico, fiscal contingent liabilities result mainly from the financial and debtor support programmes associated with the banking crisis of the mid-1990s and from off-budget energy sector investments.

⁶ This figure differs from the 10.7% that is usually reported in Mexico because the OECD methodology includes an estimation of social security contributions (3.0%), taxes on payroll and workforce (0.2%), taxes on property (0.2%) and duties (oil fees and others (3.2%)).

sector programmes. It is important to note that to achieve macroeconomic goals, and in particular fiscal targets, revenue shortfalls due to oil price falls have triggered government expenditure cuts. This reliance on oil revenues has been exacerbated by the lack of an adequate oil price stabilisation fund or a long-run hedging strategy.

Regarding public expenditures, the Mexican government needs funds to cope with the costs of the recent banking crisis and social security system reform, in addition to the resources needed for the provision of public goods (education, health, poverty alleviation and infrastructure) and to invest in electricity and oil projects.

In recent years the government has been able to attain low budget deficits (Table 1), especially when considering the significant estimated fiscal cost of the banking crisis (approximately 16% of GDP in NPV terms). This fiscal effort has involved a contraction in public expenditures, revenues raised from the privatisation of public enterprises and transitory increases in oil prices. It is important to recognise that these adjustments cannot be sustained in the long run. Therefore, the government has an increasing need to boost stable and reliable revenue sources in order to maintain healthy public finances and meet the provision of public goods.

Table 1
Public sector balance and PSBR
% of GDP

	1994	1995	1996	1997	1998	1999	2000	2001	2002
Economic balance	0.1	0.0	0.0	0.7	1.3	1.1	1.1	0.7	1.2
Primary balance	-2.1	-4.7	-4.3	-3.5	-1.7	-2.5	-2.6	-2.6	-1.8
PSBR	3.0	3.0	4.8	4.5	5.9	5.9	3.3	3.1	2.6

Overall, in spite of confronting a gradual structural weakening of the public finances, in recent years there has been a strong effort to improve the fiscal accounts. The behaviour of the fiscal authorities has reinforced fiscal management credibility by attaining a sustainable public sector debt path, thus allowing monetary policy to achieve price stability. This is confirmed by the fact that since the early 1990s, the primary balance has exceeded the amount required to maintain constant the debt/GDP ratio (using the previous-period total debt/GDP ratio, and either the current-year or long-term real interest rates and GDP growth (Table 2)).⁷

Public sector debt dynamics

In 1994, mainly in response to macroeconomic conditions, the composition of public debt was tilted to the short-term and exchange rate indexed instruments. Clearly, this strategy proved vulnerable to a change in perception of the government's ability to roll over its debt and maintain the fixed exchange rate. Thus, over the years the improvement of debt management has been a key element in achieving macroeconomic stability and strengthening public finances. In recent years, public debt management has pursued three main objectives: (a) a reduction of foreign debt; (b) the development of a yield curve for bonds issued in international and domestic markets, allowing for an increase in the duration of securities issued; and (c) the smoothing of the amortisation schedule of foreign debt.

⁷ See Buitier (1997). Primary balance needed to maintain the debt/GDP ratio constant: $(r-g)/(1+g)$ *domestic debt/GDP ratio + $(1+r^*)(1+e)/(1+g)$ *external debt/GDP ratio (where r is the real domestic interest rate, r^* the external interest rate, e real depreciation, and g real GDP growth).

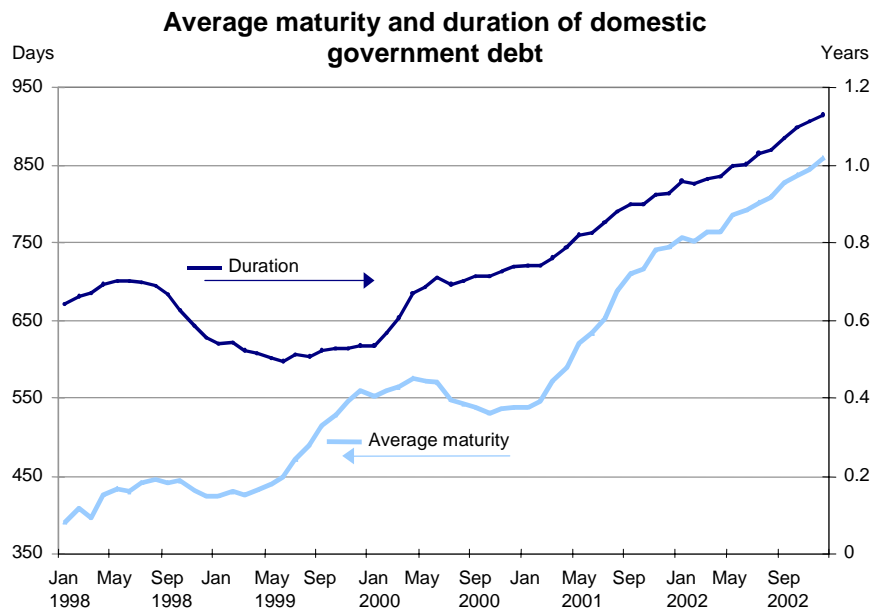
Table 2
Primary deficit¹
 % of GDP

	Actual	Required ² (long-term ³)	Required ² (current ⁴)
1990	-7.2	0.7	-0.7
1991	-4.8	1.3	-0.8
1992	-5.2	0.6	-0.7
1993	-3.3	-0.8	-0.5
1994	-2.1	-1.3	-0.4
1995	-4.7	-3.2	-0.7
1996	-4.3	5.6	-1.6
1997	-3.5	2.5	-1.2
1998	-1.7	-1.5	-1.1
1999	-2.5	1.4	-1.2
2000	-2.6	0.7	-1.1
2001	-2.6	-2.1	1.0
2002	-2.4	-2.6	-1.0

¹ Negative means surplus. ² Primary balance required so that the debt/GDP ratio of the next period remains constant. ³ Estimated using long-term interest rates and GDP growth. ⁴ Using the current level of such variables.

An important element of this strategy has been for the public sector to rely exclusively on the domestic market to finance the public sector deficit (excluding off-budget investment projects (PIDIREGAS; see footnote 8)). Additionally, the government has gradually improved the composition of domestic debt, depending less on indexed (inflation or exchange rate) and floating rate securities, and more on fixed rate long-term bonds, thus lengthening its average maturity (Graph 1).

Graph 1



Source: Bank of Mexico.

On the other hand, the management of foreign debt has focused on lengthening its maturity, reducing the rollover risks by avoiding a large concentration of maturities in a given year and reducing its costs through conducting significant buybacks of expensive securities such as Brady Bonds. This strategy has led to a significant contraction of public foreign debt, together with a relative increase in domestic public debt.

Nonetheless, the public sector's contingent liabilities have increased due to the fiscal cost of the resolution of the banking crisis and the development of PIDIREGAS⁸ as a mechanism to undertake electricity and oil related investment projects without having a direct impact on fiscal accounts. Therefore, Banco de México uses a broader measure of public sector debt that includes the aforementioned items, in order to assess its sustainability (Table 3).⁹

Table 3
Total net public sector debt
End-year, as a percentage of GDP

	1994	1995	1996	1997	1998	1999	2000	2001	2002
Net broad economic debt	32.3	37.0	27.6	22.1	24.5	21.9	20.7	20.1	22.8
Contingent items	1.2	5.1	9.3	13.7	14.2	17.5	16.6	16.5	17.4
IPAB ¹	1.2	5.1	8.4	10.5	9.8	11.7	10.3	10.7	10.4
FARAC ²	–	–	–	1.9	1.9	2.0	1.9	2.1	2.3
UDI ³ restructuring programmes	–	–	0.6	0.5	0.5	0.7	0.6	0.7	0.7
Direct PIDIREGAS	–	–	0.1	0.4	1.3	2.3	2.8	2.7	3.9
Debtor support programmes	–	0.0	0.2	0.5	0.6	0.9	0.5	0.3	0.1
Total net public sector debt (a + b)	33.5	42.1	36.8	35.8	38.7	39.4	36.9	36.6	40.2
Memorandum:									
Total gross public sector debt	65.1	65.6	56.0	58.4	59.5	65.2	58.4	53.7	57.9
Total public sector debt net of liquid assets	45.2	48.9	36.6	31.5	34.7	47.2	42.8	42.6	46.6

¹ Banking Institute for the Protection of Savings. ² Public Fund for the Administration of Toll Roads. ³ Off-budget public investment projects.

Stress tests on total public debt including contingent liabilities were performed to evaluate the vulnerability and soundness of the fiscal accounts. Several authors, including Blanchard (1990), Buitert (1997) and Talvi and Végh (2000), suggest similar methods to evaluate public finances' viability. Fiscal sustainability is defined by IMF (2002) as "whether a country's debt can be serviced without an unrealistically large future correction in the balance of income and expenditure".

⁸ PIDIREGAS are public sector investment projects directly undertaken by the private sector. This project-financing mechanism was developed to allow the government to undertake priority investment projects by contracting them out to the private sector, while deferring their registration as government expenditure in the budget. The private sector provides the financing during the construction and until the government acquires the assets. While the information on the stock of PIDIREGAS liabilities is publicly available, the public debt statistics do not consolidate this information with the external debt. Each year only the debt service for the following two years are consolidated with the public debt, while the remaining outstanding stock is classified as a contingent liability.

⁹ This measure does not take into consideration other obligations related to the pension system such as liabilities of IMSS and ISSSTE which for 1999 were estimated at 45% and 34% of GDP respectively; Santaella (2001).

The following analysis of the sustainability of public finances is based on the so-called stress tests (which are of a partial equilibrium nature). These provide a useful estimation of the impact on public debt coming from shocks to interest rates, GDP growth, and the primary balance. Additionally, a crisis scenario is considered including an interest rate shock and a significant real exchange rate depreciation. The different scenarios are as follows:

Baseline: 2.8% real depreciation for 2003 and zero for the rest of the estimation period; real GDP growth of 2.8% for 2003, 3.7% for 2004, 3.8% for 2005 and 4.1% until 2008; primary surplus of 2.3% of GDP for 2003 and 2% of GDP until 2008; real domestic interest rate of 3.6% for 2003, 5.1% for 2004 and 2005, and 5% for the rest of the period; and interest cost of external debt of 7.6% until 2008.¹⁰

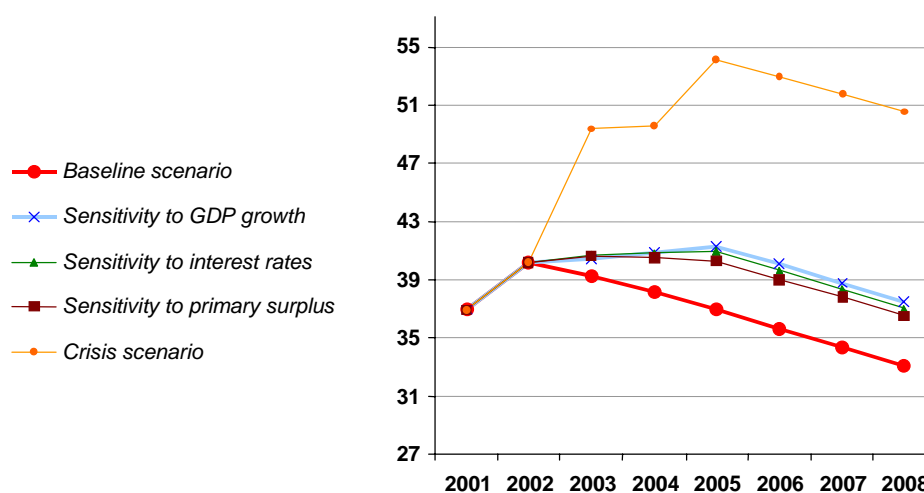
Sensitivity to GDP growth: No growth from 2003 to 2005, and 4.1% real growth the rest of the period.

Sensitivity to interest rates: Domestic real interest rate increases to 10% and the external rate to 8.2% from 2003 until 2005.

Sensitivity to primary balance: Reduction of the primary surplus to 1% of GDP from 2003 until 2005.

Crisis scenario: Real depreciation of 52% and 23% in 2003 and 2005 respectively, and real appreciation of 2% in 2004; no real exchange rate variation for the rest of the period; and a real domestic interest rate of 10% and an external rate of 8.2% for the period 2003-05, and the baseline scenario for 2006-08.

Graph 2
Stress tests on total public sector debt
% of GDP



The stress tests show that the public debt dynamics can endure significant adverse scenarios (Graph 2). However, it is important to indicate that the simulated adverse conditions for the different scenarios are only transitory, ie the macroeconomic scenarios assume that after the variables undergo the different shocks, they return to their expected values. Clearly, this allows the debt/GDP ratio to maintain a downward trend.

¹⁰ The baseline scenario for 2003 is based on Banco de México's February survey of economic expectations. For the following years it is consistent with the "macroeconomic scenario without structural reforms" presented in the National Programme for the Financing of Development (PRONAFIDE).

The most interesting results are:

- The highest debt level attained in the exercise is below 55% of GDP, and this would only occur in the crisis scenario that includes real exchange rate depreciations similar to those observed in Brazil during 1999-2001 (52%, -2% and 23%) and significant real interest rate increases (real domestic and external interest rates of 10% and 8.2%, respectively).
- Likewise, public debt would continuously increase, although moderately, until the year 2005 if there was no economic growth during the next three consecutive years, as occurred in Argentina (sensitivity to GDP growth).

Regarding these first two results, it should be noted that, clearly, the prevailing circumstances in Brazil and Argentina were different from those currently observed in Mexico.

- On the other hand, public debt will follow a downward trend even in a context of significant increases in interest rates. Even if the real domestic and the external interest rates were to reach the maximum levels registered in Mexico during the period 1995-2001 for three consecutive years, public debt would continue to fall as a percentage of GDP (sensitivity to interest rates).

3. Fiscal policy stance

Effects of fiscal policy on aggregate demand: the expanded operational balance

Even though the Ministry of Finance provides a wide range of information concerning different elements of fiscal policy, it does not fully depict its impact on aggregate demand. As is well known, information about the behaviour of fiscal policy is essential for the determination of monetary policy; see Taylor (1995). An accurate measure of the fiscal position's effects on internal demand is of utmost importance for the central bank, because of its impact on the price level. All transactions by the government with such an impact should be included in the indicator, regardless of whether they were part of a deliberate policy or not. This is because both types of actions, intentional or not, affect internal demand and thus may affect the price level.

In order to evaluate the effect of the public sector's decisions on aggregate demand, some adjustments are made to the standard measure of economic deficit. Those items of public revenue related to financial operations (eg banking deposits of state-owned institutions and debt buybacks) are subtracted, as well as those income items that are not collected from the domestic private sector; see Blejer and Cheasty (1991). The adjusted measure is called expanded operational balance (EOB).¹¹

This section briefly describes the adjustments that traditional Mexican fiscal accounts need in order to adequately assess the stance of fiscal policy and its relationship with aggregate demand. In particular, on the expenditure side the items included are:

- Domestic purchases of goods and services. The EOB should include those undertaken by the federal government, by the state-owned enterprises (including off-budget sector), and the sub-national governments' expenses tagged to federal revenue-sharing programmes.
- Personal transfers (which constitute a source of income to private agents).
- Total investment in buildings, domestic equipment and machinery, including off-budget investment projects (PIDIREGAS).
- The real component of domestic interest payments, including transfers to the deposit insurance fund (IPAB) and debtor relief programmes (ADE).¹²

¹¹ The operational balance is defined as the primary surplus minus real interest payments.

¹² This is obtained by subtracting the inflationary adjustment of the principal from nominal interest payments.

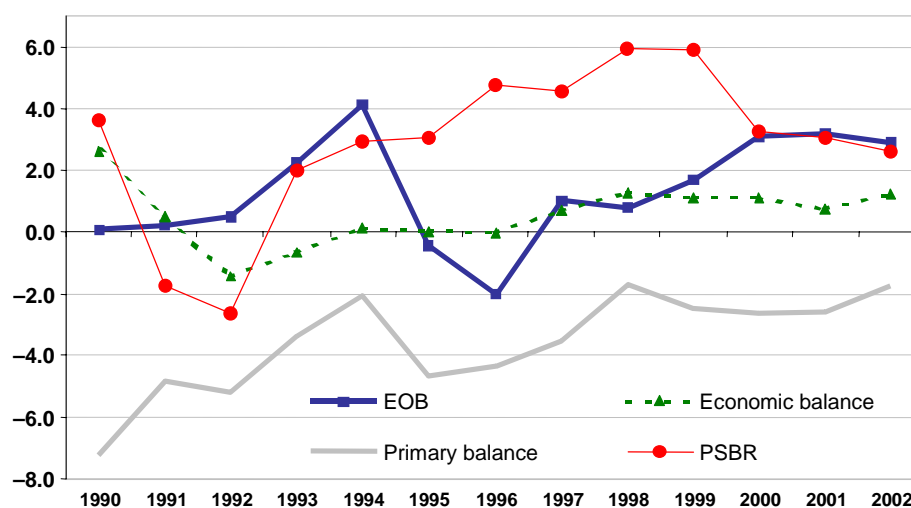
On the revenue side the following should be included:

- taxes;
- non-oil duties;
- social security contributions;
- federal domestic sales of goods and services (including off-budget sector).

Finally, the financial intermediation of development banks and public trust funds is also included because credit granted by these institutions may not reflect market conditions and is destined for sectors that would only have access to credits at very high rates or not at all.

The EOB is an indicator designed to register only those components of public finances that may have an impact on aggregate demand. Nevertheless, the economic deficit and primary surplus that the Ministry of Finance has traditionally published originally pursued a similar end. Thus, in what follows, the three concepts will be compared. In general, the behaviour of the EOB differs from that of the other two concepts. The PSBR, a broader measure of the public balance, is also included, although it does not have the specific purpose of evaluating the impact of fiscal policy on aggregate demand (Graph 3).

Graph 3
Indicators of fiscal policy stance¹
% of GDP



¹ A positive number represents a deficit, a negative number a surplus.

Sources: Ministry of Finance; Banco de México.

To compare the usefulness of the suggested fiscal definitions, a VAR is used to measure the effect that each fiscal policy component has on GDP. Thus, the VAR includes GDP and public revenues, expenses and the fiscal balance for each of the definitions presented.¹³ Estimating separately the effect on GDP of revenues and expenses, in addition to the fiscal balance, allows their distinct effect on aggregate demand to be captured. The real exchange rate (EXRATE) is also included in order to control for other elements that influence GDP.

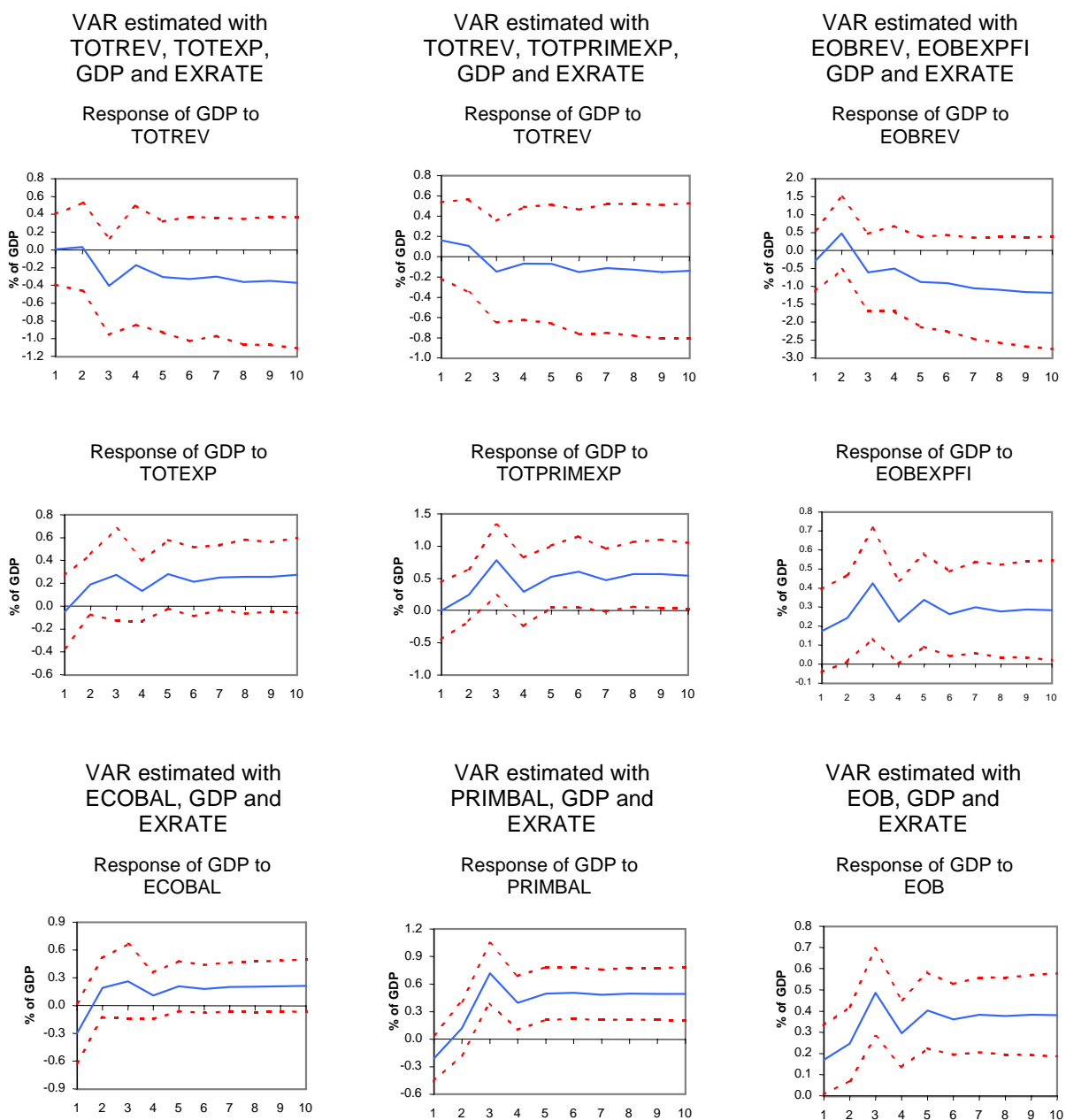
Three specifications were estimated using different concepts of public revenues and expenditures according to the different measures: (i) from the economic balance, total public expenditures (budget and off-budget) (TOTEXP), total public revenues (TOTREV) and the economic balance (ECOBAL); (ii) from the primary balance, public expenditures (TOTPRIMEXP), total public revenues (TOTREV)

¹³ This analysis is not possible for the PSBR because quarterly data are only available from 2000.

and the primary balance (PRIMBAL); and (iii) from the EOB, the modified public revenues (EOBREV), expenditures with financial intermediation (EOBEXPFI) and the expanded operational balance (EOB). Quarterly data expressed in real terms from 1990 to 2002 were used. Furthermore, the variables were in levels since cointegration could not be rejected (Annex D).

Graph 4 shows three columns of impulse response functions of GDP. Each column is associated with one of the fiscal measures considered. The response of GDP to a 1 percentage point increase in the variables associated with the economic balance is insignificant. Such functions are shown in the first column and correspond to the economic balance (ECOBAL), expenditures (TOTEXP) and revenues (TOTREV). This suggests that this concept is not the right definition to measure the effect of fiscal policy on the economy.

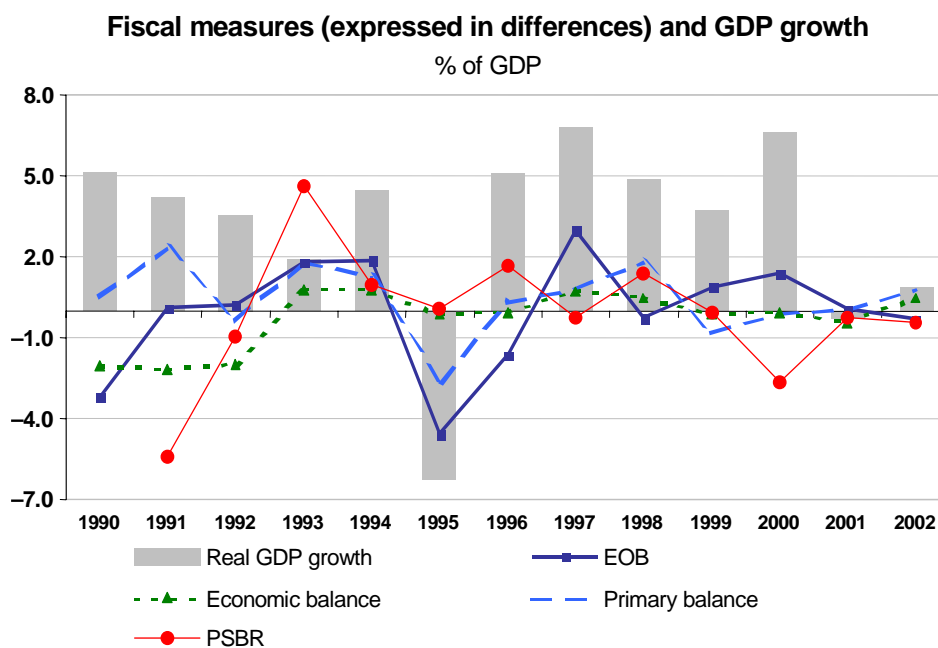
Graph 4
Impulse response functions



In the lower section of the second column, the response of GDP to the primary balance (PRIMBAL) is significant and positive starting from the third quarter. Something similar occurs with its expenditure measure (TOTPRIMEXP), except that this one is insignificant in the fourth period. This result shows an improvement with respect to the economic balance. Finally, the response of GDP to a shock to EOB and its expenditures (EOBEXP) is positive and significant, for the first variable starting from the first period, and for the second beginning in the second quarter after the shock.

Although from the revenue side the response of the three measures is negative and insignificant, at a 10% confidence level the GDP response to a shock to EOB revenues (EOREV) is significant after four quarters. The behaviour of the balance measure for the three fiscal definitions (ECOBAL, PRIMBAL and EOB) is very closely related to the expenditure variable associated with each indicator. This may indicate that the expenditure side is responsible for most of the impact on GDP caused by the impulses in the balance variables. This is supported by the insignificant responses of GDP to the revenue variables (at conventional levels).

Graph 5



Sources: Ministry of Finance; Banco de México.

Fiscal impulse refers to the change in the fiscal balance, and it is seen as a measure of the impact of fiscal policy on aggregate demand. This concept is traditionally related to the structural fiscal balance, which excludes the effect of the business cycle and provides an estimate of discretionary fiscal policy (see the following subsection). Nonetheless, as an illustrative exercise, the change in the different measures of the fiscal balance (economic, primary, PSBR and EOB) and GDP growth are presented in Graph 5, where a procyclical fiscal policy is detected, especially with the EOB. This argument is reinforced when considering the correlation between GDP growth and the fiscal impulse, measured by the different definitions of fiscal balance (Table 4). This contrasts with fiscal policy in OECD countries, which is normally characterised as countercyclical, in accordance with theoretical propositions.¹⁴ However, to conclude that fiscal policy in Mexico has been procyclical, the effect of the business cycle on the fiscal accounts has to be considered.

¹⁴ Keynesian as well as business cycle models, although for different reasons, usually indicate that fiscal policy should be countercyclical; see Madero and Ramos-Francia (2000).

Table 4

Correlation coefficient between real GDP growth and measure of fiscal impulse

	EOB	Economic balance	Primary economic balance	PSBR
1980-2002	0.62	0.11	0.62	...
1980-1990	0.57	0.15	0.71	...
1990-2002	0.57	-0.06	0.57	-0.14

Fiscal impulse

Discretionary fiscal policy is the deliberate attempt by the government to adjust the fiscal position. The fiscal impulse indicators evaluate this type of variation of the fiscal balance; see Chand (1993). It is important for the central bank to be aware of the intended adjustments of the fiscal authority.

Measuring the adjustment in the public balance due to the deliberate intervention of the government requires distinguishing between the cyclically adjusted and the actual balance. Public expenditures and revenues have country-specific cyclical components. Therefore, when economic activity is contracting, a deterioration of the fiscal accounts may occur for reasons other than a fiscal impulse, like the presence of automatic stabilisers. These are expenditure and taxation items already built in to stimulate economic activity during recessions and to temper it in periods of economic overheating. For developed countries, one of the most important stabilisers is unemployment compensation. When economic activity slows down, the expenditure on unemployment insurance increases, stimulating the economy. On the contrary, when economic activity is above potential, such unemployment insurance expenditure decreases.

In Mexico there is no unemployment insurance and the government has no other established mechanisms to offset recessions by increasing expenditures. Furthermore, Mexican law establishes that all state-owned enterprises might spend all extra income received during the same fiscal year, when approved by the Ministry of Finance, which is contrary to the recommended countercyclical policy.¹⁵

To accurately measure the fiscal impulse of discretionary policies, it is necessary to take into consideration the business cycle. In this section, three different methodologies of fiscal impulse are tested for the Mexican economy: the IMF, the OECD and the Dutch versions, all described in Annex A. For this exercise the EOB is used as the definition of fiscal balance. Potential GDP was calculated using a Hodrick-Prescott filter described in Annex B. For the IMF formula, 1997 was defined as the base year because GDP was close to its potential and public finances were nearly in balance. Finally, for the OECD methodology, income elasticities of fiscal revenues and expenditures were estimated following the methodology presented in Annex C. However, only fiscal revenues were adjusted, because in the absence of automatic expenditure stabilisers, as is the case in Mexico, the income elasticity of public expenditures mainly reflects the authorities' discretionary changes and not cyclical components.

The results obtained with the three methodologies are very similar (Table 5 and Graph 6). This occurs because the same fiscal data and output gap are used. Thus, the three definitions point to the same direction of the fiscal authority's discretionary action: a positive sign shows a fiscal impulse on aggregate demand whereas a negative one shows a restrictive fiscal policy.

¹⁵ The fiscal system contemplates the existence of an oil stabilisation fund that is intended to reduce the volatility of the oil revenues. When the oil price is high, part of the extra revenues is saved, and when it is low, resources are spent to compensate for the low revenues. However, oil revenues are not directly related to economic activity. This means that oil revenue stabilisers cannot play an important role in a countercyclical fiscal policy. Besides, the oil stabilisation fund operates over a limited portion of current revenues. It cannot limit expenditures during booms nor compensate for non-oil revenues in recessions.

Table 5

**Fiscal measures based on the expanded operational deficit
(including financial intermediation)**

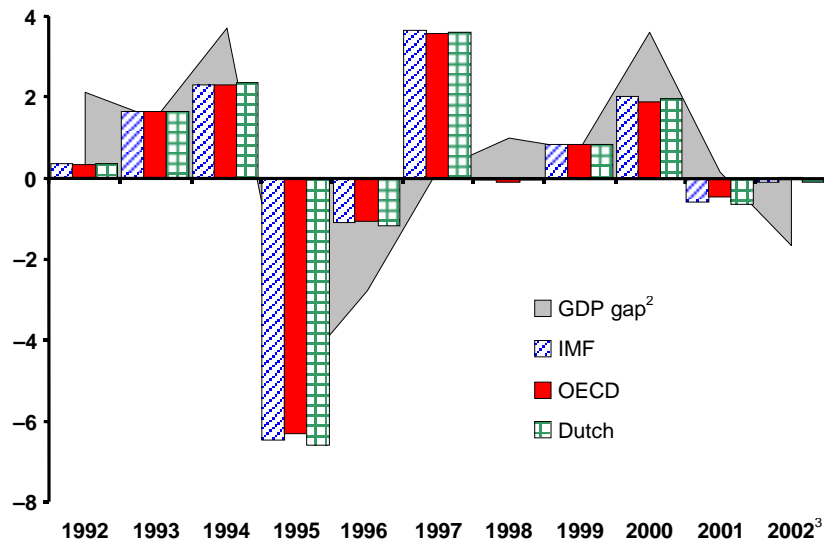
% of GDP

	Change in operational balance	Fiscal impulse			GDP gap ¹
		IMF	OECD	Dutch	
1991	0.2	0.3	0.3	0.3	1.7
1992	0.3	0.4	0.3	0.4	2.1
1993	1.8	1.7	1.7	1.7	1.5
1994	1.9	2.3	2.3	2.3	3.7
1995	-4.6	-6.4	-6.3	-6.6	-4.9
1996	-1.6	-1.1	-1.1	-1.2	-2.8
1997	3.0	3.7	3.5	3.6	0.2
1998	-0.2	0.0	-0.1	0.0	1.0
1999	0.9	0.8	0.8	0.8	0.7
2000	1.4	2.0	1.9	2.0	3.6
2001	0.1	-0.6	-0.4	-0.6	0.2
2002 ²	0.3	-0.1	0.0	-0.4	-1.7

¹ As a percentage of potential GDP. ² 2002 excludes the accounting adjustment associated with the liquidation of the National Bank of Rural Credit (Banrural).

Graph 6

Fiscal impulse¹ and output gap
% of GDP



¹ Fiscal impulse includes financial intermediation. ² As a proportion of potential GDP. ³ 2002 excludes the accounting adjustment associated with the liquidation of the National Bank of Rural Credit (Banrural).

The evidence of a procyclical fiscal policy remains after the fiscal measures are adjusted to eliminate the cyclical components derived from the business cycle. This behaviour of the fiscal authorities may be explained by the past nature of business cycles in Mexico. In this context, starting from the mid-1970s, and up to the mid-1990s, Mexico underwent recurrent balance of payments crises, which led to the contraction of public expenditures as part of the different economic stabilisation programmes. More recently, implementing a countercyclical policy has not been a policy option for the authorities, because of solvency risks faced by public finances and the need to improve their reputation for fiscal discipline.

In the past few years, the effort to maintain a credible macroeconomic framework has led to reductions in public expenditures, even during adverse situations such as lower international oil prices. This strategy of following a procyclical fiscal policy can be best understood in the context of an economy that is in the process of consolidating its fiscal accounts, and which still faces contingent liabilities not reflected in the broadest debt definition (primarily related to pension systems and other labour-related benefits). Therefore, priority has been given to the medium-term sustainability of the fiscal accounts and not to short-term cyclical considerations.

For the formulation of monetary policy it is important to be aware of the cyclical position of the economy as well as of the fiscal position that can be evaluated by the fiscal impulse. Deviations above potential growth may result in higher inflation; see Alesina et al (2001). When the economy is growing above its potential and the fiscal impulse is positive, it is more difficult for the monetary authority to reduce inflation. As an example, in 2000 when the Mexican economy grew 3.4 percentage points above potential and the fiscal impulse was 2% of GDP, monetary policy had to be tightened six times because of aggregate demand pressures (see the Banco de México's 2000 Annual Report).

4. Conclusions

Fiscal policy raises two major concerns for monetary authorities: (a) avoiding fiscal dominance, and (b) inflationary pressures from the effects of fiscal measures on aggregate demand and supply. The supply shocks from fiscal policy decisions are particularly important in Mexico, since the government controls the prices of several goods and services in the economy (mainly energy-related).

Evidence has been presented in this paper that supports the idea that fiscal policy in Mexico, over the last two decades, has been procyclical, in contrast with what is normally seen in OECD countries. Nevertheless, this behaviour may be explained by the recent nature of business cycles in Mexico. In this context, for two decades between the mid-1970s and the mid-1990s there had been recurrent balance of payments crises, which forced severe contractions of public expenditures as part of stabilisation programmes. Implementing countercyclical fiscal policies has not been an option yet, because of the need to improve the reputation of fiscal discipline and to reduce solvency risks.

Fiscal policy has been procyclical because the Mexican economy is in the process of consolidating its fiscal accounts. Therefore, priority has been given to the medium-term sustainability of the fiscal accounts and not to short-term cyclical considerations. Even though this need of adjustment could induce larger swings in economic cycles in the short run, it has helped to improve the public sector debt dynamics and sustainability, which in turn have created a favourable environment for the reduction of inflation and inflationary expectations. Although stress tests show that only in severely adverse scenarios would the public debt deteriorate over the medium term, approval of the pending structural reforms by the congress would allow the government to reduce its financing requirements and redirect public expenditures to projects with a higher social impact. This would contribute to the consolidation of the fiscal accounts, which in turn would allow for a less procyclical fiscal policy, creating an environment where monetary policy could more effectively attain its inflation targets and reduce output volatility.

In sum, once fiscal dominance has been avoided, fiscal policy should aim to (a) keep price increases of goods and services provided by the government consistent with inflation expectations, cost considerations and, when relevant, with international prices, and (b) maintain a low and manageable fiscal deficit that does not constitute an unsuitable stimulus to aggregate demand.

Annex A: Measures of fiscal impulse

1. The **IMF** defines the cycle-adjusted fiscal stance (FS) as follows:

$$FS_{FMI} = (G_t - \frac{G_0}{Y_0^P} Y_t^P) - (T_t - \frac{T_0}{Y_0^P} Y_t)$$

Thus, the IMF measure of fiscal impulse (FI) can be expressed as:

$$FI_{FMI} = \Delta FS_{FMI} = (\Delta G - \frac{G_0}{Y_0^P} \Delta Y^P) - (\Delta T - \frac{T_0}{Y_0^P} \Delta Y)$$

where:

- G_t is public expenditure in period t
- G_0 is public expenditure during the base year
- T_t is budgetary revenue in period t
- T_0 is budgetary revenue during the base year
- Y_t is GDP for the year
- Y_0 is GDP of the base year
- Y_t^P is potential output in period t
- Y_0^P is potential output during the base year

2. The **OECD** calculates cycle-adjusted public revenues and expenditures:

$$T_{ADJ} = (T - \eta_T \frac{T_{-1}}{Y_{-1}} (Y - Y^P))$$

$$G_{ADJ} = (G - \eta_G \frac{G_{-1}}{Y_{-1}} (Y - Y^P))$$

where:

- η_T is the income elasticity of taxes
- η_G is the income elasticity of expenditures
- G is public expenditure
- G_{-1} is public expenditure the previous period
- T is budgetary income
- T_{-1} is budgetary income the previous period
- Y is GDP
- Y^P is potential output
- G_{ADJ} is adjusted expenditures
- T_{ADJ} is adjusted budgetary income

Thus, the fiscal impulse (FI) is defined as the change in the cycle-adjusted balance.

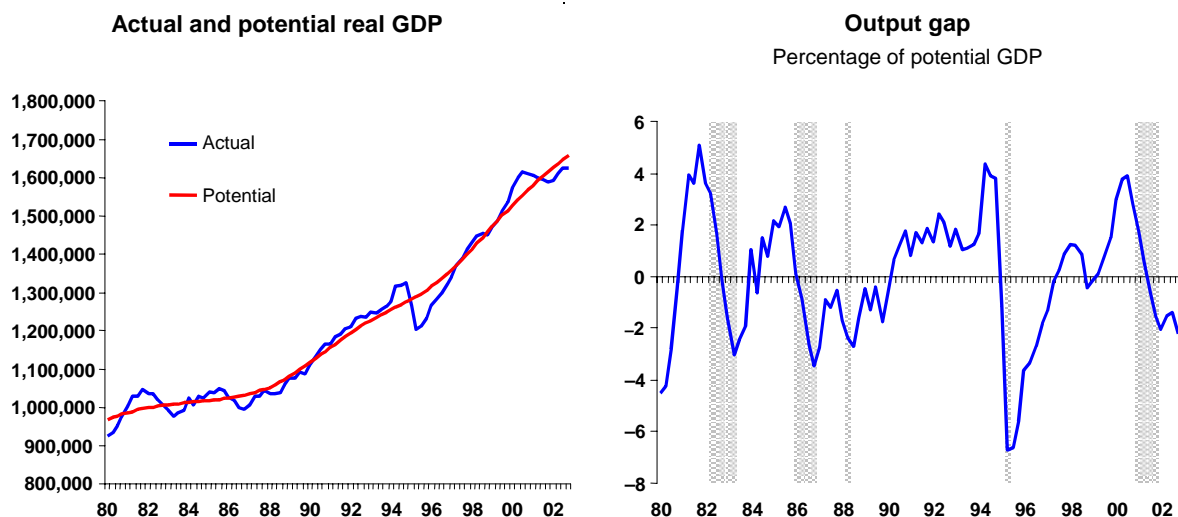
$$FI_{OECD} = \Delta G_{ADJ} - \Delta T_{ADJ}$$

3. The formula for the **Dutch** version of fiscal impulse (FI) is:

$$FI_{Dutch} = (\Delta G - \frac{\Delta Y^P}{Y_{-1}^P} G_{-1}) - (\Delta T - \frac{\Delta Y}{Y_{-1}} T_{-1})$$

Annex B: GDP cyclical adjustment

The trend GDP used to cyclically adjust the fiscal balance was estimated using a Hodrick-Prescott filter.¹⁶ As can be seen in the following figures, the output gap is consistent with the recessions of 1982-83, 1986-88, 1995 and 2000-02.¹⁷



¹⁶ The parameter lambda was set to a value of 1,600, as it is customary for quarterly data.

¹⁷ Recessions were defined as periods that start with two consecutive quarters of contraction and end with two consecutive quarters of expansion.

Annex C: Income elasticity of fiscal revenue and expenditure

The elasticity of fiscal balances with respect to GDP was estimated using the following simple econometric specification for annual data (1980-2001) on the different definitions of public sector revenues and expenditures.

$$\Delta \text{Log}(X_t) = C + \beta \Delta \text{Log}(\text{PIB}_t) + \varepsilon_t$$

Income elasticity	
Revenue	0.92
Adjusted revenue	1.05
Operational expenses	0.94
Expanded operational expenses	0.96

Annex D: Johansen cointegration tests

Johansen cointegration tests					
Variables	Null hypothesis	Eigenvalue	Statistic	Critical value 5%	Critical value 1%
TOTREV, TOTEXP, GDP, EXRATE	$r = 0^*$ $r = 1$	0.453 0.192	50.68 21.08	47.21 29.68	54.46 35.65
TOTREV, TOTPRIMEXP, GDP, EXRATE	$r = 0^{**}$ $r = 1$	0.547 0.244	64.24 25.44	47.21 29.68	54.46 35.65
EOBREV, EOBEXP, GDP, EXRATE	$r = 0^{**}$ $r = 1$	0.503 0.237	56.53 20.14	47.21 29.68	54.46 35.65
EOBREV, EOBEXPIF, GDP, EXRATE	$r = 0^{**}$ $r = 1$	0.671 0.283	80.57 22.78	47.21 29.68	54.46 35.65

r: number of cointegrating equations. ******: null hypothesis is rejected at 5% (1%).

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Fiscal issues and central banks in emerging markets: the case of Peru

Kurt Burneo Farfán¹

1. Background

Budgetary practices

Peru's main fiscal instrument is the public sector budget, which is approved by Congress. The budget covers most central government operations, but not health and social security institutions, local governments or state-owned enterprises. It sets limits for non-financial expenditure and both domestic and foreign public debt service. It also includes detailed projections of tax and non-tax revenues and domestic and foreign debt disbursements.

The fiscal year begins on 1 January. The budgetary process begins in May with the setting of the key macroeconomic assumptions for the following year: the real growth rate, inflation, the exchange rate and the level of exports and imports. The Ministry of Finance's forecasts of aggregate revenue are then used in the expenditure estimates prepared by each government department. The budget proposal, which has to be consistent with the fiscal stance expressed in the multiannual macroeconomic framework,² is passed to Congress by 30 August in order to be approved as a budget law no later than 30 November. Otherwise the executive authority will enact it by decree.

Congress cannot increase expenditure beyond the executive's proposal. Moreover, any provision for tax exemption or benefit must be commented on by the Ministry of Finance. Supplementary budgets follow the same procedures as the budget itself; any increase in spending or transfer of funds requires congressional approval.

A set of laws enacted by the Congress complement budgetary practices:

- the Law of Financial Equilibrium specifies the amount of the deficit to be financed within the year according to the maximum level of spending and estimated revenues;
- the Law of Borrowing fixes the maximum amount of borrowing from abroad and domestic sources;
- the Law of Budget Management sets the fundamental budgetary procedures to be followed by public sector entities.

Coverage of public sector statistics

The Central Reserve Bank of Peru (CRBP) compiles government financial statistics in accordance with the IMF's *Manual for Government Financial Statistics* published in 1986. It does so not merely to satisfy its legal duty of informing the public about the nation's finances, but because of the implications of public finances for the current and future state of the economy and inflation.

Graph 1 shows the structure of the Peruvian public sector employed in the CRBP's fiscal statistics. This institutional coverage includes both on-budget and off-budget operations of the central government, social security system, regional and local governments, state-owned enterprises; other

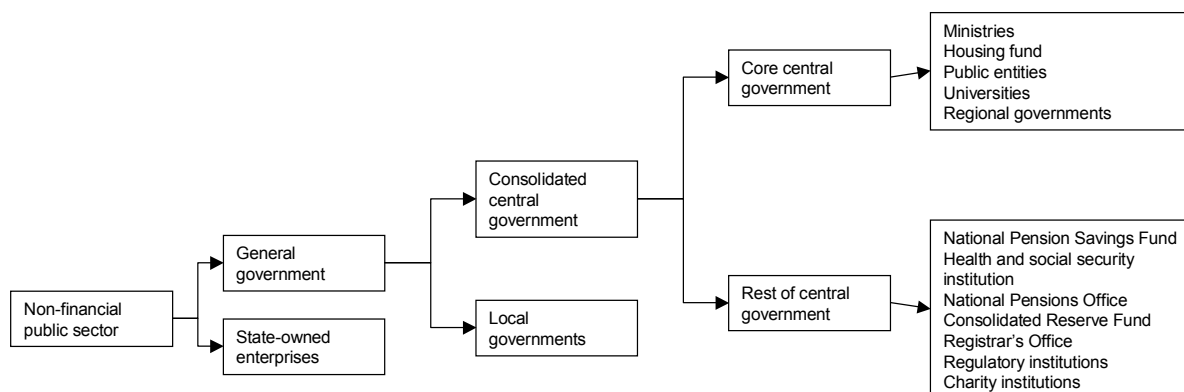
¹ Vice Minister of Finance and member of the Board of Directors of the Central Reserve Bank of Peru.

² The Law of Prudence and Fiscal Transparency requires that a multiannual macroeconomic framework containing fiscal and macro projections for the next three years be prepared by 30 April and presented to Congress by 30 August with the budget proposal.

public entities (eg universities, regulatory agencies and decentralised agencies), and public funds such as the Consolidated Pension Fund and National Savings Fund.

Graph 1

Non-financial public sector



In recent years a significant effort has been made to improve the government's financial management system. The "Integrated System of Financial Management", launched in 1999, centralised the budgetary and treasury operations of all spending units. As it covers all operations, it provides the Treasury with a continuously updated flow of information regarding the budgetary acquisitions, payments and balances of all units in the public sector, which facilitates the compilation, monitoring and analysis of public sector financial statistics.

Monetary policy framework

The Peruvian constitution, enacted in 1983, establishes two fundamental aspects of monetary policy:

- The CRBP's objective is to preserve monetary stability: to contribute to economic welfare through the elimination of inflation. International experience shows the impossibility of economic development in an inflationary environment. A general increase in the price level adversely affects productivity and imposes a burden on the poor through the inflation tax.
- The CRBP relies on the autonomy established in its charter. This autonomy is necessary to insulate monetary policy from political pressure to fund public expenditure or overheat the economy. International experience shows that countries with autonomous central banks have the lowest and most stable inflation rates.

In order to ensure its independence, the CRBP is legally prohibited from undertaking the following operations:

- Financing the public sector. The CRBP can only buy government securities in the secondary market up to 5% of the base money stock as at the end of the previous year.
- Providing guarantees to public or private financing operations.
- Granting selective credit. There is no development banking system in Peru. It was deactivated in the early 1990s following poor performance in the 1980s. During that time central bank credit to development banks was a major source of base money creation and contributed to higher inflation. However, in 2002 an agrarian bank was established with a small capital base.
- Operating a multiple exchange rate regime. Such a regime existed in Peru during the second half of the 1980s and was also a source of inflationary pressures.

This strong legal framework guarantees the CRBP's balance sheet independence. Therefore it is not engaged in any quasi-fiscal operations. When fiscal support was given to domestic commercial banks, only government funds were used.

During recent years, monetary policy was conducted by approving an operating target for the disposable volume of banks' liquidity, aimed at a predetermined base money growth. This growth was consistent with the inflation target established in the annual monetary programme, after considering the determinants of the demand for money. The base money growth rate was therefore considered an intermediate target between the operating target of banks' liquidity and the target inflation rate considered relevant to anchoring the inflation expectations of economic agents.

Since the early 1990s some central banks have adopted explicit inflation targeting, aimed at directly relating monetary policy decisions, based on an operating target, to the inflation outcome. To anchor inflationary expectations, these central banks announce an inflation target and employ an information strategy to communicate the policy actions to be adopted to achieve the target.

In January 2002, the CRBP's directors announced that monetary policy would be based on explicit inflation targeting (Box 1). Decisions on the monetary policy operating target are based on assessments of inflation determinants such as surveys of inflationary expectations, the growth rate of monetary aggregates, real GDP growth and fluctuations in the exchange rate. For example, if weak domestic demand pushes inflation below target, monetary policy will be expansionary, but if excessive aggregate expenditure growth compromises the inflation target, then monetary policy will be tightened. The target for annual inflation is 2.5% with a margin of ± 1 percentage point. This range is the target for 2003 and beyond, so it is also the medium-term goal of monetary policy in Peru.

Box 1

Main features of the new inflation targeting regime

- Announcement of an inflation target.
- Autonomy to implement an operating target, which is discretionally modified by the CRBP according to an integral analysis of the factors affecting the price level.
- Management of an operating target, according to the achievement of the inflation target and not of any other nominal variable, such as a monetary aggregate or the exchange rate. Hence this scheme is consistent with a floating exchange rate regime.
- Transparency on the objectives and monetary decisions of the central bank.

Since January 2003, the CRBP has been taking and releasing monthly its monetary policy decisions in terms of its interest rates for lending and borrowing with banks. These rates establish a reference corridor for interest rates in the interbank market.³ They are still related to the operating target (the average monthly balance of the accounts banks hold at the CRBP). In addition, the CRBP continues to release each month estimates of the banks' average daily disposable liquidity.

In order to achieve the banks' monthly ranges of liquidity, the CRBP relies on tools to inject or withdraw liquidity from the market. To inject liquidity, the CRBP temporarily repurchases its own certificates of deposit. It also grants monetary regulation credit and purchases foreign currency in the spot market. Conversely, the CRBP withdraws liquidity by auctioning certificates of deposit, taking overnight deposits and selling foreign currency in the spot market.

³ If the interbank rate is higher than the rate used for liquidity lending by the CRBP, then the higher one will continue to be applied. Thus, the provision of liquidity by the CRBP will not validate abrupt changes in short-term expectations.

2. Fiscal positions in emerging economies in the medium term

Measuring fiscal positions

The main fiscal indicator used by the CRBP is the overall balance of the non-financial public sector.⁴ For the economic programme and the targets published in the multiannual macroeconomic framework, the performance criteria are expressed in terms of this measure of the fiscal position.

The advantage of setting fiscal targets using this measure is its wide coverage, which eliminates the incentive to move expenditure among government units that is present when targets are set using a measure with narrow institutional coverage, such as central government. The main drawback is data availability. As statistics on the non-financial public sector are only available quarterly, the CRBP also looks at the monthly central government accounts. The CRBP also monitors fiscal actions on a daily basis through the Public Treasury Cash Flow. This statement comprise inflows and outflows of cash in the main accounts of the Treasury at its financial agent, Banco de la Nación. These accounts are important not only because a large proportion of fiscal operations are recorded in them, but because movements in these balances affect the level of deposits held by Banco de la Nación at the CRBP, thus directly affecting the creation of base money.

Assessing fiscal policy sustainability

The CRBP's assessment of fiscal policy sustainability focuses on the public debt/GDP ratio. The main difference between the CRBP's practice and standard assessments is the stress on the process of issuing new (marketable) public debt. As at end-2002 a significant share of the outstanding public debt was issued at very low (concessional) interest rates. Since the government will rely in the coming years on capital markets to finance deficits and amortise the current public debt, it will face a higher interest rate. The main implication is that in order to reduce the burden of interest payments and control pressure on the fiscal balance, a sustainable fiscal policy will have to reduce the debt/GDP ratio. Just keeping the ratio constant would require continuous adjustments in the primary balance, which is in itself inconsistent with the definition of a sustainable fiscal policy.

Constraints on provincial and local fiscal positions

Currently there are no hard fiscal rules on sub-national (local) governments. However, as part of the ongoing decentralisation process, provisions are being taken to avoid their excessive indebtedness. Newly elected regional governments took office in 2003, resulting in three tiers of government: national, regional and local. These new regional authorities will receive resources and perform duties previously assigned to central government units. According to the Decentralisation Law of July 2002, this transfer will be based on five principles:

- i. Clearly defined responsibilities for the national, regional and local levels of government to enhance accountability.
- ii. Transparency and predictability.
- iii. Neutrality, which means that no resources will be transferred to the regional government without the corresponding functional responsibility. This will reduce the scope for discretionary use of fiscal resources at the regional level.
- iv. The final decision on fiscal indebtedness is reserved for the national government. That means that regional and local governments can issue debt only with the guarantee of the central government.
- v. Fiscal responsibility: fiscal rules that limit the growth rate of regional and local government expenditure and debt will be drawn up and enacted. These rules should be consistent with

⁴ As defined in the IMF's *Manual for government financial statistics*.

the limits approved in the Fiscal Law. Moreover, the central government will be prohibited from assuming debts issued by regional and local governments.

These principles should help avoid pressures on the fiscal deficit arising from these new governmental entities.

As at end-2002, local governments were able to issue debt backed by their own resources without central government authorisation. Local government debt is currently insignificant (USD 40 million in December 2001) and has only involved credit from banks, principally the state-owned Banco de la Nación.

Enhanced market determination of interest rates and fiscal discipline

During 1975-90 Peru had increasing inflation. This unstable environment reduced the ability of the government to issue securities in financial markets. The main source of government financing was central bank credit and external debt, with further arrears on public external debt. During the 1990s fiscal operations were mainly financed from proceeds of privatisation and borrowing from multilateral agencies. There is therefore no developed market for government bonds. Recent issuance of domestic public debt started in 2001. The main objectives of public debt management strategy are to:

- Develop domestic capital markets. Government bond issues generate a yield curve that serves as a benchmark for other domestic bonds.
- Create an institutional framework. This is essential since the Treasury has no reputation as a bond issuer.
- Generate resources to service external debt. Although fiscal adjustment and privatisation constitute important mechanisms for meeting external debt repayments, in the medium term additional resources will be needed. Domestic financing also reduces the exchange rate risk.
- Manage short-term debt. The introduction of short-term liabilities (treasury bills) improve management of seasonal and other short-term fluctuations in the public finances.

It is very important to guarantee the domestic financing framework as an additional source of funds to avoid adverse effects from external shocks, as happened in the past. It is highly recommended to keep this domestic framework transparent and reliable. Prudent treasury management will contribute necessary financial support to fiscal policy in the long term.

As argued above, as the government will face market interest rates higher than those currently applicable to the public debt, there needs to be a gradual adjustment to the fiscal balance. The most recent revision of the multiannual macroeconomic framework proposes a decreasing path for the deficit from 2.3% of GDP in 2002 to 0.8% by 2005.

Effectiveness of fiscal rules

The Fiscal Law of December 1999 aimed at contributing to economic stability and growth by creating a sound fiscal framework for the medium-term. It restricts the fiscal deficit, limits the growth of non-financial expenditures of the general government and establishes a stabilisation fund intended to smooth income fluctuations associated with the business cycle. In election years, the Law imposes additional restrictions on both the public sector balance and general government non-financial expenditures.

In order to render fiscal management both transparent and reliable, the Law requires the publication of a three-year macroeconomic framework containing the fundamental principles of fiscal policy, as well as macroeconomic forecasts for variables such as income and fiscal expenditures, investment and public indebtedness. It also describes how the macroeconomic framework is to be approved and published so that the government's fiscal policy intentions will be clearly understood by economic agents.

Rules and exceptions

The quantitative rules are set out in Table 1. However, in cases of national emergency or international crises, the executive authority can request Congress to suspend any of them for one year. If there is

evidence of a decrease in output or the significant likelihood it may decrease in real terms in the following period, the fiscal deficit could be allowed to exceed 1% of GDP, but not more than 2%.

Table 1
Fiscal Law: quantitative limits¹

	2000		2001	
	Rule	Actual	Rule	Actual
Overall balance (as % of GDP)	2.0	3.2	1.5 ²	2.5
Real non-financial expenditure (maximum % change)	2.0	0.6	2.0	-5.0
For election years (Jan-Jul as % of annual total)				
Non-financial expenditures	60	58	60	56
Budget deficit	50	39	50	20

¹ In 2001 Congress enacted a law declaring that the quantitative limits of the Fiscal Law for 2001 and 2002 were not binding. ² 1% in following years.

Fiscal stabilisation fund

The fiscal stabilisation fund is constituted by the following resources:

- current revenues from ordinary sources exceeding the average of the last three years by 0.3% of GDP;
- 75% of privatisation revenues;
- 50% of net revenue from concessions.

However, accumulated savings must not exceed 3% of GDP and the excess will be applied to the Consolidated Provision Reserve Fund or a reduction of public debt.

The use of the resources of the fund is contingent on an expected decrease in ordinary revenues of more than 0.3% of GDP relative to the average of the last three years, adjusted by significant changes in tax policy.

However, the Annual Budget Law for 2002 reduced the amount of privatisation revenue directed to the fund to 10% and the Decentralisation Law made it permanent.

Transparency procedures

The multiannual macroeconomic framework includes a statement of fiscal policy principles, which contains the economic policy guidelines and long-run fiscal objectives. In addition, the framework presents the three-year targets for the fiscal deficit, as well as macroeconomic forecasts, fiscal revenues and expenditures, investment and public indebtedness. The CRBP issues a technical report, which includes an analysis of the consistency of the framework with the forecasts for the balance of payments and international reserves, and with monetary policy.

The Law establishes how the framework will be approved and published, as well as the performance reports, the responsibility fulfilment statement and the interpretation and prohibition procedures, designed to convey to the public the intentions of the government concerning fiscal matters.

Despite the deficit ceilings not being achieved in 2001-02, due to the adverse international shocks that affected the Peruvian economy, the limits on non-financial government expenditure growth were respected (Table 1). The Fiscal Law also succeeded in imposing a higher level of transparency on fiscal policymaking due to the periodic publication of the Multiannual Macroeconomic Framework, which enhanced communication between the public and the fiscal authorities.

3. Countercyclical policy: monetary policy, fiscal policy or both?

Risks in departing from the medium-term orientation of monetary and fiscal policies

The main role of the CRBP is to promote price stability. That goal is understood as avoiding both inflationary and deflationary pressures. For example, in 2001 inflation was -0.1% , indicating weak domestic demand. This was well below the $2.5 \pm 1\%$ target for 2002 and beyond. Accordingly, a more expansionary monetary policy was adopted in August 2001.

With respect to fiscal policy, the medium-term orientation was set in the multiannual macroeconomic framework published by the Ministry of Finance. That document suggests a decreasing path for the fiscal deficits which is consistent with the inflation target set by the CRBP and with a sustainable path for public debt.

Cyclically adjusted budget position

A simple measure of structural balance is used to assess discretionary changes in fiscal policies. The structural deficit is defined as the level of deficit that would prevail if the economy were on its long term growth trend. Changes in the structural balance are therefore a measure of discretionary changes in fiscal policy.

Estimating this measure requires calculation of the GDP trend and the responsiveness of each component of fiscal revenue and expenditure to changes in economic activity:

- Trend GDP is estimated using a production function approach. A Cobb-Douglas aggregate production function is estimated using long-term data on output, capital and labour inputs. Thus, a measure of total factor productivity is derived. Trend output is defined as the level of output consistent with the trend total factor productivity (estimated using a Hodrick-Prescott filter) given actual levels of capital stock and labour input.
- Revenue responsiveness to GDP is calculated as a weighted average of elasticities of tax and non-tax items with respect to GDP. The weights are the proportion of each item in general government revenues in 2000.
- Expenditure responsiveness to GDP was assumed to be zero as Peru has neither unemployment benefits nor other kinds of fiscal expenditure stabilisers such as agricultural or mining price stabilisation funds.
- Therefore, structural balances can be computed using the following expression:

$$sb = t \left(\frac{1}{1 + gap} \right)^\beta - g$$

where

sb = structural balance as a percentage of actual GDP

t = fiscal revenues as a percentage of actual GDP

g = fiscal expenditure as a percentage of actual GDP

β = tax elasticity with respect to GDP

gap = GDP gap as a percentage of trend GDP.

Clearly, when the GDP gap is zero the actual and structural balances are equal. A positive GDP gap corresponds to a structural balance lower than the actual fiscal balance, reflecting the positive impact on fiscal revenue of a high level of economic activity.

Using these assumptions, Table 2 shows the evolution of the estimated structural fiscal balance.

Table 2
Peru's structural budget balance¹

	1997	1998	1999	2000	2001
I. Primary balance	2.2	1.3	-0.8	-0.9	-0.1
II. Interest payments	-1.9	-2.0	-2.2	-2.3	-2.2
III. Overall balance (I + II)	0.3	-0.7	-3.0	-3.2	-2.3
IV. GDP gap	4.1	0.2	-1.7	-0.8	-2.9
V. Cyclical component of the deficit	0.8	0.0	-0.3	-0.1	-0.5
VI. Structural balance (III - V)	-0.5	-0.7	-2.7	-3.1	-1.8
VII. Fiscal impulse ²	-0.7	0.2	1.9	0.4	-1.3

¹ Consolidated public sector as a percentage of GDP. ² Measure of change in fiscal stance corresponding to change in structural balance.

Table 2 shows the importance of fiscal stabilisers. During 1991-2001 the absolute value of the cyclical component of the deficit averaged 0.5% of GDP, while the average fiscal balance was a deficit of 2.4% of GDP.

The last episode of significant fiscal expansion occurred in 1999, when the government reacted to the drop in domestic demand caused by external shocks (Russian and Brazilian crises) by expanding the coverage of tax exemptions and increasing non-financial expenditures. The fiscal expansion was financed using public sector deposits generated by previous privatisations. Thus, it was not necessary to issue new debt. This point is relevant as those deposits are no longer available, and given the previous discussion on debt dynamics the scope for an expansionary countercyclical fiscal policy is now reduced.

Relative weights given to monetary and fiscal countercyclical policies

The combination of flexible exchange rates and the liberalisation of the capital account usually reduces the power of fiscal policy. In addition, Peru's relatively high public debt limits the scope for a proactive countercyclical fiscal policy. A certain amount of macroeconomic stabilisation is possible by changing the composition of government expenditure. For example, a shift from imported military goods to domestically produced goods and services could raise effective demand. However, under current budgetary procedures the time needed for such shifts could be so long that they would not respond in time to disturbances affecting the economy. Therefore, most of the stabilising effects of fiscal policy should occur through the operation of built-in stabilisers (basically in the revenue side of the budget).

Accordingly, the responsibility of macroeconomic stabilisation will be mainly assumed by monetary policy. The new inflation targeting regime implies that the stance of monetary policy will be adjusted in response to shocks that may drive actual inflation above or below its target level. Typical demand shocks, associated with unexpected changes in private consumption or investment, would generate monetary responses aimed at reducing their likely impact on inflation. Thus, monetary policy would perform an important stabilising role.

Long-term interest rates

Long-term government bond yields are currently used as a benchmark. The government has been issuing bonds in the domestic market since 2001, as a way of developing the domestic capital market. However, this is a fledgling market given the short history of public domestic bonds.

As Peru is a small open economy, foreign currency interest rates are mainly determined by international rates plus a spread reflecting sovereign risk. Domestic currency interest rates are also affected by depreciation expectations. Thus, a sustainable fiscal policy would end up endogenously

with a lower interest rate rather than an unsustainable one. Interest rates have been market-determined since 1990.

Monetary and fiscal coordination

Monetary policy decisions are taken by the CRBP board in an autonomous way. However, since fiscal actions affect the current state of the economy and its likely evolution, forecasting inflation requires close coordination with the fiscal authorities. This is carried out at different levels:

- Treasury cash flow management. The CRBP's General Manager is a member of the Treasury Cash Flow Committee, which is responsible for setting the level of government expenditure according to the revenue projections each month. Daily information on treasury operations is very important for programming monetary operations at the central bank as it can affect the money market.
- Financial programming. Fiscal accounts are an important component of financial programming exercises at the CRBP. The projection of fiscal variables is made in close coordination with the Ministry of Finance. This allows the CRBP to incorporate them into its monetary programme, taking into account its effect on total currency and credit availability to the private sector, and the projections of the balance of payments and the accumulation of international reserves.

Table 3 shows the evolution of inflation, the ranges announced by the CRBP and a measure of the change in the fiscal policy stance since 1994. Both fiscal and monetary policy were consistent with the main goal of bringing inflation down to international levels. Moreover, when actual inflation showed a rising trend (for instance in 1996) the stance of fiscal policy was adjusted to dampen aggregate demand and help reduce inflationary pressures and current account deficits. When weak domestic demand drove inflation below the range, fiscal policy was relaxed to avoid deflation.

Table 3
Inflation and fiscal impulses

	Target range	Actual inflation	Fiscal impulse
1994	15.0-20.0	15.4	0.8
1995	9.0-11.0	10.2	0.8
1996	9.5-11.5	11.8	-2.8
1997	8.0-10.0	6.5	-0.7
1998	7.5-9.0	6.0	0.2
1999	5.0-6.0	3.7	1.9
2000	3.5-4.0	3.7	0.4
2001	2.5-3.5	-0.1	-1.3
2002	1.5-3.5	1.5	
2003	1.5-3.5		

4. Central bank balance sheets and fiscal policy-type operations

The importance of seigniorage

Table 4 shows the evolution of seigniorage, measured as the flow of base money expressed as a percentage of nominal GDP. The narrow definition of money was used to approximate the real

resources the public sector obtains from issuing money. Table 4 shows that this variable is small and is basically explained by the CRBP's foreign exchange market operations. Public sector operations are essentially movements in Treasury accounts with the CRBP. Its sign is usually negative, which means that fiscal operations have been financed mainly by non-inflationary issuance of (both internal and external) public debt.

Table 4
Seigniorage¹

	1995	1996	1997	1998	1999	2000	2001
Seigniorage	0.8	0.2	0.5	0.2	0.5	-0.2	0.2
Public sector operations	0.0	-0.3	-0.1	-0.3	-0.1	0.0	0.1
Foreign exchange operations	0.6	0.1	0.9	-0.6	0.5	0.1	0.2
Other	0.2	0.4	-0.3	1.1	0.1	-0.3	-0.1

¹ As a percentage of GDP.

Quasi-fiscal operations of the central bank

As mentioned in Section 1, the CRBP's operating framework guarantees balance sheet independence, which means that the central bank's resources are not employed in quasi-fiscal operations. This independence is necessary to allow the CRBP to accomplish its main goal of price stability.

Bank balance sheets and central bank resources

From the point of view of the CRBP, the decision to rescue a troubled financial institutions is a matter of fiscal policy design. Correspondingly, neither central bank resources nor guarantees have been devoted to this kind of programme. However, since 1998 the government has decided to help stressed financial institutions by buying part of their poorly performing assets. This operation has been financed through the issuance of Treasury bonds that are mainly held by the banking system. As at end-June 2002, the stock of such bonds was equivalent to USD 770 million, or 1.4% of GDP.

The tax-exempt status of the central bank in the Philippines

Amando M Tetangco Jr

1. Background

The BSP and its mandate

The Philippines' central bank, *Bangko Sentral ng Pilipinas* (BSP), was established by the New Central Bank Act of 1993 as part of the restructuring of the old Central Bank of the Philippines (CBP), which was originally established in 1949. The BSP was set up in response to substantial deficits in the CBP's operations prior to 1993 that were incurred in connection with certain quasi-fiscal activities conducted by the CBP consistent with the policies of the national government at the time. These activities included foreign exchange forward cover contracts and swaps entered into by the CBP with certain banks and government-owned and -controlled corporations; the CBP's assumption of the foreign exchange liabilities of some of these corporations and private sector companies during the Philippines' foreign exchange crisis in the 1980s; development banking and financing by the CBP; and the CBP's conduct of open market operations and incurrence of high interest expenses on its domestic securities issued in connection with such operations.

The New Central Bank Act mandates the BSP "to maintain price stability conducive to a balanced and sustainable growth of the economy". The Act empowers the BSP's Monetary Board to control the expansion or contraction in monetary aggregates for the attainment or maintenance of price stability.

In order to fulfil its mandate under the New Central Bank Act, the BSP was granted full policy instrument independence as well as increased fiscal and administrative autonomy from other sectors of the government. As such, the BSP no longer undertakes the quasi-fiscal activities described above. Moreover, pursuant to the Act, the BSP is not permitted to engage in development banking or financing. In addition, a procedure was laid down for the liquidation of the old central bank (Annex A). Most of the provisions adopted at the time of the BSP's creation remain in force, except for its tax-exempt status, which was granted for a limited period and expired in 1998. The merits of granting the BSP renewed tax-exempt status are the main subject of this paper.

Tax treatment of the central bank

The New Central Bank Act of 1993 exempted the BSP from tax for a period of five years to July 1998. From August 1998, the BSP started to pay national, provincial and city taxes, fees, charges and assessments to the government. The national taxes payable by the BSP consist of documentary stamp taxes, tax on rental income, capital gains tax, tax on underwriting commitments, and assumed tax on interest on bonds payable and foreign exchange contracts. The local taxes payable include real property tax, firearms licence fees, radio telecoms taxes and licences, vehicle registration, notarial and other fees.

Section 121 of the National Internal Revenue Code imposes a tax on gross receipts derived from sources within the Philippines by all banks and non-bank intermediaries. Gross receipts arising from interest, commissions and discounts from lending activities, which are of short-term maturity, are subject to a 5% tax. The Bureau of Internal Revenue believes that this tax is applicable to gross receipts from interest income earned by the BSP from its lending activities (including repurchase agreements, rediscounting and liquidity support loans) and receipts from other income-generating activities such as interest income on T-bills held in its portfolio, receipts from sale of T-bills for open market operations and receipts from supervisory fees.

The BSP is also subject to the documentary stamp tax applied to borrowing transactions through the reverse repurchase facility. However, to reduce the cost to the BSP of stamp duty, a less costly alternative means of monetary management, the Multitranaction Interbank Payment System (MIPS)

was adopted. The BSP's participation in MIPS eliminates the burden of paying stamp duty on its reverse repurchase transactions, particularly on overnight transactions. MIPS allows interbank borrowing and lending transactions without collateral and, therefore, does not require the presentation of collateral documents and the payment of corresponding taxes on these documents.

2. Arguments for giving tax-exempt status to the BSP

The granting of tax-exempt status to the BSP is supported by the BSP for the following reasons:

1. *The operations of the BSP are guided by its mandate to maintain price stability and not by profit considerations. It should not be taxed, particularly on its open market operations, on the same basis as profit-oriented commercial banks.*

Given the underlying objective of maintaining price stability, the BSP's monetary instruments should be differentiated from the ordinary borrowing and lending operations of banks, which are in the business for profit. While it has no products or services to sell, the BSP participates in the market because it is required by law to ensure monetary stability. The BSP's borrowing and lending activities are intended primarily to manage the domestic money supply so as to maintain stable prices conducive to balanced and sustainable economic growth. Hence, its operations are not guided by profit considerations, as indicated by the following examples:

- (a) Unlike banks whose borrowing and lending rates are market-determined, the BSP rates for its open market instruments are policy-driven, ie they serve as signalling devices for the current stance of monetary policy. Thus, there are instances when the BSP borrows at above market rates or below market rates, depending on monetary conditions.
- (b) Proceeds from the BSP borrowings from banks to reduce money supply are kept in its vaults instead of being lent out, and earning interest income, as ordinary banks do.
- (c) The BSP lends to banks experiencing temporary liquidity problems at market-determined T-bill rates, but its volume of lending is dependent on the amount of liquidity assistance required by banks.
- (d) The volume of sales of T-bills to the market by the BSP under its open market operations is also not determined by income considerations but by the need to ensure that the levels of monetary aggregates are consistent with the inflation target.

The conduct of monetary policy thus involves a range of financial risks and costs that result from policy decisions taken by a central bank. These costs, as noted above, include those associated with monetary operations such as sterilisation of capital inflows or repo costs. Monetary and exchange policies can also require the sale of foreign assets at less than favourable prices. While the underlying policy action may be successful, the financial consequences may require some explanation. *After all, while the BSP - like other central banks - does not pursue a profit objective, there is a high expectation that a profit should result from the monopoly power to issue currency granted to it.* Moreover, while the BSP is not a profit-making entity, it is expected to exercise internal financial prudence.

2. *The gross receipts tax imposed on interest income earned by the BSP from its lending activities and receipts from other income-generating activities could render the BSP less effective in fulfilling its primary mandate of keeping prices low and stable.*

Taxes add costs to the BSP's open market and other operations. The erosion of its income position due to higher expenses would render it less capable of funding its interest payments on its borrowings from banks for liquidity management purposes. This handicap could make the conduct of open market operations less effective, thus restricting the flexibility with which the BSP would be able to conduct monetary policy. Ultimately, this could adversely affect the public in terms of higher prices of goods and services.

For instance, when the BSP sees a likely acceleration of inflation, it raises its borrowing rate to mop up excess money supply and pre-empt the upward pressure on prices. However, this action will increase its interest expenses and lower its net income. Tax payment will further erode its net income. The BSP could even incur a loss. Since the BSP is expected to maintain sound financial operations, the payment of taxes effectively constrains the ability of the BSP to focus on its primary mandate of keeping prices stable.

3. *The cost of the gross receipts tax may be shifted to the banks and this could lead to higher bank lending rates.*

The BSP could pass on to banks the cost of the gross receipts tax by increasing the lending rates under the repurchase window and emergency advances or decreasing its borrowing rates under the reverse repurchase and special deposit account facilities. It must be noted that any decision by the BSP to do so would be based on its monetary stance and not on cost considerations. The shifted cost of the tax could lead to higher interest rates on bank loans and higher overall domestic interest rates, and thus pose a drag on economic growth. Based on the BSP's financial performance for 2001, it is estimated that the BSP would have to raise its lending policy interest rate by around 1 percentage point to cover the tax. The possible rise in market interest rates would increase the cost of domestic borrowings, including those for the national government.

4. *Taxing the BSP would mean a decrease in dividends and interest rebates to the national government.*

Taxing the BSP would increase its expenses and lower its net income. A lower net income would mean lower dividends and interest rebates to the government. Thus, whatever the government stands to gain in the form of taxes would be offset by lower dividends and interest rebates that the BSP would be remitting.¹ This would result in a neutral impact on the consolidated public sector financial position. Moreover, the imposition of tax on the BSP increases the level of national internal revenue collections and will benefit the local government units, as they are allotted a proportion of the national internal revenue collections. This partially offsets the impact on the budget of the increase in revenue collections.

3. Tax status of central banks in other countries

The governments of a number of countries in the Asia-Pacific region share the view that it is not appropriate to tax central banks and monetary authorities, particularly their open market operations.

A survey of the tax status of seven central banks and monetary authorities in the Asia-Pacific region found that none tax their open market operations (Annex B). The Hong Kong Monetary Authority, the Bank Negara Malaysia, the Reserve Bank of New Zealand and the Bank of Thailand are exempted from all other taxes. On the other hand, while the central banks/monetary authorities of Australia, Indonesia and Singapore are exempt from tax on open market operations, they are subject to other taxes. The governments of these countries recognise the crucial importance of ensuring the unfettered ability of their respective central banks/monetary authorities to conduct effective monetary management.

4. Conclusion

Taxes add costs to the operations of the BSP. The erosion of its income position due to higher expenses would render it less capable of funding its interest payments on its borrowings from banks for liquidity management purposes. This could make the conduct of monetary operations less effective. Likewise, if the gross receipts tax is passed on to banks through higher policy lending rates, this could lead to higher interest rates on bank loans, thus depressing the lending activities of banks.

¹ The BSP's profit before dividends in excess of 1% of its assets is remitted to the government as an interest rebate. Of the remaining net profit after such rebate, 75% is remitted to the Bureau of the Treasury for the liquidation of the liabilities of the Central Bank Board of Liquidators (see Annex A for a note on its operations) or to the government as a dividend, and 25% is retained under the surplus account in the BSP's books. The proceeds of bonds sold by the Republic to the BSP pursuant to a Memorandum of Agreement between the BSP and the Department of Finance are maintained in special interest bearing accounts with the BSP.

The taxation of the BSP operations also means lower dividends and interest rebates to the national government. Thus, the tax gains would be offset by lower dividends and interest rebates that the BSP would be remitting to the government.

The conduct of monetary policy by the BSP entails financial risks and costs that could result from its policy decisions. As such, while the BSP is not principally pursuing a profit objective, it is nevertheless expected to operate profitably and exercise internal financial prudence. Taxing it like any corporate entity introduces complications in these respects.

Finally, it is noted that the governments of other countries do not tax central banks/monetary authorities, particularly their open market operations. These governments recognise the need to conduct effective monetary management.

Annex A: Notes on the liquidation of the former central bank

The New Central Bank Act of June 1993 set two basic prerequisites for the BSP: the constitution of a new Monetary Board (fulfilled in August 1993) and the transfer of certain assets and liabilities from the old central bank (CBP) to the BSP.

To meet the second requirement, the Act provided for a Committee of Seven to determine which assets and liabilities of the CBP may be transferred to or assumed by the BSP. The Committee was comprised of: three members of the Monetary Board, including the Governor, representing the BSP; the Secretary of Finance and the Secretary of Budget and Management, representing the national government; and the chairmen of the Committees on Banks of the Senate and House of Representatives, representing Congress. The Committee completed its work in November 1993.

The Committee was guided by the following principles, most of which were prescribed under the Act:

1. The capital of the BSP was set at PHP 50 billion, to be fully subscribed by the government. Initial paid-up capital was PHP 10 billion, with the balance payable within two years.
2. The assets and liabilities from the CBP to be transferred to the BSP were limited to an amount that enabled the BSP to meet its responsibilities and operate on a viable basis.
3. The outstanding amounts of the Monetary Adjustment Account, the Exchange Stabilisation Account and the Revaluation of International Reserve Account, all representing paper losses, were retained in the books of the CBP.
4. Liabilities assumed by the BSP included liability for notes and coins in circulation.
5. Any asset or liability of the CBP not transferred to the BSP was retained and administered, disposed of and liquidated by the CBP. This continues to exist as the Central Bank Board of Liquidators (CB BOL), solely for this purpose, but only for 25 years or until the retained liabilities have been liquidated.
6. The BSP is a new corporate entity and, therefore, any capital that is paid in should be backed up by real assets.
7. Assets inherent to central banking were first transferred to the BSP. In the same manner, liabilities inherent to central banking but PHP 10 billion less than the corresponding assets were assumed by the BSP.
8. Fair market valuation of the fixed assets of the CBP was carried out prior to the transfer.

The distribution of the assets and liabilities of the CBP between the BSP and CB BOL was based on the CBP's balance sheet as of 2 July 1993. Of the total assets of the CBP of PHP 623 billion, PHP 291 billion (the bulk of which was in the form of international reserves) was transferred to the BSP, and the balance of PHP 332 billion was retained with CB BOL. Of the total liabilities of the CBP of PHP 612 billion, PHP 281 billion (mostly in the form of currency issued and deposit liabilities) was transferred to the BSP, while PHP 331 billion was retained in the books of CB BOL. CB BOL has not defaulted on the payment of any of its foreign obligations. As of November 2002, CB BOL's foreign liabilities had been reduced to PHP 68 billion, from PHP 110 billion in July 1993.

To further strengthen the BSP's financial position and ensure that it would not incur losses in the future, the Committee reiterated the following provisions in the BSP charter:

1. full capitalisation of the BSP at PHP 50 billion by July 1995;
2. maintenance of a positive net foreign asset position;
3. collection of interest and other charges on all loans and advances that the BSP extends;
4. issuance of BSP certificates of indebtedness only in cases of extraordinary price changes;
5. authority to charge equitable rates, commissions or fees for services which the BSP renders to the national government, its political subdivisions and instrumentalities;
6. prohibition of BSP involvement in developmental financing.

Since its establishment, the BSP has remitted to the government PHP 51 billion in dividends and interest rebates and paid taxes of PHP 23 billion for the period July 1998 to November 2002.

**Annex B:
Survey results on the tax status of selected central banks**

Economy	Central bank	Tax status	Types of taxes levied
Hong Kong	Hong Kong Monetary Authority	Exempted	na
Malaysia	Bank Negara Malaysia	Exempted	na
Thailand	Bank of Thailand	Exempted	na
New Zealand	Reserve Bank of New Zealand	Exempted	na
Indonesia	Bank Indonesia	Exempted for open market operations but Bank Indonesia withholds 15% tax on interest income earned by corporate buyers of its paper	Income tax; property tax
Singapore	Monetary Authority of Singapore	Exempted for open market operations	Tax on properties; goods and services tax
Australia	Reserve Bank of Australia	Exempted for open market operations and income tax; but earnings available for distribution after transfers to reserve funds maintained for contingencies are paid as dividend to the government	Local government tax paid on gratuitous basis; fringe benefit tax on non-salary component of employees' remunerations; payroll tax on salaries; sales tax on cars

Source: Executives' Meeting of East Asia-Pacific Central Banks and Monetary Authorities Survey 1998.

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The monetary and fiscal policy mix in Poland

Marek Rozkrut¹

1. A short history of the monetary and fiscal policy mix

Since 1998 monetary and fiscal policies in Poland have been formulated by distinct and independent monetary and fiscal authorities. The history of cooperation between them allows an appreciation of the relevance of the policy mix for the composition of final demand and output, and for interactions between monetary and fiscal policies.

In Poland, the policy mix has largely been determined by monetary and fiscal authorities' perceptions of each other's credibility. Increased uncertainty about the fiscal stance resulting from unexpected fiscal relaxation led to a conservative, tight monetary policy. Combining that with a significant increase in government expenditures suggests that a sub-optimal policy mix is one of the factors that have hampered economic growth in Poland. Such a state of affairs has its source in the past.

Monetary policy determinants

Since 1999 the National Bank of Poland (NBP) has based its policy on direct inflation targeting, thus strengthening its commitment to the price stability goal. Although unforeseeable circumstances meant that short-term goals were not realised, it seems highly probable that the medium-term inflation target set for the end of 2003 will be achieved. This, in turn, should enhance the central bank's credibility. Notwithstanding this achievement, the NBP has often been accused of conducting too tight a monetary policy, and paying insufficient attention to other economic developments, and so keeping interest rates too high. The monetary stance, however, has been determined by a loose fiscal policy to the extent that it has affected the ability of the NBP to attain its inflation target, thereby enforcing further tightening of monetary policy, leading to the sub-optimal policy mix.

Fiscal policy turmoil

From early 1998 the NBP's monetary policy committee relaxed monetary stance by lowering interest rates. It was a natural response aimed at reviving economic growth, which had been hampered by the Russian crisis. The response was "natural" because the central bank's decisions appeared to pose no risk to the desired disinflation trajectory. However, the sequence of events that followed did not correspond with expectations and impinged on relations between the monetary and fiscal authorities for the next few years, leading to a deteriorating policy mix in Poland. The underlying cause of the fiscal turmoil in 1999 was the Social Security Fund breakdown, an event resulting from the temporary loss of control over the inflow of social security contributions. According to the European Commission (2002, p 121), Poland's structural deficit in 1999 increased to above 5% of GDP. Consequently, an unexpected increase in fiscal expenditure, combined with earlier relaxation of the monetary stance, poor external demand and negative supply shocks, led to a surge in inflation and deterioration of the current account deficit.

Under these circumstances, the NBP adopted a very cautious attitude towards the conduct of monetary policy, reflected in a series of interest rate increases and a subsequent series of careful reductions. The Monetary Policy Committee's conservative strategy came in for severe criticism, which further fuelled mutual distrust between the fiscal and monetary authorities. Subsequent events did not facilitate the relaxation of the monetary stance. Insufficient fiscal consolidation, and fiscal policy relaxation, led to an additional contraction in the monetary stance, thus resulting in a far from optimal

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combination of too loose fiscal and too tight monetary policies. Two revisions to the budget in 2001 further weakened the credibility of the fiscal authorities. The 2003 budget does not seem to bring much change in this respect either. Of particular concern is an increasing share of government expenditure in GDP, which hampers long-run economic growth. All in all, the emerging picture is that of an unfavourable policy mix that has constrained the development of the Polish economy.

2. The policy mix given frictions between real and nominal convergence

EMU challenges

Having recognised the underlying causes of the policy mix imbalances and their adverse influence on the Polish economy, one should not underestimate the significance of an adequate mix of policies. Current challenges facing Poland further strengthen the need to improve the combination of monetary and fiscal policies. Poland is on the point of joining the European Union. Soon afterwards it will aim at entering the ERM II and subsequently the euro area. Poland, however, has to fulfil the Maastricht nominal convergence criteria before becoming eligible for euro zone membership. In October 2002, representatives of both the NBP and the Polish government declared that they would aim to fulfil the Maastricht criteria in 2005. However, the most recent statements made by government officials seem to indicate that their commitment may not be maintained. By contrast, in the currently published *Monetary policy strategy for after year 2003*, the NBP has reinforced its stance on euro zone accession.

Fiscal tightening and policy mix adjustments

The most challenging convergence criterion for Poland will be the budget deficit. It should be stressed here that the 3% budget deficit ceiling not only determines eligibility for euro zone membership, but also constitutes a requirement imposed by the Stability and Growth Pact (SGP), which Poland will have to respect from the time it enters the EU. Unfortunately the SGP is all stick and no carrot.

Both the pursuit of nominal convergence and the stringency of the SGP will require a significant tightening of fiscal policy in the near future. Moreover, bearing in mind that no significant steps have been undertaken in this direction in the budget for 2003, the fiscal stance may be expected to be even more restrictive in subsequent years. In the light of the current economic downturn, high unemployment and continuing lack of clear-cut signs of economic revival, such a tightening may entail - according to neo-Keynesian theory - significant costs in terms of economic growth and social expenditures. In this context, choosing a quick path towards the achievement of nominal criteria may conflict with real convergence in the short-run. However, some economists have claimed that these costs could be compensated for by a parallel relaxation of monetary policy in the form of a cut in interest rates, which would make up for the fiscal policy contraction. In this way, fulfilling the nominal Maastricht criteria would not constitute an obstacle on the real convergence path. The question that arises here is whether such an approach would work in Poland.

On this reasoning, having completed the disinflation process, and having achieved lower than expected inflation (in March 2003 the annual inflation rate amounted to 0.6%), monetary policy could provide some stimulus on condition that a corresponding fiscal contraction takes place. Therefore, an agreement between the NBP and the government might result in a common strategy consisting of fiscal tightening and a simultaneous relaxation of monetary policy. However, the crucial factor in such a cooperative process is the credibility of the respective authorities. Assume that the monetary authority decides to lower interest rates, basing its decision on the fiscal authorities' commitment to tighten their policy. If fiscal decision-makers reneged on their promise and loosened their stance, then the central bank could lose credibility, regardless of what steps it took, because the assumed economic outcome would not materialise and inflation would increase. In addition, such swings from too loose to too tight a policy mix could increase the volatility of output. To a certain extent, developments in Poland have been marked by such a sequence of events. Returning the policy mix to balance requires regaining credibility first. This process, however, is a long one, for it is conditional on the pace of the "memory decay". In addition, any slippage sets it back considerably.

The foregoing implies that a proper adjustment in the policy mix can take place only with credible commitments by both fiscal and monetary authorities. Such an adjustment would also moderate the costs incurred due to sharp fiscal tightening necessary to fulfil the nominal criteria. Looking at the historical experience, it is clear that the credibility of the monetary and fiscal authorities in Poland still needs to be enhanced before a credible deal, as advocated by some economists, may take place.

Providing a “credibility anchor” - the role of the Stability and Growth Pact

The factor that significantly limits the fiscal authorities' credibility in Poland is the lack of any nominal/real anchor, that would constitute a constraint on the excessive fiscal relaxation, thus improving the transparency and predictability of the fiscal stance. One attempt to implement such an anchor was the “inflation plus one” rule, which aimed to limit the expenditure growth rate to 1 percentage point above inflation. This rule, though praiseworthy, would require further development, as it was unclear whether the constraint would refer to the central budget or the entire public sector. In the latter case, it would hardly be feasible to fulfil such a commitment, for a significant proportion of public sector expenditure remains beyond the control of the central fiscal authorities. Notwithstanding these shortcomings, giving up the “inflation plus one” rule, which is reflected in the assumed level of expenditures in the 2003 budget, certainly did not enhance the credibility of fiscal policy. A new Minister of Finance announced a new fiscal rule, according to which increases in central budget real expenditures should not exceed real GDP growth. However, as long as no formal commitment has been made by the fiscal authorities, these rules will be perceived as subject to change. If the rules were indeed changed, this could prove counterproductive in terms of the credibility of fiscal policy.

In this context, the commitment to fulfil the Maastricht criteria in 2005, if stood by, might in a way “anchor” expectations as to the stance of fiscal and monetary policies in the allotted time, thereby enhancing transparency of the respective policies. Fulfilling the budget deficit criterion, however, may not necessarily be equivalent to limiting the structural deficit. The target deficit can be achieved through a cyclical improvement, while it is the structural deficit that determines the shape of the policy mix.

Against this background, the SGP could be of considerable value as a vehicle for fostering the credibility of fiscal policy and – consequently – improving the quality of the policy mix in Poland. In particular, the surveillance procedure of the SGP represents a nominal anchor, for it allows tracking of the budgetary stance of EU member states and, should the need arise, enforces the 3% budget deficit limit via the threat of introducing the excessive deficit procedure. Although the penalty for EU members not participating in the euro area is limited, the Council of the European Union may reduce its allocations from the Cohesion Fund to a member country that overspends. Therefore, after joining the European Union, any relaxation of the fiscal policy not justified by a sudden and unfavourable change of macroeconomic environment, and resulting in a breach of the 3% reference value, may entail significant costs. The SGP, by providing a stick, influences expectations as to the limit of the prospective budget expenditures. Moreover, because of the continuous nature of surveillance, the SGP imposes fiscal discipline over the long run, fostering the long-term credibility of fiscal policy. Upholding the announced commitment of the fiscal and monetary authorities to fulfil the Maastricht criteria would only add to that positive process.

3. Concluding remarks

The enhanced cooperation between the government and the NBP, combined with the credibility imposed by the SGP, should improve the policy mix in Poland. However, it seems inevitable that some costs will be incurred when fiscal policy is sharply tightened in order to fulfil the nominal criteria. Temporary frictions between the nominal and real convergence processes may nevertheless be moderated by an adequate adjustment of the policy mix. This, however, will largely be conditional on the credibility of the respective institutions. Against the background of recent disputes and distrust between monetary and fiscal authorities, which may not be forgotten quickly, regaining confidence may be a lengthy process in Poland. Latest statements, questioning the government's commitment to fulfil the Maastricht criteria in the allotted time, may still protract it. Importing a “credibility anchor” in the form of the SGP, however, should shorten that process significantly. Improved credibility will facilitate coordinated shifts towards tightening of the fiscal policy and loosening of the monetary policy, which in

turn should improve the macroeconomic situation and contribute to lasting and balanced economic growth in Poland.

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Budget and tax problems and central banks: Russia's experiences

Oleg Vyugin¹

1. Medium-term budget and tax positions of emerging market economies

The most widely used indicator of the position of the budget, and the efficiency of the budget policy as a whole, is the ratio of the fiscal deficit or surplus to GDP. It should be noted, however, that if it is necessary to determine more precisely the credibility of the fiscal policy pursued, the analysis of this ratio should be complemented by information on the structural aspects of government revenue and expenditure. In Russia, the size of a budget deficit or surplus is calculated on a cash basis or by financing method. The Central Bank of the Russian Federation (Bank of Russia) believes that one of the major preconditions for the implementation of an efficient monetary policy today is the pursuit by the federal government of a budget surplus policy, which creates conditions for optimal government debt management and makes enterprises competitive in the domestic market. In the last few years Russia has had a budget surplus: calculated according to the cash basis method, it was 1.1% of GDP in 2000, 2.6% in 2001 and 1.4% in 2002. Calculated on the basis of liabilities, the surplus has been considerably smaller owing to the constant accumulation of balances in the accounts of recipients of budget funds. The kernel of the matter is that the Federal Treasury has not yet created a single account for day-to-day management of budget resources. Budget-financed organisations are unable to gain instant access to funds to fulfil their obligations and therefore they have to keep considerable positive balances in their budget accounts. However, the main factor contributing to the budget surplus is the persistent efforts made by the federal government to reduce the country's domestic and foreign debt and create a financial reserve to compensate for peak government debt payments. As a result, such fiscal tactics of the government have a significant effect on the money supply and the monetary policy pursued by the Bank of Russia.

Owing to the country's three-tier budget structure, the federal government's budget surplus does not preclude budget deficits at the regional level. In 2000-02, the Russian government implemented a policy of centralising tax revenues at the federal level while simultaneously passing a part of regional and municipal budget liabilities to the federal budget. Specifically, it made the decision to include all value added tax revenues in the federal budget (previously 15-25% of VAT revenues went to regional budgets) and to cut the profit tax from 35% to 24%. At the same time, regional budget obligations to finance child and disability allowances have been transferred to the federal budget and transfers have been increased for regions with budget deficits. Nevertheless, a number of regions still have budget deficits.

Although under the Constitution the Russian regions are independent in managing their budgets, Russia must have a single budget concept, which should be implemented on the basis of effective budget interaction at all levels. It should be emphasised that a budget deficit is not always a bad thing. Its nature and role should be evaluated taking into consideration the causes, areas and uses of the additional financial resources mobilised and the sources and methods of financing. In recent years the government has increasingly used budget reserves as a precaution against a possible budget deficit, even though this method is not written down in the Budget Code. The 2002 Federal Budget Law provided for creating a financial reserve from the budget surplus of RUB 110 billion and free federal budget funds in the Federal Treasury accounts as of 1 January 2002. This fund can only be used as a substitute for internal and external sources of financing the federal budget deficit and government debt repayment. The Ministry of Finance manages the financial reserve in accordance with the procedures set by the federal government.

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Evaluation of the stability of the budget and tax position by central banks

One of the key indicators of stability of the budget and tax position is the amount and dynamics of government debt relative to GDP. Thanks to timely payments, by the end of 2002 Russia's government debt had contracted to 40% of GDP from 49% at end-2001. At the same time, the burden of government debt servicing remains heavy as interest payments account for (almost a third) of total expenditure in the federal budget. One of the indicators of the government's ability to fulfil its debt obligations is budget liquidity, that is, the ratio of budget revenues to government debt service expenditures. In the last two years, this ratio has gradually increased (from 6.5 in 2000 to 9.8 in 2002).

Of primary importance for a central bank is the movement of funds in its accounts opened for the budget implementing agencies and some government funds. The movement of funds in these accounts affects the monetary base. The Bank of Russia has opened accounts for the Federal Treasury and several government funds, both federal and regional. The Federal Treasury implements not only the federal budget, but also some regional budgets. Therefore, the balances of accounts opened with the Bank of Russia for the Federal Treasury and government funds are constantly monitored, and forecasts for their movement are used in drawing up the monetary programme.

The balance of budgets (fiscal position) is of interest as the budget is an instrument of the government's economic policy and influences aggregate demand.

According to the contemporary methodology of compiling budget implementation reports, the fiscal position is the difference between revenue (from taxes and the activities of government institutions) and expenditure. Therefore, it does not include revenue from the sale of state property and reserves or expenditures on debt servicing.

In recent years Russia has managed to show quite adequately the government's fiscal operations in the budget classification. The budget has also been quite clearly separated from the activities of government unitary enterprises, which pay taxes in compliance with the tax legislation and receive no subsidies from the government. Revenues from government assets are not recorded in the budget in full, as a part of them is appropriated by government and budget organisations which finance through their budgets some state or public expenditures. The government regulates tariffs on gas and electricity, rent and utility service prices and transport fares. These products and services are provided by government or municipal commercial companies. Their budgets are not transparent to government regulators, even though the government tries to analyse and set limits on their investment programmes. It should be noted that at present the existence of such quasi-fiscal interrelations does not upset tax and budget stability.

Restrictions imposed on regional and local government budget and tax positions

There are some differences between the financing of the regional and local government budget deficits and the federal budget deficit. First, the regional and local governments are barred from borrowing from external sources; second, they have no revenues from the sale of valuables, such as precious metals and gemstones. Some regions (Yakutia, Tatarstan and the Magadan region) have been granted this right under power sharing agreements with the federal government.

As the activities of some Russian regions in international capital markets in 1997-98 proved extremely inefficient owing to high insolvency risks of regional borrowers, Russia's current Budget Code allows only the federal government to use external sources for the financing of a budget deficit. Internal borrowings were banned at the regional level in the first few years after the 1998 crisis. These restrictions have been lifted, but an issue prospectus is subject to approval by the Finance Ministry, which ensures that the regions observe the 15% limit set by federal law on the total amount of their debt relative to their total revenue and the 30% limit on interest payments relative to their total expenditure.

Specifically, Russia's Budget Code contains a number of requirements that regulate the size of the budget deficit. A federal budget deficit, for example, cannot exceed the total amount of budget investments and government debt service expenditures, while a regional budget deficit cannot exceed 15% of revenue, excluding financial aid from the federal budget. The limit set on the regional budget deficit may be increased by the amount of revenues from the sale of regional government property. A local government budget deficit, approved by the corresponding local government's budget act, cannot exceed 10% of local budget revenue, excluding financial aid from the federal and regional budgets,

although this limit may be raised by the amount of revenues from the sale of local government property.

Effectiveness of budget and tax rules as a means of regulating federal government balance sheets

There are some flaws in the tax and budget rules set out in the Budget Code with regard to the budget surplus. Specifically, they say nothing about the possibility of the government creating and accumulating a stabilisation or reserve fund from additional (extraordinary) incomes, which may be made necessary by the government debt service schedule or the exigencies of the macroeconomic policy.

Budget deficit correction strategies and central bank ability to maintain price stability

As countries that have a current account surplus normally do not need to take external loans, they may, in an emergency, finance a budget deficit from internal sources. The best option in this case, however, is implementing a budget surplus policy based on the principle of making a reserve from a part of extraordinary budget incomes received from exports. If the monetary authorities for some reason refrain from using a floating exchange rate as a means of reducing a large trade surplus, it is the budget that must fulfil the function of sterilising liquidity in order to maintain macroeconomic stability, and this policy brings additional revenue to the budget. Should the balance of payments deteriorate, the reduction of a budget surplus may become a source of additional money supply without creating a budget deficit and, consequently, without provoking a sharp rise in inflation.

The Russian balance of payments has been stable since the 1998 crisis and significant growth in the current account surplus and the continuing accumulation of foreign exchange reserves and reduction of capital outflow bear this out. In 2001, Russia's capital and financial account deficit (including growth in reserve assets) was one third smaller than in 2000. This deficit is mainly caused by the timely and full servicing of the government's foreign debt and partly by a net outflow of private capital from the country. At the same time, an excess of foreign exchange supply over demand has created conditions conducive to the accumulation of foreign exchange reserves.

Another kind of budget policy can be used when there is a trade deficit which is covered by a capital and financial account surplus. If balance of payments equilibrium is achieved by the government sector taking out loans, the central bank's ability to maintain macroeconomic stability depends to a great extent on the size of the government's overall debt, when it is due and the budget liquidity ratio. If these positions are maintained at reasonable levels, it is quite possible to preserve exchange rate and price stability. If the principal borrower is the corporate sector, the central bank's possibilities depend on the competitive power of the corporate sector and the efficiency of corporate governance. In that case it is possible to try to impose controls on capital operations in order to prevent the volume of non-performing loans from reaching a critical level. Russia has a poor record in this respect. Before the 1998 crisis the country's balance of payments deficit had been financed by budget and corporate sector loans, although it had a large foreign debt to GDP ratio and a vast domestic short-term debt. As loans were used with little effect, Russia had to restore the balance of payments equilibrium by significantly devaluing its currency.

2. Anticyclical policy: monetary policy or budget and tax policy or both?

Medium-term orientation of monetary and budget and tax policies

In recent years Russia's budget policy has been designed to maintain a budget surplus and reduce government debt, while the aim of its monetary policy has been to tame inflation in the medium term.

This orientation of monetary and fiscal policy implies macroeconomic stability and increased confidence of economic agents in the macroeconomic policy pursued by the monetary authorities. This policy was chosen largely because the federal budget and balance of payments were extremely sensitive to Russian export prices, especially the price of oil. It will be possible to cushion external

shocks considerably if this conservative policy is continued until exports are diversified and the Russian economy becomes less dependent on oil and vulnerable to fluctuations in its price. Experience has shown that short-term responses to the economic situation by using budget policy tools is effective enough when the monetary authorities sterilise idle liquidity mainly by regulating the balances of federal budget accounts. Monetary policy tools, such as the raising of deposit interest rates, do not always lead quickly to an outflow of free capital from the money market.

The maintenance of a budget surplus requires cutting non-interest expenditures, which, in turn, restrains aggregate demand and, consequently, may contain economic growth. The emphasis on low inflation also prevents the monetary authorities from pursuing an expansionary policy. At the same time, the Russian authorities are looking for ways to shore up economic growth, preparing the ground for economic restructuring while foreign trade conditions are good, because the main problems of the Russian economy are connected with its structure rather than any particular phase of the business cycle. Now that the raw materials sector of the Russian economy is over-saturated with savings, the use of the budget deficit policy as a means of stimulating economic growth will hardly be appropriate.

The central bank and cyclically adjusted budget positions

The Bank of Russia takes into account cyclical factors when forecasting the state of government finances. It is clear that the budget surpluses of the last few years are the result of economic growth (which is no longer restricted to export sectors) and that Russia may see its budget position weaken as economic growth eases. To evaluate the budget position from the viewpoint of its structural and cyclical aspects, calculations are made on the basis of the prices of raw materials sold by Russian companies in world commodities markets. These calculations are taken into consideration in drafting the budget for the next year. It is the realisation of the difference between the structural and cyclical deficit that lies at the base of the concept of creating a federal budget financial reserve. At the same time, significant growth in budget revenues in 1999-2001, brought about by an economic upswing, allowed the Russian authorities to continue reforms aimed at alleviating the debt burden on economic agents. The government hopes that this will encourage further economic growth and allow it to preserve the budget surplus.

The inherent automatic stabilisers of the Russian budget system play too small a role today. Theoretically, the revenue side of the budget may dampen cyclical fluctuations. Budget expenditures are normally approved beforehand and hardly increase at all during the budget year, including expenditures on the socially vulnerable population groups, although the 2001 and 2002 budgets provided for contingent expenditure items that would only be implemented if more revenue was collected than planned. Moreover, a tax on the development of mineral resources was introduced, which partly protected the revenue part of the budget from oil market fluctuations.

A large budget deficit or rapidly growing government debt makes it impossible to increase budget expenditure and cut taxes in order to maintain economic growth during a recession. In the upswing, for example, the opposite measures are impossible to implement in order to suppress inflation, because such measures are not supported by the electorate. As the public may consider a cut in taxes to be a temporary measure, its more far-sighted representatives will be in no hurry to change their spending, so the deficit may increase while aggregate demand will remain unchanged. The authorities responsible for the budget may take such a long time to react (making amendments to tax and budget laws is a long process, as has been noted above) that budget measures alone may not suffice to stabilise the situation.

Coordination of monetary and budget and tax policies

An expansionary monetary policy often leads to interest rate cuts, which on the one hand should stimulate investment and on the other hand increase capital outflow, consequently undermining the national currency and encouraging growth in net exports. That is why the scale of capital outflows and the exchange rate are the yardsticks by which one can judge if the choice of an expansionary monetary policy is right.

In post-crisis Russia, macroeconomic stability, necessary for the implementation of structural reforms, has been ensured by a fairly tight budget policy, implemented amid a decline in net domestic assets. The only source of growth in the monetary base is the expansion of net international assets of the monetary authorities. The government is set to reduce its spending and retain a primary surplus (in

2001/02, a general surplus). Although actual non-interest expenditure grew relative to GDP in 2001/02, the government managed to preserve a surplus in its consolidated budget on the basis of liabilities owing to growth in revenues. A surplus budget enabled the Bank of Russia to pursue an effective and manageable floating exchange rate policy designed to preserve a trade surplus reserve as a safeguard against a steep fall in the price of oil and other Russian exports. This policy has proven effective this year from the standpoint of the implementation of the monetary programme drawn up at the beginning of the year, which set the inflation target at 14%. At the same time, the Bank of Russia practically refrained from refinancing commercial banks to avoid creating a more acute problem of sterilising excess liquidity. Its activities in the open market this year were dominated by mid-term operations (one- to three-month) to move bank liquidity to Bank of Russia deposits and short-term (overnight) refinancing of banks at market rates. Consequently, the interbank interest rate was set on the basis of the price which the Bank of Russia was prepared to pay commercial banks for their readiness to reduce liquidity.

It should be noted that budget deficit/surplus problems are often regarded mainly from the point of view of their effect on economic growth and employment. In Russian budget policy, however, a budget surplus is to a greater extent a macroeconomic shield protecting the economy from potential painful external shocks. A budget surplus allows Russia to contain the appreciation of the rouble when export earnings are high and thus makes it possible to preserve a sound balance of payments when market conditions deteriorate, by allowing a budget deficit.

What determines long-term interest rates?

Many analysts emphasise that, in general, changing interest rates to control the monetary and credit relations in the economic system is an extremely inaccurate and intangible process. As for long-term interest rates, their level and dynamics depend above all on the outlook for the development of the economy as a whole. It is clear that the central bank base rate serves as a benchmark for them. As for the federal budget deficit, research conducted by US analysts shows that its size directly affects the difference between the short-term and long-term interest rates in the economy.

In the Russian economy, just as elsewhere, the long-term interest rates depend above all on the expectations of economic agents, which in turn develop under the impact of economic processes. The more unpredictable the economic processes, the higher the risks and interest rates. When economic agents and the government establish the rules of conduct and abide by them, economic confidence is enhanced and interest rates may decline. A budget deficit is a negative signal for economic agents. Yields on Russian government bonds today are considerably lower than they were shortly before the 1998 crisis. Moreover, the real yields on outstanding government securities are minimal and the difference between interest rates on one-year and five-year papers only reflects a premium for liquidity. Central bank rates are becoming increasingly important for the short-term market, and plans are afoot to make the central bank rate on open market operations the anchor of monetary policy.

Consequences of short-term and foreign currency borrowings for monetary policy

Most of the federal bonds traded have a maturity of less than five years. Long-term government securities are not traded in the market and have always been kept by the Bank of Russia in its portfolio. At times when there is a federal budget surplus the government securities market is rather limited in terms of liquidity, although there are many investors wishing to buy securities in this market. In the last few years foreign debt has been increasingly replaced by domestic debt, while the latter's term to redemption has increased significantly. Before the 1998 crisis the Russian authorities had pursued an opposite policy: budget loans denominated in foreign currency, many of them short-term, had expanded at rapid rates, replacing residents' domestic loans, and that led to the budget and balance of payments crisis.

The conclusion is that a large share of short-term loans and foreign currency denominated loans weakens monetary policy as the balance of payments becomes vulnerable to the effect of a large-scale movement of short-term capital.

3. Balance sheets and quasi-fiscal operations of central banks

The role of seigniorage in recent years

Seigniorage as an issuance income may be divided into a net issuance income and inflation tax. The net issuance income, which is a change in the sum of real cash balances, appears when there is real economic growth or a favourable change in the demand for money. The inflation tax is equal to the inflation rate, which in this case is a "tax rate" multiplied by the real amount of cash (a taxable base). In recent years seigniorage has not only arisen from the issue of money; it has come from reserves created by commercial banks. The new bank reserves created in the process of seigniorage are becoming the principal cause of the multiple expansion of money in circulation. Moreover, while a constant moderate expansion in the money supply is entirely compatible with long-term price stability, excessively rapid growth in the amount of money in circulation provokes inflation.

Central bank resources and their use for specific budget purposes

The volume of quasi-fiscal operations conducted by central banks (credit subsidies, actions in support of the government bond market, etc) depends on the specific monetary situation and usually increases when this situation becomes slightly destabilised. The volume of Bank of Russia quasi-fiscal operations expanded significantly after the banking crisis of 1998. Although Article 22 of the Law on the Central Bank of the Russian Federation and Article 93 of the Budget Code prohibit the Bank of Russia from extending loans to finance the budget deficit by buying government securities at the time of their initial placement, the 1998/99 federal budget laws permitted using for this purpose the funds raised as a result of the purchase by the Bank of Russia of permanent coupon-income federal bonds. Although officially this was done through the Savings Bank (Sberbank), it did not change the essence of the transaction. In addition, in that period the Bank of Russia provided foreign currency to the Ministry of Finance through the Vnesheconombank (Bank for Foreign Economic Affairs) for government debt payment and service and restructured Bank of Russia-owned Finance Ministry bills and other securities, including accrued interest. As a result, the Finance Ministry's debt to the Bank of Russia amounted to RUB 655 billion (USD 21 billion) as of 1 January 2003, of which RUB 385 billion, or 57% of Russia's domestic government debt, were denominated in the national currency.

The structure of Russia's domestic government debt and securities market, as at the start of 2002, will not allow the Finance Ministry to increase domestic borrowings in 2002 and the subsequent years or expand the range of debt instruments without increasing interest expenditures (with regard to domestic debt), because a large part of domestic government debt is now owned by the Bank of Russia. It should be noted that 94% of the Finance Ministry's rouble-denominated debt to the Bank of Russia is non-marketable and illiquid owing to a low coupon interest rate (from 0 to 2%) and long maturity (up to 30 years). This debt is a drag on the Bank of Russia's balance sheet, depriving the Bank of considerable resources and restricting the range of instruments it could otherwise have used to enhance the efficiency of its monetary policy.

Assessing the fiscal policy stance in Singapore

Edward Robinson and Angela Phang Seow Jiun¹

1. Introduction

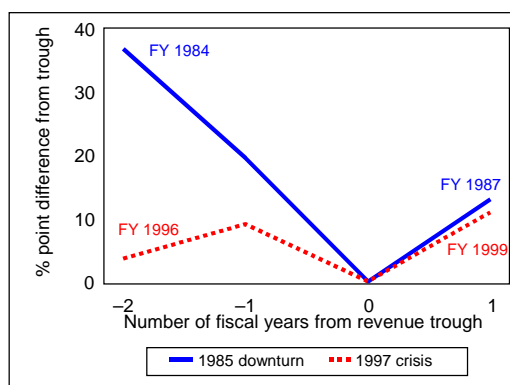
In this short note, we will examine some recent developments in the government budget position in Singapore, against the backdrop of sharp fluctuations in domestic activity, following the increased volatility in the key IT markets as well as in final demand in the United States. Our objective is to shed some light on the operation of automatic stabilisers in Singapore, particularly in the revenue components as well as on computations of the fiscal impulse measure, which gives an indication of the discretionary budgetary responses adopted by the government during the downturn of 2001.

2. The automatic stabilisers in operating revenue

The recovery of operating revenue in 2000 reflected the cyclical upturn, when the economy grew strongly. Government receipts vary to some extent with the business cycle, growing during booms and shrinking in recessions. For Singapore, this automatic stabiliser effect largely operates through taxes, particularly income taxes, which help moderate the fall in income when private economic activity declines and restrain the increase in income when activity rises.

The effect of the automatic stabiliser was observed in both the recent economic downturn during the Asian crisis and the mid-1980s recession in Singapore, when operating revenue initially declined and picked up subsequently as the economy recovered. Graph 1 shows the cycles of operating revenue for both periods: fiscal years 1984-87 (solid line) and 1996-99 (dashed line) relative to the troughs reached in each period. During the mid-1980s economic downturn, operating revenue collection declined for two years before picking up in FY 1987. In contrast, revenue contracted only in FY 1998 during the recent slowdown. At the same time, the rate of contraction in the 1980s was much faster than that in the 1990s, reflecting the relatively more severe recession in the earlier period when nominal GDP shrank by 5.2% in FY 1985, compared to the 4.4% decline in FY 1998.

Graph 1
Operating revenue



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However, the rebound in operating revenue in the 1980s was also quicker. These trends in operating revenue would have been influenced by three factors, for which they should be adjusted before any inferences on the automatic stabilisers can be made. First, in both the mid-1980s and the recent Asian crisis, discretionary policy measures were implemented to help support the economy during the downturn. The impact of these measures was quantified based on estimates in budget speeches and off-budget announcements (Box A), and adjusted for in operating revenue (Box B). Second, there appears to have been a faster response in operating revenue to activity in the 1990s. In contrast, GDP turned around in FY 1986, but operating revenue did not pick up until FY 1987. Lastly, the impact of the differing pace of GDP contraction and resurgence in the two periods was adjusted for by scaling the revenue receipts by nominal GDP.

Box A		
Impact of discretionary fiscal policy on operating revenue		
We quantified the discretionary policy changes affecting operating revenue from the annual budgets of FY 1985-86 and FY 1998-99 as well as from the off-budget announcements. The revenue loss was then added to the actual operating revenue data.		
Estimated revenue loss per annum (SGD millions)		
	Policy changes	
FY 1985 budget	Suspension of payroll and telecom tax	-176
	Reduction in entertainment duty	-26
Off-budget 26 July 1985	30% property tax rebate effective 1 July 1985, for 1½ years	-260
Off-budget 31 August 1985	Reduction in ad valorem duty on petrol from 60% to 50%	-122
Off-budget 24 October 1985	Suspension of 10% tax on PUB gas and electricity charges	-92
FY 1986 budget	50% property tax rebate for the year	-440
	25% rebate on personal income tax for FY 1986	-250
FY 1998 budget	5% tax rebate on personal income tax for FY 1998	-130
	15% property tax rebate	-145
	Property tax exemption for land under development	-200
	Abolition of stamp duty on all instruments, except those related to stock and shares and immovable properties	-33
Off-budget June 1998	Additional 40% property tax rebate	-400
	Suspension of car park surcharge	-37
	Deferment of stamp duty by buyers of uncompleted property	-85
	Suspension of stamp duty on contract notes	-50
Off-budget November 1998	10% corporate tax rebate in FY 1999	-450
	Extension of property tax rebate till June 2000	-680
	Extension of the suspension of stamp duty on contract notes till June 2000	-70
	Reduction in foreign worker levy	-204
	Reduction in custom duty on cars	-47
	Extension of road tax rebate for a second year	-166
	Reduction in petrol excise duty	-75
	Removal of speed diesel excise duty	-32
	Increase in electricity tariff rebate and removal of tax on household bills	-372
FY 1999 budget	10% tax rebate on personal income tax in FY 1999	-275
November 1999 announcement	Reduction in foreign worker levy to be extended by an additional year	-204

Box B

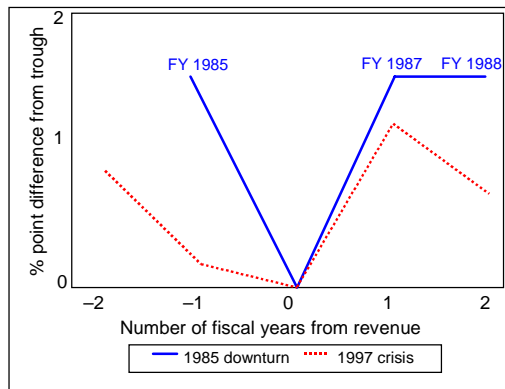
The resulting series gives the operating revenue excluding the effects from discretionary policies. For example, in FY 1985, our calculation indicates that the net impact of discretionary policy changes was SGD 0.5 billion. Hence, the adjusted revenue would come in at SGD 9.0 billion, compared to the actual collection of SGD 8.5 billion.

Fiscal year	Nominal operating revenue		Revenue loss from policy changes (SGD m)	Nominal operating revenue (adjusted)	
	Levels (SGD m)	% change		Levels (SGD m)	% change
1983	9,321	na	0	9,321	na
1984	9,682	3.9	0	9,682	3.9
1985	8,461	-12.6	-522	8,983	-7.2
1986	7,083	-16.3	-830	7,913	-11.9
1987	8,006	13.0	-746	8,752	10.6
1996	27,053	9.8	0	27,053	9.8
1997	28,480	5.3	0	28,480	5.3
1998	26,111	-8.3	-1,061	27,172	-4.6
1999	28,967	10.9	-2,004	30,973	14.0

Graph 2 incorporates all three adjustments. The contraction and subsequent recovery in the ratio of operating revenue to GDP was faster in the 1980s than in the most recent downturn, suggesting that the magnitude of automatic stabilisers in the government's tax system may have declined over the years.

Graph 2

Ratio of adjusted operating revenue to GDP



Two main factors determine the effectiveness of the automatic stabilisers - the elasticity of revenue items with respect to GDP and the effective tax rate.² The automatic stabiliser effect is generally stronger the higher the effective tax rate. Similarly, the effectiveness of a tax system in cushioning

² A measure of the automatic stabiliser is the change in tax revenue per unit of change in income, dT/dY . Elasticity is the ratio of the percentage change in tax revenues per unit of change in income, $(dT/dY)(Y/T)$.

Therefore $dT/dY = (dT/dY)(Y/T) * (T/Y)$ or measure of automatic stabiliser = elasticity * effective tax rate.

changes in income is greater the higher its elasticity with respect to its base. The Monetary Authority of Singapore's econometric estimates show that the elasticities of revenue have in fact declined compared with estimates obtained from an earlier study done in 1995 (see Table 1). The decline captures the impact from the increasing reliance on broad-based indirect taxes like GST, which generally have lower elasticities.

Table 1
Tax and non-tax elasticities³

Singapore	Total tax	Direct	Indirect	Non-tax ¹
1995	na	3.35	2.40	2.00
2000	2.03	2.14	1.87	0.95

¹ This refers to non-tax operating revenue.

With the introduction of GST in 1994 and the gradual reduction in income taxes, the proportion of indirect taxes increased to 34% of total operating revenue in the late 1990s from 27% in early to mid-1980s. While the shorter lags involved in GST collections also work to enhance the stabilising effect of the tax system, on balance it appears that the introduction of the broad-based tax has reduced the cyclical response of government tax revenue. In general, GST has smaller stabiliser effects, as fluctuations in consumption spending are usually not as pronounced as those of income cycles.⁴

Over the years, there has also been a gradual reduction in the effective tax rate. The effective personal income tax rate fell from 10% in the 1980s to 9.5% in the 1990s.⁵ In addition, the progressive structure (and therefore stabiliser effects) of the personal income tax system has been weakened slightly with the reduction of the number of income brackets from 13 in 1984 to 10 in 1997. At the same time, the potential stabiliser effects of corporate income tax have been diluted over the years with the reduction in the statutory rate from 38.25% in 1984-85 to 26% in 1998-99.

³

Tax elasticities in selected EU countries
(1999)

	Corporate tax	Individual tax	Indirect tax
France	1.50	0.90	1.00
Germany	2.50	0.90	1.00
United Kingdom	6.50	1.00	1.40

Source: OECD and IMF staff estimates.

⁴ The standard deviation of the growth rates of real private consumption was 4.2 over the period 1981-2000 compared to 9.8 for the MAS macro model's estimate of real disposable income. In addition, it is useful to note that automatic stabiliser effects are greater for income taxes, which are progressive, ie the ratio of tax to income rises when moving up the income scale. Receipts from a consumption tax, on the other hand, tend to respond in proportion to changes in income.

⁵ The effective tax rates are calculated based on net tax payable and total chargeable income. Estimates of the effective tax rate for personal income from the MAS Monetary Model of Singapore, based on calculations of private disposable income, also showed a decrease between the mid-1980s and 1997-99 of about 2 percentage points.

3. The fiscal impulse measure

As it is the changes in the size of the fiscal surplus, and not the absolute level per se, that determines the shift in the government's fiscal stance, a smaller fiscal surplus would imply that fiscal policy has become more expansionary compared with the previous year. However, merely observing the change in fiscal balance may be misleading because it is not clear whether shifts in the position are the cause or the result of changes in economic activity. A summary measure is required that captures the change in the fiscal balance resulting from both discretionary government expenditure and tax policies as well as the impact of automatic stabilisers in the budget that respond to economic activity.

One method of assessing the stance and thrust of fiscal policy is to measure the total impulse or initial stimulus to aggregate demand arising from the fiscal policy during a given period. A positive (negative) measure of fiscal impulse (MFI) will imply a more expansionary (contractionary) fiscal stance compared to the previous year. The changes in the MFI will capture the changes in both discretionary decisions on expenditure and revenue policies as well as the estimated effects of the automatic stabilisers.

We make use of the IMF methodology described in Heller et al (1986) to calculate the MFI as follows:

$$MFI = -\Delta B - g_0 \Delta Y^p + t_0 \Delta Y$$

where: MFI = Absolute measure of the fiscal impulse

T = Government revenues

G = Government expenditures

ΔB = The actual budget balance (first difference) ($B = T - G$)

g_0 = G_0/Y_0 , base year expenditure ratio

t_0 = T_0/Y_0 , base year revenue ratio

ΔY^p = Potential output⁶ in nominal prices (first difference)

ΔY = Actual output in nominal prices (first difference)

and the subscript "0" refers to base year values of any variables.

There are two important conceptual issues involved in the construction of the MFI. First, a number of industrialised countries select for the base year ($t=0$) for the MFI a year when the economy is assessed to be at its potential level of activity. Quite apart from the practical difficulties of choosing the base year using this method, it also means that the assessment of the change in fiscal stance in any one year could be distorted by the various changes in the tax policies, especially when the time period t_0 becomes increasingly distant.⁷ For the purposes of this study therefore, we have used the increasingly popular variant of adopting a "rolling" base year whereby the figures at time t are sequentially taken as base year figures for the MFI at time $t+1$.

Second, we derive the cyclically neutral budget under the assumption of unitary elasticities of expenditure and revenue with respect to the potential and actual output, respectively. Defining the cyclically adjusted budget in this way allocates the contribution of automatic stabilisers to the MFI. We can think of an actual deficit in excess of the cyclically neutral deficit as expansionary, relative to the base year fiscal stance, and the MFI is positive. This MFI attempts to remove transitory changes (in a cyclical sense) in the actual budget balance. Hence a positive MFI will imply a more expansionary fiscal stance *compared to the previous year*.

In addition, there are definitional issues to resolve before the MFI can be constructed. In line with the usual fiscal analysis, we define government revenue as government operating revenue and government expenditure as government operating and development expenditure. The government paid SGD 1.5 billion and SGD 1.9 billion in 1997 and 1999 respectively, to the telecommunications company for their loss of monopoly. In addition, a payment of some SGD 1.3 billion was made in 1997

⁶ Estimates of potential output are derived from the Monetary Model of Singapore.

⁷ Singapore's tax structure has shifted progressively towards a greater reliance on indirect sources of tax revenue.

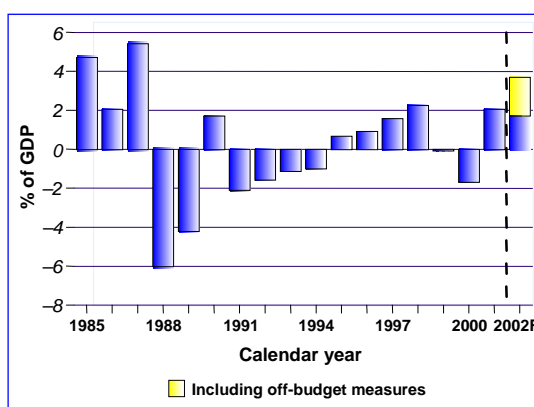
to compensate statutory boards for land returned to the government. Given that these payments were neither government consumption nor investment per se, they were removed to avoid distortions in our analysis.

Separately, as there were some changes in the budget presentation starting from the 2001 fiscal year, some adjustments were made to construct a consistent series for our analysis. Net investment income was subtracted from the budgeted figures and the cost of land reclamation was added to development expenditure. While net investment income should not have any impact on the economy, it can also be argued that land reclamation projects do have some economic influence, representing an increase in productive capacity. We also had to re-estimate operating revenue, operating expenditure and development expenditure for calendar year 2002, since the budget numbers are stated for the fiscal year while our analysis is based on the calendar year.

Our analysis shows that MFI has been positive since 2001, implying that the fiscal stance has been more expansionary than the year before. This reflects the more accommodating stance adopted by the government in view of the sharp economic slowdown. The Singapore economy contracted by 2.4% in 2001, before staging a modest recovery of 2.2% the following year.

Similarly, our estimated MFI for 2002 is relatively strong, at 3.7% of GDP, which in turn implies that fiscal policy has been more expansionary than in 2001. Of this, more than half can be attributed to the measures introduced through the off-budget packages in 2001 (see Graph 3). This largely reflects the acceleration of major infrastructure projects as well as the impact of the tax and fee rebates announced in 2001.

Graph 3
Fiscal impulse measure



It should be remembered that the MFI is designed to determine the direction of the change in budgetary stance, rather than to assess its effect on the economy. For a clearer picture of the impact of fiscal policy on the economy, it is necessary to complement the above analysis with a study of the fiscal multiplier effect using a macroeconomic model.

Reference

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The implications of fiscal issues for central banks: the South African experience

Gill Marcus

Introduction

The South African monetary authorities have been fortunate in that fiscal issues have not in general complicated the conduct of monetary policy. A situation of fiscal dominance does not exist, and there is no pressure on the central bank to finance unsustainable government deficits. This note outlines recent developments in South Africa's fiscal policy, which demonstrate the extent to which fiscal prudence has contributed to a lower-inflation environment. A few comments are also made on the coordination of monetary and fiscal policy.

Fiscal policy and fiscal deficits

Prior to South Africa's transition to democratic rule in 1994, there were developments on the fiscal front that were of concern to the South African Reserve Bank. Since the early 1990s the budget deficit had been expanding relentlessly, reaching almost 8% of GDP in 1992/93. There was a concomitant acceleration in the debt/GDP ratio to around 50%, and the share of government expenditure devoted to interest payments increased to above 20%, making it one of the single biggest budget items. There were fears in some quarters that the new government, faced with major social and infrastructural demands, would not be in a position to reduce the deficit, and that eventually there would be recourse to the printing press.

As it turned out, macroeconomic discipline, and fiscal discipline in particular, became a central plank of macroeconomic policy as outlined in the Growth, Employment and Redistribution (GEAR) policy document published in 1996. This aspect of the GEAR framework has remained a crucial part of macroeconomic policy. The GEAR policy emphasised that fiscal policy would be conducted and financed in a non-inflationary way, and that monetary policy would be focused on achieving and maintaining low levels of inflation. No specific fiscal rules were put in place but a medium-term expenditure framework was introduced in terms of which a *Medium Term Budget Policy Statement* is published in the second half of every fiscal year. This statement provides revised fiscal projections for the current year and projections for the following three fiscal years.

With the restructuring of the budget framework, the fiscal authorities have been able to reduce the budget deficit to levels around 2% of GDP, primarily as a result of significantly improved efficiency in tax collections, and containment of expenditure increases. The improvement in tax collections was so significant that despite the marked decline in the deficit, government expenditure nevertheless expanded moderately in real terms, and the fiscal authorities were able to partly eliminate bracket creep and reduce tax rates, particularly personal tax rates. The government debt/GDP ratio has declined to 47% and interest payments have declined to 18% of total government expenditure.

The Medium Term Budget Policy Statement

On 29 October 2002 the Minister of Finance presented the Medium Term Budget Policy Statement 2002 to the National Assembly. This set out the macroeconomic context and fiscal policy considerations for the 2003/04 Budget and medium-term policy decisions.

It was announced that the priorities underlying planning for the Medium Term Expenditure Framework (MTEF) include:

- extending social assistance, health and education programmes administered by provincial governments;
- enhancing investment in municipal infrastructure and basic services in support of rural development and urban renewal strategies;
- expanding capacity in the safety sector to prevent and combat crime, including improvement of the functioning of the courts system;
- restructuring of higher education, including support for institutional mergers and investment in infrastructure;
- accelerating the land reform and land restitution programmes;
- re-engineering services to citizens provided by the Department of Home Affairs;
- increasing support for the national research and development strategy to enhance growth and technology advancement; and
- a growing international role through increased regional representation, support for the African Union and New Partnership for Africa's Development.

As indicated in Table 1, the government envisages that fiscal prudence will prevail at all levels of the public sector. The national government deficit is projected to average 2.1% of GDP over the three-year period 2003/04-2005/06 and the consolidated general government's borrowing requirement to average 2.5% of GDP. Similarly, the public sector borrowing requirement is projected to be contained at around 2.5% of GDP in the medium term.

Table1
Fiscal projections

	Revised estimates 2002/03	Medium-term estimates		
		2003/04	2004/05	2005/06
In billions of rand				
National government				
<i>Revenue</i>	273	302	330	358
<i>Expenditure</i>	292	329	358	388
<i>Deficit before borrowing</i>	19	27	28	30
Consolidated general government borrowing requirement	18	31	32	36
Public sector borrowing requirement	18	31	33	38
As a percentage of GDP				
National government				
<i>Revenue</i>	24.3	24.4	24.4	24.4
<i>Expenditure</i>	26.0	26.6	26.5	26.5
<i>Deficit before borrowing</i>	1.6	2.2	2.1	2.0
Consolidated general government borrowing requirement	1.6	2.5	2.4	2.5
Public sector borrowing requirement	1.6	2.5	2.5	2.6

The tax reforms in recent years have resulted in a consolidated tax policy regime and robust growth in government revenue. It was indicated that this would allow for a further moderate real reduction in the personal income tax burden in 2003, concentrated on lower- and middle-income earners.

The MTEF provides for real non-interest spending to grow at an average rate of 4.7% per annum and a continuous decline in debt servicing costs relative to GDP, releasing resources for spending on public services. Increased spending on health services, with special reference to a programme addressing the HIV/AIDS epidemic, was also announced in the Statement.

The MTEF places renewed emphasis on social spending, enabling increases in social grants, services provision and funds available for education and health services. The government's continued commitment to social upliftment is also evident in the envisaged growth in capital spending. The provision made for investment in new infrastructure and the rehabilitation of existing infrastructure resulted in an additional 3 billion rand earmarked for capital expenditure in fiscal 2003/04 with the upward trend expected to continue over the medium term.

The medium-term expenditure programme has injected a greater degree of predictability into government expenditure plans. There is no pressure on the South African Reserve Bank to finance government deficits. The importance of seigniorage is also limited and does not appear to have changed much in recent years. Calculated as the ratio to real GDP of the annual sum of deflated monthly changes in the money base, seigniorage fluctuated between -0.1% and 1.1% in the 1990-2001 period.

The decline in government budget deficits has had implications for the public sector borrowing requirement, which has declined substantially to around 2.5%. At the same time, although the government remains cautious about financing the deficit through foreign borrowing, increased recourse has been made to this source of finance. The combined effect of increased foreign borrowing and lower deficits has resulted in less pressure on long-term bond rates and reduced the cost of government borrowing. In fact, the declining deficit and the moderately increased foreign borrowing have led to a shortage of paper in the market, which has reinforced the downward pressure on long-term rates. Despite the increased recourse to foreign borrowing, government foreign debt ratios remain relatively low. In 2001, government foreign debt was below 7% of GDP, and 14% of total government debt.

It is clear, therefore, that with a broad and liquid bond market and continued fiscal discipline, there has been no recourse to inflationary financing of fiscal deficits, and this situation is expected to be sustained.

Coordination of monetary and fiscal policies

Although there has been little conflict between monetary and fiscal policy, until recently there has not been much explicit coordination between the monetary and fiscal authorities with respect to countercyclical policies. Apart from regular meetings between the Minister of Finance and the Governor of the Reserve Bank to discuss issues of mutual concern, standing committees have recently been set up to formalise communication and contact between the two institutions. One standing committee has among its various responsibilities the monitoring of monetary and fiscal policies.

As noted above, until recently the focus of fiscal policy had been on fiscal restructuring and the stabilisation of public debt, ensuring that the budget deficit is sustainable and increasing the efficiency of tax administration. Since 2001, fiscal policy has become explicitly more growth-oriented, and the potential for conflict with monetary policy has increased (although such conflicts are not necessarily inevitable).

Monetary policy has also not been explicitly countercyclical. Inflation targeting was introduced in February 2000. The first target for 2002 was set at 3-6% for the consumer price index excluding mortgage interest cost. When targeting was introduced, this measure was at 7.8% and rising. It turned down towards the end of 2000 and dropped below 6% in September and October 2001. Following the sharp depreciation of the rand in late 2001, the inflation rate rose substantially away from the target range, and inflation in 2002 was well above the target. Monetary policy has therefore been constrained

by the objective of attaining the target and 2002 saw four successive interest rate increases of 100 basis points.

Fiscal policy over this period was tighter than expected in terms of the budget deficit, particularly in the fiscal year 2001/02. This gave room for manoeuvre in 2002 to reduce tax rates. However, this should not be seen as a specific countercyclical measure. Fiscal policy has not been explicitly countercyclical, and the tax reductions were aimed at compensating taxpayers for consistently higher than expected tax collections. If anything, the tax reductions in April 2002 worked against the monetary policy tightening of the Reserve Bank.

Conclusion

It is likely that the fiscal discipline that has been achieved in South Africa over the past few years will be maintained, despite the moderately expansionary growth-oriented focus introduced recently. Therefore, inflationary financing of the deficit is unlikely to pose a threat to monetary policy. Where the potential for tension emerges is that the relatively tight monetary policy required to meet the inflation targets could be undermined by a more expansionary orientation of fiscal policy. It is likely, however, that the recently introduced mechanisms for coordination will enable better management of this type of issue.

Thailand's recent public debt issues

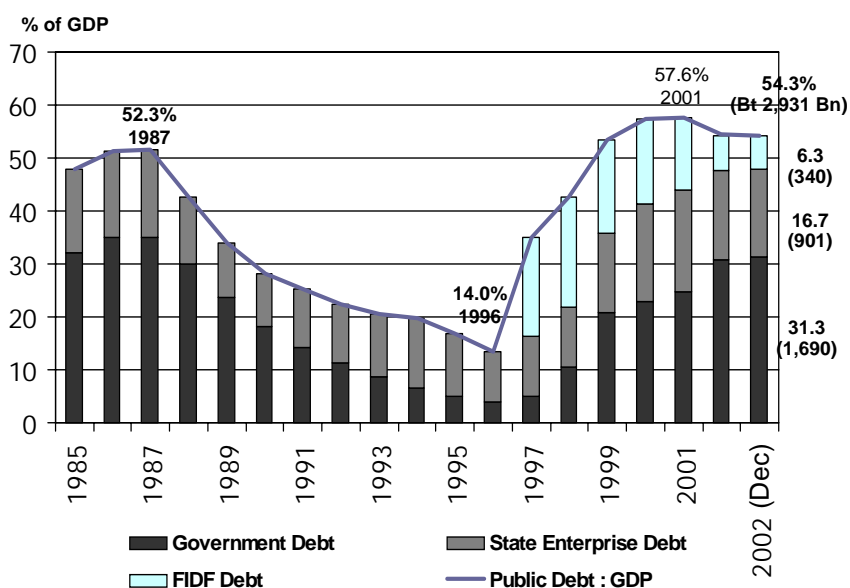
Yuwawan Rattakul¹

1. Introduction

Prior to the economic and financial crisis in 1997, the fiscal position of Thailand was in surplus for nine consecutive years. As a result, the public debt declined and bottomed at 14% of GDP in 1995/96. When the 1997 crisis occurred, the government absorbed substantial financial sector losses, coupled with conducting an expansionary fiscal policy. This resulted in a large increase in public debt to a peak at 58% of GDP in 2000/01. However, public debt gradually declined to 54% in December 2002 while the government cash deficit turned out better than planned in 2001/02 due to economic recovery and fiscal consolidation.

As the public debt is one of the country's medium-term risks, its increase over the past few years raises concerns over the country's economic stability. This paper assesses the current fiscal status and the sustainability of the Thai public debt over the medium term. The next section provides an overview of Thailand's public debt. Sections 3 and 4 address the public concerns over the costs of financial sector restructuring and also the government's initiatives. The analysis of public debt sustainability is presented in Section 5, and Section 6 concludes.

Graph 1
Thailand's public debt



Source: Public Debt Management Office (PDMO).

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2. Public debt

The public sector debt in Thailand consists of three components: government debt, non-financial public enterprise (NFPE) debt, and Financial Institutions Development Fund (FIDF) debt.²

Table 1 shows public debt as of December 2002. Debt issued by the government amounted to 31% of GDP, including domestic and external borrowings to finance government expenditure and some of the financial restructuring costs (Tier 1, Tier 2,³ and FIDF I and III). The NFPE debt, equivalent to 17% of GDP, comprises government-guaranteed and non-government-guaranteed debts, while the FIDF debt, amounting to 6% of GDP, consists of FIDF II and non-government-guaranteed liabilities. Thus, the level of public debt as of December 2002 was THB 2,931 billion or 54% of GDP.

The current public debt data already include debt incurred by the NFPE. This inclusion somewhat overstates the resources required to service the debt, ie the fiscal burden. This is because state enterprise debt will be part of the fiscal burden if and only if a state enterprise defaults. But not all state enterprises are risky. Table 2 shows 10, out of 59, state enterprises bore operational losses for three consecutive years or had negative net worth, and their debt accounted for only THB 115 billion or 13% of total state enterprise debt.

Table 1
Structure of public debt
In billions of baht; end-September

	1996	1997	2000	2002	2002 (Dec)
1 Government debt % of GDP	176 4.3	238 5.0	1,114 22.8	1,671 30.9	1,690 31.3
2 NFPE debt % of GDP	432 10.5	538 11.3	909 18.6	907 16.8	901 16.7
3 FIDF debt ¹ % of GDP	0 0.0	893 18.7	781 15.9	357 6.6	340 6.3
4 Public debt (1+2+3) % of GDP (Domestic : external)	608 14.8 (36 : 64)	1,669 35.0 (67 : 33)	2,804 57.3 (69 : 31)	2,935 54.4 (72 : 28)	2,931 54.3 (72 : 28)

¹ Since December 2002, the FIDF debt has consisted of the THB 112 billion of government-guaranteed bonds (FIDF II) and the non-guaranteed debt, which was THB 228 billion.

Sources: Public Debt Management Office (PDMO); Bank of Thailand.

Taking into consideration only debt incurred by loss-making state enterprises, the figure stood at THB 2.1 trillion (40% of GDP) compared with the public debt figure of THB 2.9 trillion (54% of GDP), which included the debts of all non-financial state enterprises.

² A more detailed explanation of the cost of financial sector restructuring is given in Section 3.

³ The government recapitalised the distressed financial institutions by issuing Tier 1 and Tier 2 bonds, for which, in return, it received preferred stocks and subordinated debentures, respectively.

Table 2

Non-financial public enterprises with net losses over three consecutive years

In millions of baht

NFPE	Net loss			Financial statement 2001			Debt
	1999	2000	2001	Assets	Liabilities	Equity	Dec 2002
1 State Railways of Thailand	4,153	4,685	3,824	66,020	43,306	22,714	47,585
2 Bangkok Mass Transit Authority	2,689	2,889	3,721	4,418	21,590	-17,171	16,093
3 Bangchak Petroleum	1,783	1,565	2,987	26,393	23,962	2,431	18,318
4 National Housing Authority	116	452	877	50,103	47,188	2,915	21,037
5 New Bangkok International Airport	94	147	57	17,980	3,571	14,409	11,222
6 Dairy Farming Promotion Organisation of Thailand	175	220	117	998	900	98	409
7 Zoological Park Organisation	12	30	42	1,459	8	1,450	
8 Botanical Garden Organisation	31	37	34	539	6	534	
9 Thai Tanning Organisation	18	11	90	361	416	56	50
10 Express Transportation Organisation of Thailand	87	43	118	315	1,505	-1,189	53
Total							114,767

Sources: NESDB (2002); PDMO.

3. The cost of financial sector restructuring

During the crisis, the FIDF⁴ carried out quasi-fiscal activities such as providing full guarantees to the depositors and creditors of closed financial institutions, recapitalising a number of financial institutions, and bearing the additional cost of the non-performing assets of financial institutions transferred to the Thai Assets Management Corporation.⁵ BOT (2002) estimated the FIDF's losses at THB 1.4 trillion.

A part of FIDF's losses has already been covered by the issuance of THB 500 billion worth of government bonds in 1998. In 2000, the FIDF issued FIDF bonds worth THB 112 billion with a government guarantee to compensate the losses. In 2002 the government passed an emergency decree to empower the Ministry of Finance to issue up to THB 780 billion of bonds (FIDF III) to cover the estimated non-guaranteed FIDF losses. Consequently, THB 305 billion of saving bonds were issued in September 2002 to repay part of the FIDF's liabilities in the money market.

By end-2002, THB 805 billion of the FIDF's losses were already fiscalised (as FIDF I and III) and are considered as government debt. The THB 112 billion of government-guaranteed bonds issued in 2000 were considered as the FIDF's debt, which was already included in the public debt. Out of the remaining THB 472 billion of losses (Table 3), only THB 228 billion (see footnote to Table 1) are realised as FIDF liabilities in the balance sheet as non-guaranteed debt, while the rest is expected future losses of the FIDF.

⁴ Established in 1985, the FIDF is a separate legal entity from the BOT. Its roles and responsibilities are, inter alia, to provide liquidity support as a last resort to illiquid financial institutions, and to guarantee payment to depositors and creditors.

⁵ The Thai Assets Management Corporation, established in 2001, is a legal person with the status of a state agency, rather than a state enterprise, under special laws designed to expedite the resolution of the NPL problem of both state-owned and private financial institutions and to enable transferred debtors to be in a position to continue their business operations.

Table 3
Estimated total FIDF losses
 In billions of baht

1. Depositor assistance programme	
56 closed finance companies	519
Other financial institutions	35
2. Loss from shares owned by FIDF	169
3. NPLs	651
Total losses from all programmes	1,374
Add interest expense	163
other expenses	3
Less FIDF premium and others	(139)
Total losses to be fiscalised	1,401
Fiscalisation by end-Dec 2002:	
<i>Compensated from FIDF I (THB 500bn of government bonds) in 1998</i>	(513)
<i>Compensated from FIDF II (THB 112bn of government-guaranteed FIDF bonds) in 2000</i>	(112)
<i>Compensated from FIDF III/1 (THB 305bn of government saving bonds) in 2002</i>	(305)
Remaining bonds to be issued	472

Source: Bank of Thailand.

In summary, in total THB 0.9 trillion of the estimated financial institutions restructuring cost of THB 1.4 trillion has already been compensated. For the remainder, more bonds will be issued in response to the FIDF's financing needs and market conditions. Payments of principal on the bonds issued for financing the FIDF losses will mostly come from the BOT's proceeds from operations, while the government will meet the interest payments.

4. Future fiscal position

To assess the future fiscal position of the Thai government, its recent initiatives concerning government expenditures and revenue are explored.

Expenditure side

There are certain government policies that either are perpetual or need future financing, but some are not yet recognised as government debt. In Thailand, a number of government initiatives could potentially generate additional demands on future budget, or could be possible contingent liabilities. These initiatives can be classified into three categories by the source of financing. These include:

1. *Initiatives to be financed directly from the budget.*
 - The **village fund**⁶ is a revolving fund facility, whereby each village or urban community receives a one-time transfer of THB 1 million to finance local investment and supplementary occupations.

⁶ This project was financed by the government guaranteed loan (already included in the public debt figure) from the Government Saving Bank, which the government would amortise the amount from the budget within eight years.

- The **universal health insurance** scheme aims to extend the provision of low-cost health care service to 45 million people (compared with the current 25 million).
 - The **education reform** aims to provide free basic education for 12 years (previously six), expand compulsory education to nine years (previously six), and improve the quality of teaching and the salaries of teaching staff.
 - **Decentralisation** involves the transfer of authority and responsibilities from central government to local government. This coincides with the Decentralisation Act 1999 regarding the transfer of revenue to ensure a ratio of local government revenue to central government revenue of not less than 20% in 2000/01 and 35% in 2005/06. The revenue transferred to local government would be deducted from the gross revenue and not be counted as part of the budget.
2. The *Specialised Financial Institutions (SFI)*: there are also government initiatives that are implemented through SFIs; some items could become contingent liabilities for the government, depending on the operations of the SFIs.
- **People's Bank** was established to improve access to banking facilities and resources for the poor. The Government Saving Bank (GSB) implemented this policy by granting small loans of THB 15,000 per first-time customer at a flat interest rate of 12%, with the repayment period not exceeding one year. The government will not guarantee these loans in order to ensure prudent lending practice.
 - **Other lending facilities**, such as housing lending by the GSB and loans to SMEs, were not guaranteed for the same reason.
3. *Shared financing*: some projects are implemented through SFIs or other government agencies, with partial financial support from the government budget, for example:
- The **debt burden relief programme** comprises two separate projects: debt suspension and debt burden reduction. Farmers who joined the debt suspension programme are granted a grace period of three years for both principal and interest payments. Farmers who joined the debt burden reduction programme still have to repay the loans, although with a 3 percentage point reduction in the interest rate for three years. The revenue foregone by the GSB through carrying out this programme will be compensated from the government budget.
 - The **housing project for the low-income group** was approved by the cabinet with a small appropriation from the budget. The government will support low-income households by offering up to THB 80,000 per unit per household and seek a low-cost financing source for the National Housing Authority (NHA). In building the housing units, the NHA will finance the project largely by borrowing from the SFIs with partial financial support from the government budget. In addition, the GSB will grant credits to people to build or buy a house outside the NHA housing project. Both projects aim to construct 1 million residential units within five years.
 - The **oil fund** was established as a cushion against the costs of rising domestic fuel prices stemming from volatility in the global oil market. The government implemented a temporary measure that capped retail petroleum prices for four months from February to May 2003. The cost of this scheme was covered by borrowing from the GSB, with the interest expense to be paid from the budget and the principal to be financed from the fund's gain from world oil prices being lower than the fixed prices.

Revenue side

Although there are many government initiatives that have raised concerns about future spending, the improved budgeting methods facilitate implementing fiscal policies without generating fiscal instability. While there are risks that government expenditures not fully recognised in the medium-term framework could increase, the following fiscal measures and initiatives would improve the fiscal position:

- **Tax reforms and modernisation.** The government is implementing measures to expand the tax base and enhance the efficiency of tax collection. In 2001/02, government revenue increased considerably as a result of the economic recovery and improved tax

administration, while expenditure decelerated in the second half of the fiscal year. This resulted in an actual cash deficit of 2.2% of GDP, lower than the planned 3.2%.

- **Focus on the strategic plan and strategy.** The implementation of a zero-based budgeting method accompanied by performance-based budgeting will lead to more efficient allocation and effective spending.
- **The corporatisation of Thailand's state enterprises.** This will increase the efficiency of the state enterprises and generate higher profits to shareholders.
- **Civil service reforms.** The policy will help the government to manage personnel expenses. Moreover, evaluation based on performance and outcome will help improve the efficiency of budget allocation.

5. Public debt sustainability

At the present level of public debt, the fiscal position remains stronger than planned. The government has improved fiscal flexibility by improving the efficiency of both revenues and expenditures. The government has increased revenue by raising tax collections and expanding the tax base. In 2001/02, the tax elasticity to GDP stood at 2.2 compared with 1.5 in 2000/01, reflecting substantially more efficient tax collection. The corporatisation of state-owned enterprises will further enhance efficiency and bring higher returns to the government. On the expenditure side, the government has improved the efficient allocation and effective spending by implementing the zero-based budgeting method accompanied with performance-based budgeting.

The BOT assessed the public debt sustainability from 2002/03 (which extends from October 2002 to September 2003) onwards, incorporating the FIDF debt resolution. The general conclusions drawn from this exercise indicate that Thai public debt remains sustainable even under relatively dire circumstances, some of which are assumed to maintain the VAT rate at the present level of 7%.

Table 4

Baseline scenario assumptions in the medium term (2002/03-08/09)

Nominal GDP growth	6.4%
Implied revenue elasticity	1.10
Interest rate per annum	6.4%
Disbursement rate	91%
Current expenditure growth	
– Wage and salary expenditure ¹	5.0%
– Non-interest and non-wage ²	4.8%
Capital expenditure growth ²	6.4%

¹ Fixed rate. ² Depending on GDP growth.

In the projection under the baseline assumptions, shown in Table 5, the public debt already peaked at 55% of GDP in 2001/02 and is on a declining trend. The large decline in the public debt in 2006/07 from 2005/06 is attributable to the repayment of the government debt that will become due in 2006/07 and the improvement in the FIDF debt level due to the FIDF's expected income in the next four years. The cash balance will turn positive in 2006/07.

Table 5

Projections of important ratios

In percentages

	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09
Debt service/budget	10.0	12.0	13.2	12.6	12.8	12.7	12.6	13.9
Public debt/GDP	55.1	53.0	51.2	51.7	50.3	44.2	39.5	35.4
Budget balance/GDP	-3.7	-3.0	-1.7	-1.1	-0.6	-0.3	0.0	0.0
Cash balance/GDP	-2.2	-0.5	-0.3	-0.3	-0.1	0.2	0.8	1.2
Primary Balance/GDP	-0.9	1.0	1.4	1.4	1.6	1.9	2.2	2.4
Revenue/GDP	15.9	16.5	16.6	16.4	16.5	16.6	16.7	16.8
Budget expenditure/GDP	19.2	17.6	17.0	17.5	17.1	16.9	16.7	16.8

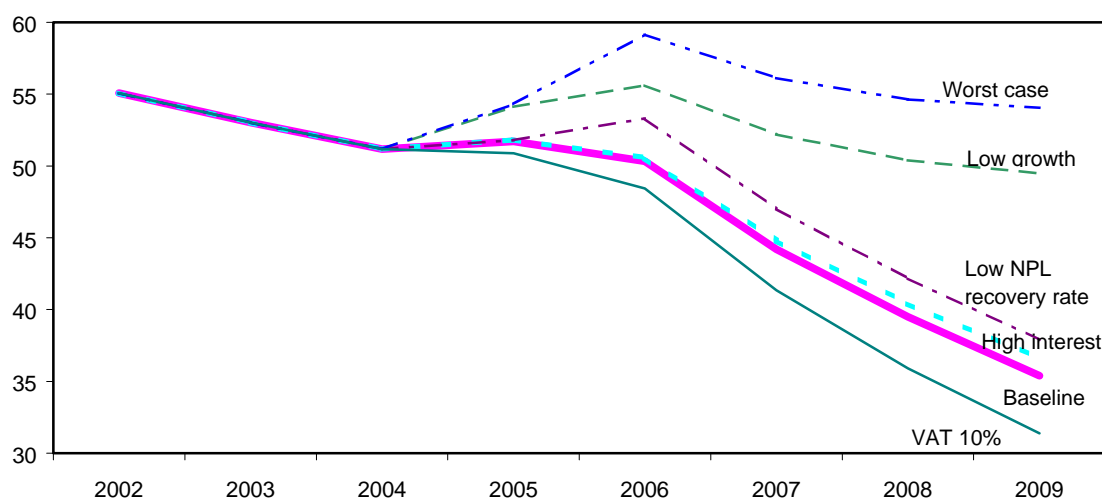
Besides the baseline scenario, the stress test analysis (see Annex for details), as shown in Graph 2, illustrates the sensitivity of debt dynamics under changes in the macroeconomic scenarios as follows:

1. Case A: baseline with the VAT rate adjustment from 7% to 10%.
2. Case B: low growth, ie long-run average growth rate (1970-2001) is reduced by one standard deviation.
3. Case C: higher interest rate from baseline by 3 percentage points.
4. Case D: lower NPL recovery rate from baseline by 20 percentage points.
5. Case E: worst case scenario, ie cases B to D are combined.

Graph 2

Stress test analysis: public debt/GDP

In percentages



Source: Calculation from stress test analysis in the Annex.

The scenarios above analyse public debt in the medium term under various macroeconomic assumptions and fiscal policy adjustment. Even in the worst case scenario - low growth and high interest rate coupled with low NPL recovery rate - the public debt is still moderately sustainable. Nevertheless, there remain other factors that could alter the debt path towards a more or less sustainable level.

Factors that contribute to debt sustainability include:

- high private saving rate
- high domestic liquidity and low interest rate environment
- moderate public external indebtedness
- exchange rate flexibility

Factors that detract from debt sustainability include:

- adverse economic scenarios other than those considered above
- contingent liabilities
- near-term gross financing requirement
- ongoing fiscal decentralisation process

Under the fiscal sustainability framework announced by the government, budget balance should be achieved within 2006/07. However, in order to ensure sufficient investment spending, the ratio of debt service to total budget will be curbed at 16%. The increasing ratio of debt service to the budget is attributed to debt repayment. This is supported by evidence that the rise in the budget expenditure in 2003/04 is partially due to the increase in debt service expenditure, 25% of which will be allocated to repayment of principal.⁷

Policy efforts that help contain debt/GDP even when it exceeds the ceiling of 60%:

- Introducing structural increases in revenues by expanding the tax base and increasing tax collection efficiency.
- Raising the NPL recovery rate through effective asset management and imposing a risk management framework in public and state-owned enterprises, speeding up the NPL resolution process, and strengthening the position of SFIs.
- Privatisation to increase profits and realise proceeds from the sale of assets. Note that, amongst state enterprises, large debtors tend to have more assets than liabilities, while those that are poor performers are small in size and have little debt.
- Spending cuts, including fiscal consolidation, three-year budgeting plans, and zero- and performance-based budgeting, all of which induce efficient management of government spending and eliminate inefficient programmes, together with a VAT increase to 10% when necessary.
- Ensuring transparency in budgetary operations.
- Building institutional capacity for public debt management, including bond market development.

Thai public debt is therefore sustainable in the medium term, even under unfavourable conditions. In the context of its target of fiscal sustainability, the government has committed to maintain a debt ratio of less than 60% of GDP, achieve budget balance within five years, and steer the debt service ratio to lower than 16%. This is achievable if the recent fiscal reform and consolidation continue.

6. Conclusion and implications for monetary policy

The economic and financial crisis in 1997 created a large public debt and has deteriorated the fiscal position ever since. The public debt rose rapidly from 14% of GDP in 1996 to 54% in November 2002, due to two major policies: financial sector restructuring and expansionary fiscal stances.

⁷ In Thailand, the principal repayment is included in the budget expenditure.

In addition to the increase caused by the cost of financial institution restructuring, the public debt also rose as a result of the expansionary fiscal measures aimed at stimulating the economy. Although there are certain government policies that impose a greater financing burden on the government, the outturn of the fiscal position in 2001/02, which was better than the planned deficit, reflected the government's goal of fiscal consolidation. Moreover, the positive outcome resulting from the current public sector reform may reduce the fiscal burden in the future.

The medium-term analysis suggests that the public debt is sustainable. However, the government could balance the budget within five years and keep the debt/GDP ratio below 60% of GDP if it prudently consolidates the budget. This could be achieved by eg (1) spending cuts through fiscal consolidation, multi-year budgeting plans, zero- and performance-based budgeting, together with a VAT increase to 10% when necessary; (2) the recent structural tax reform continuing to increase the tax base; (3) raising the asset recovery rate by speeding up the NPL resolution process and strengthening the position of SFIs; (4) privatisation in order to increase profits and realise proceeds from the sale of assets; and (5) building institutional capacity for public debt management.

An analysis of the potential downside risks suggests that even in an adverse scenario the debt dynamics would remain manageable and in the government's debt sustainability framework. These risks include: (1) the high sensitivity of debt dynamics to adverse economic conditions; (2) the costs of financial sector restructuring; (3) contingent liabilities; (4) the near-term gross financing requirement; and (5) the ongoing fiscal decentralisation process. Nevertheless, favourable conditions in the Thai economy that should reduce fiscal risks include: (1) the high private saving rate; (2) the high domestic liquidity and low interest rate environment; (3) moderate public external indebtedness; and (4) exchange rate flexibility. The worst case scenario (low nominal growth of 2.5%, a high interest rate of 9.4% and a low asset recovery rate of 15%) drives the debt ratio close to 60%. The government's commitment to fiscal consolidation, accompanied by thorough fiscal reform to increase efficiency in budget and debt management, and the acceleration of other tax reforms will lead to fiscal sustainability in the near future.

Monetary and fiscal policy coordination

The BOT closely coordinates with the government in the management of macroeconomic policy. In order to sustain long-term economic growth, the BOT adopted an inflation targeting framework in 2000, while fiscal policy became more expansionary. While the latter inevitably increased the public debt, the fiscal consolidation started in 2002/03 reflected the government's commitment to bring down the level of public debt in the medium term.

The Ministry of Finance and the Bank of Thailand have agreed to find a solution that is acceptable to all parties for dealing with the cost of financial sector restructuring. Any resolution must have a minimal impact on the government's fiscal position, and place a minimal burden on taxpayers in both the short and long term. The principal will be funded using the annual net profits from income earned from the Bank of Thailand's currency reserves and operations, rather than through an expansion of the monetary base. This guarantees independence of the central bank in its conduct of monetary policy. This independence will be further strengthened once the new BOT Act, which stipulates that price stability is an overriding objective, comes into effect.

While the BOT has full independence in setting monetary policy, the fiscal stance is taken into consideration in order to bring about an appropriate policy mix that facilitates sustained growth. Monetary policy plays an increasing role when fiscal policy is consolidated in order to address the problem of public debt in the medium term. The success of economic stabilisation is subject to a well defined monetary policy framework, even under the constraint of the high public debt.

Annex:
Stress test analysis of the
medium-term public debt projection

Table A1

Assumptions: Fiscal years 2003/04-08/09

	Baseline	Case A VAT 10%	Case B Low growth rate	Case C High interest rate	Case D Low NPL recovery rate	Case E Cases B to D combined
Real growth	4.8	4.8	2.0	4.8	4.8	2.0
Inflation	1.6	1.6	0.5	1.6	1.6	0.5
Interest rate	6.4	6.4	6.4	9.4	6.4	9.4
<i>(real interest rate)</i>	4.8	4.8	5.9	7.8	4.8	8.9
<i>(growth – real interest rate)</i>	0.0	0.0	–3.9	–3.0	0.0	–6.9
VAT (after Oct 2004)	7.0	10.0	7.0	7.0	7.0	7.0
NPL recovery rate	35.0	35.0	35.0	35.0	15.0	15.0

- **Baseline:** The public debt already peaked at 55% of GDP in 2001/02. The large decline in the public debt in 2006/07 reflects repayment of government debt due then and the improvement of the FIDF debt level due to the FIDF increase expected in the next four years. The cash balance will turn positive in 2006/07.
- **Case A:** With an increase in the VAT rate to 10%, and keeping all other variables at their baseline values, debt/GDP follows a lower path than baseline and is about 4 percentage points lower than baseline at the end of the projection period. The increase in tax revenue puts the cash balance and the budget balance in surplus earlier than baseline.
- **Case B:** A one standard deviation reduction in Thailand's long-run growth rate is consistent with a higher real interest rate, due to a lower inflation rate. The rise in the real interest rate coupled with the low growth rate causes debt/GDP to decrease to 50% at the end of the projection period from 56% at its peak in 2005/06. Primary balance to GDP is at a low of 0.9%, compared to the baseline of 2.5%. The cash balance and the budget balance remain in deficit throughout the projection period.
- **Case C:** The results of an increase in the interest rate by 3 percentage points are not significantly different from baseline as an increase in the interest rate will affect only the new debt. Debt/GDP is slightly higher at the end of the projection period, with a similar declining path. Thus the increase in borrowing costs from higher interest rates does not place too great a burden on public debt.
- **Case D:** A lower NPL recovery rate by 20 percentage points increases debt/GDP by 2 percentage points above baseline at the end of the projection period, although debt/GDP still follows a downward trend. Despite the lower NPL recovery rate, the cash balance and the budget balance are in surplus in the same period as in the baseline scenario.
- **Case E:** Combining cases B to D as the worst case scenario, debt/GDP reaches a peak of 59% and declines to 54% at the end of the projection period. Although the debt/GDP path is not explosive, it is higher than all the cases considered so far and declines with the rate of acceleration less than others. Even under a dire circumstance, the government debt ratio at its peak is lower than the government ceiling of 60% as a result of the fast fiscal consolidation that will provide the cushion for unfavourable economic condition.

Table A2

Public debt stress test analysis

In percentages

	BOT Baseline	Case A VAT 10%	Case B Low growth rate	Case C High interest rate	Case D Low NPL recovery rate	Case E Cases B to D combined
Debt/GDP, September 2009	35.4	31.4	49.5	36.6	37.9	54.0
Peak debt/GDP	55.1	55.1	55.6	55.9	55.1	59.2
Change in debt/GDP, (2001/02 to 2008/09)	-19.7	-23.7	-5.6	-18.5	-17.2	-1.1
Primary balance/GDP (average 2002/03-08/09)	1.7	2.5	0.9	1.7	1.7	0.9
Budget balance/GDP (year of surplus)	2008	2005	>2009	2008	2008	>2009
Cash balance/GDP (year of surplus)	2007	2005	>2009	2008	2007	>2009

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Some issues in fiscal policy and central banking: the case of Turkey

Şükrü Binay

1. Introduction

Restricting the scope of discretion that policymakers can exercise has been much debated recently. With respect to monetary policy, the debate has led to the almost universally accepted proposition that central banks should be independent in monetary policy implementation. In the case of fiscal policy, the debate has gained pace only recently and has not resulted yet in an agreement on desirable mechanisms or institutional changes. A discretionary fiscal policy may alleviate business cycle fluctuations through expansionary public spending or tax cuts in recessions or through contractionary policy in expansions. But poorly implemented discretionary fiscal policy can affect macroeconomic stability adversely.

Whether fiscal policy is rules-based or discretionary, a key requirement for its effectiveness is correct and timely data on the fiscal positions of the various parts of the public sector. Measuring the fiscal stance correctly requires a comprehensive view of the government's fiscal activities and the accounts in which these activities are recorded. Account should be taken of disguised public liabilities, contingent liabilities such as umbrella guarantees for various loans and insurance schemes, quasi-fiscal activities and other liabilities. In most emerging countries, published budget data do not cover some important expenditures and budget laws cover only a portion of government expenditures, allowing politicians substantial scope for discretionary spending outside the budget.

Over the last decade, Turkey's economic performance has been weakened by fiscal inadequacies, including insufficient transparency and accountability of operations, a fragile financial system and short-lived stabilisation attempts, some of which ended in crisis. The lack of strong governments prevented the implementation of structural measures, which in turn gave rise to myopic policies. In the 1990s, Turkey attempted to stabilise the economy with monetary programmes (1990 and 1992), two IMF standby agreements (1994, 1999) and an IMF Staff Monitoring Programme (1998). However, both internal and external factors led to the failure of these efforts: the Gulf crisis together with the general election in 1991 led to the abandonment of the first monetary programme. The Central Bank of the Republic of Turkey (CBRT) could not implement the monetary programme of 1992 as the public sector was engaging in heavy domestic borrowing and using cash advances from the CBRT up to its limit. The unsustainable nature of fiscal policy and the external deficit triggered the crisis in early 1994. Following the crisis, the government announced a stabilisation programme and a standby arrangement was approved by the IMF. However, the government was not strongly behind the programme and the standby agreement ended in 1995.

Although the Asian crisis in 1997 had limited effects on Turkey, investor perceptions to emerging markets changed and the subsequent crises in Russia and Brazil eroded confidence, even though Turkey was trying to reduce inflation and stabilise the fiscal balances. In early 1998, the Turkish government embarked on a disinflation programme centred on fiscal adjustment, structural reforms and tight incomes policies. Significant progress was achieved in 1998, with the primary surplus of the central government rising to over 4% of GNP (excluding privatisation receipts). However, the fallout from the Russian crisis in mid-1998, political uncertainties, and two devastating earthquakes in August and October 1999 hampered progress. Moreover, some fiscal relaxation in the run-up to the elections and weaker economic growth led to a reduction in the primary surplus in the first half of 1999.

In a nutshell, inflation has resulted in high and unstable nominal and real interest rates, which reduced confidence in the Turkish lira. Financing the budget deficit through domestic borrowing has put further pressure on interest rates. As Boratav and Yeldan (2001) put it, "the public sector is trapped in a short term roll of domestic debt, a phenomenon characterised as *Ponzi-financing* in the fiscal economics literature. This clearly unsustainable process contributed to the loss of confidence in the 1990s". Banks replaced commercial lending with lending to government, which is very profitable for banks but impedes the effectiveness of the credit channel. When the government had to pay real interest rates of 20% or more on its debt, private capital moved away from job-creating activities into financial

investment. Moreover, high real interest rates based on a weak fiscal primary position have pushed public finances further along an unsustainable path.

Finally, in December 1999, with the support of the IMF, Turkey embarked on an ambitious three-year exchange rate based stabilisation programme aiming at decreasing inflation to single digits by end-2002. Ensuring effective fiscal management is the key to any country's stabilisation and disinflation programme when there are unsustainable fiscal balances. To this end, the programme was designed to strengthen budget preparation, execution and control, and to enhance transparency and accountability of fiscal operations. Accordingly, broadening the budget coverage through closure of extra-budgetary funds was the most striking aspect of the programme. In addition, the structural reform aspects aimed at medium-term sustainability, fiscal adjustment measures, lowering the burden of interest payments, improving transparency and reducing the contingent liabilities of the public sector.

However, Turkey has experienced two severe crises (November 2000 and February 2001) and redesigned its stabilisation programme with stronger fiscal adjustments to measurement, transparency and governance under the constraint of the need for an extensive restructuring in the banking sector.

The remainder of this paper analyses the interaction between monetary and fiscal policies in the Turkish economy over the last decade with special emphasis on the financial crises in 2000 and 2001. The second section begins with a review of fiscal policy rules by giving country experiences. The third section covers the interaction between monetary and fiscal policies, particularly stressing the need for policy coordination in the overall policy objectives and in crisis management. The fourth section explains the dynamics of the Turkish economy in the 1990s in the framework of fiscal balances and monetary policy. This section discusses the disinflation programme of 1999 and the following crises briefly. The fifth section emphasises the immediate policy responses of the CBRT and the Treasury to the crises and the following section the implications for the domestic debt stock. In this sense, the coordination between the CBRT and the Treasury, the restructuring of the banking sector and its costs to the CBRT and domestic debt stock are underlined.

2. The role of fiscal policy rules

The use of rules-based macroeconomic policies is becoming popular in both developed and emerging economies. The major aim of fiscal policy rules is to establish discipline and credibility in the conduct of fiscal policies by removing discretionary intervention. Governments with a good reputation for fiscal prudence do not need rules. However, in other countries fiscal rules can provide a useful policy framework, contributing to stability and growth, if they are well designed at national and sub-national levels of government, combining simplicity, flexibility and growth-oriented criteria. They must be implemented in a transparent manner with the support of an appropriate institutional infrastructure and following careful preparation.

Fiscal policy rules differ in both design and implementation; see Kopits (2001). While Australia, Canada, New Zealand and the United Kingdom attach primary importance to transparency, the European Union, Argentina, Brazil, Colombia, Peru and Switzerland, as well as India's proposals, rely on numerical reference values for performance indicators. In federal systems with strong sub-national autonomy, the rules are sometimes assumed only by the central government (eg Argentina, India's proposals); in other federal systems, with concerns about potential bailouts and external spillovers of fiscal misbehaviour across jurisdictions, the rules are imposed on each government level in a coordinated way (eg Brazil, European Union).

The coverage and performance indicators of fiscal performance rules also vary among countries. For instance, in the European Union and New Zealand, budget rules cover general government; in Argentina and Peru, budget rules cover national government; and in Brazil and Germany, budget rules cover both national and sub-national governments. Furthermore, in Brazil, Canada, Switzerland and the United States, limits are put on the current balance as a proportion to GDP. In Argentina, the European Union and Peru, limits are put on the overall balance as a proportion to GDP.

In Turkey, particularly since the second half of the 1990s, fiscal policy has aimed at bringing the domestic debt stock under control by creating a sizeable primary surplus, increasing privatisation revenues and financing through external debt.

Until Turkey's recent disinflation programmes, fiscal policy was implemented in a more discretionary way. Although, every year, the government introduced consolidated budget figures consistent with the targeted macro framework, the discipline of the budget weakened through "supplementary budgets" as the actual expenditures were usually higher than planned. Furthermore, since the coverage of the consolidated budget was limited, a considerable portion of the expenditures of the extra-budgetary funds, municipalities and state economic enterprises were not reflected in the budget, though they worsened the public finances. Also, expenditures related to agricultural subsidies were carried out outside the budget process through public banks, resulting in the so-called "duty losses". This lack of transparency led to further deterioration in fiscal discipline and snowballing domestic debt dynamics.

The unsustainable nature of domestic debt following the 1994 crisis forced the policymakers to keep the primary balance in surplus. In this context, the "primary surplus" became a significant indicator of fiscal effort, rather than just a signal of commitment to trim down high interest payments and establish discipline in non-interest expenditures. Therefore, in order to strengthen the consolidated public stance permanently and create a sustainable debt structure, the disinflation programmes - in the late 1990s as well as the current one - have put limits on four different fiscal elements: the "primary balance of the consolidated central government", "the overall and primary balance of the consolidated government sector" and the "primary balance of the public sector".¹

3. The interaction between monetary and fiscal policies

Fiscal policy affects the success of monetary policy in various ways: through its impact on general confidence in monetary policy, through short-run effects on demand and also through modifying the long-term conditions for economic growth and low inflation.

An unsustainable fiscal policy raises doubts about monetary policy's overall focus on low inflation and stable growth. Dahan (1998) argues that a high level of public debt, a large budget deficit and a large share of short-term bonds are conditions under which it is more difficult to gain enough credibility to lower inflation by monetary measures alone. As noted in Section 4, this unsustainable situation in the 1990s necessitated a programme with strong fiscal fundamentals as well as monetary measures.

Changes in fiscal policy also affect monetary policy through their direct impact on demand. An adjustment of tax level affects company profits or disposable income and thereby economic decisions such as investment and consumption. This makes fiscal policy important when assessing economic activity and future inflationary pressure.

Another aspect of fiscal policy's interaction with inflation is related to fiscal effects on potential output. Lower corporate taxes may lead to more companies being established and in turn raise potential output. Similarly, lower tax on labour may generate an increased supply of labour and also influence wage formation. These are examples of the numerous ways in which changes in tax and expenditure systems are likely to modify economic opportunities and promote conditions for better growth performance without generating price pressure.

Although fiscal sustainability is a widely used term, there is no consensus on its definition. A sound fiscal policy may differ from one country to another, depending on the main characteristics of the economy such as the level of development; the position within the business cycle; whether there is inflation or deflation; and whether its external position is viable. In countries with high inflation such as Turkey, the operational deficit is a better indicator of fiscal stance. However, traditionally, the primary surplus and budget deficit are more closely monitored by the authorities and markets. In this sense, "financing strategy of the budget", "structure of debt stock" and "distribution of debt stock according to buyers" determine the monetary conditions.

On the other hand, the degree of monetary policy credibility is also an important factor that determines the fiscal position. As credible monetary policy implies an independent central bank, it prevents the monetisation of government debt to a certain degree, which means that fiscal deficit is more

¹ The "consolidated government sector" includes the consolidated central government, extra-budgetary funds, local governments and non-financial state enterprises. The "public sector" adds the central bank and "duty losses" of state banks.

endogenous. Considering the Turkish case, the Treasury relied heavily on cash advances from the CBRT in 1990-94. Afterwards, with some practical arrangements, the Treasury's access to central bank sources was gradually lowered. In 1997, the CBRT and the Treasury engaged in a protocol that limited the CBRT's deficit financing further, and transferred to the CBRT the power and responsibility for setting short-term interest rates. An amended Central Bank Law in May 2001 made the CBRT autonomous in pursuing its primary objective of maintaining price stability as well as determining the monetary policy tools to achieve this goal. The new law prohibited direct lending from the CBRT to the Treasury and CBRT's purchases of government securities in the primary market. The transparency and accountability in preparation and implementation of monetary policy were also enhanced.

Another important aspect of interaction between fiscal and monetary policy is the need for a high degree of coordination in response to financial crises. The recent literature illustrates that the crises in the last decade were more global and potentially more damaging. Accordingly, well designed crisis management strategy is now one of the most challenging policy issues. Crisis management requires extremely strong coordination and quick responses in both fiscal and monetary policy and adjustment in external financing. In line with this argument, timely adjustments in the monetary policymaking process after the float in 2001 and restructuring operations in the banking sector, together with the overperformance in the government's primary balance, contributed significantly to Turkey's recent efforts to manage the crisis. Although the banking restructuring and the subsequent liquidity operation were at the expense of the CBRT's balance sheet and increased domestic debt stock, the Treasury would not have been able to roll over domestic debt without this well coordinated operation.

4. The general framework of fiscal and monetary policy in the 1990s

During the 1990s, developments in the Turkish economy were characterised by volatile economic growth, high inflation, unsustainable domestic debt dynamics and a fragile financial sector. As in many other emerging markets with open capital accounts, interest rates and exchange rates went through large swings associated with boom-bust cycles in international capital flows. This boom and bust cycle resulted in rising volatility of the growth rate; see Boratav and Yeldan (2001). Between 1990 and 1999, the economic growth rate averaged 3.9%, although real GDP contracted in 1991 due to the Gulf War, in 1994 due to the economic crisis, and in 1999 due to earthquakes.

Public debt developments and fiscal policies

In 1989, Turkey liberalised its capital account in an environment of macro-imbalances accompanied by a lack of prudential regulation and supervision in the banking system. The priority of the government was sustaining high economic growth at a time of increasing fiscal deficits.

In 1990, the CBRT announced a monetary programme in which it tried to control the credit extended to the public sector. The programme included an implicit inflation target. The lira was expected to appreciate under the programme as the aim of the CBRT was to reduce the share of lira-denominated items on its balance sheet. Meanwhile, the Treasury and the CBRT agreed on restricting cash advances to the Treasury. However, the volatility in financial markets due to the Gulf War in 1990, together with the early elections in 1991, forced a change in the CBRT's credit policy to the Treasury. This amended policy remained dominant until 1994.

Under this framework, foreign borrowing and cash advances from the CBRT were used heavily to finance the public deficits. The Turkish banking sector borrowed from foreign markets and sold these short-term funds to the Treasury, taking advantage of uncovered interest rate parity. Although these inflows aided the economy, macroeconomic management became difficult owing to the volatile nature of such inflows. "The arbitrage seeking inflows and outflows started to constitute a rising share within capital movements and contributed to rising external and domestic instability", as Boratav and Yeldan (2001) put it.

This way of financing fiscal deficits had important implications for the level of external indebtedness, future interest payments and monetary conditions. The ratio of short-term foreign debt to GNP doubled to 10% during 1989-93. Due to the high financing needs of the Treasury, the CBRT refrained from sterilising the capital flows. The major source of growth was the monetary expansion of the CBRT by increasing credit to the public sector without sterilising the capital flows accompanied by the high real

wages. The appreciation of the lira in 1989-93 eased inflation somewhat. However, the CBRT was unable to control its balance sheet during these years due to its important role in financing the Treasury; see Celasun et al (1999). Moreover, appreciation of the lira and the faster pace of economic growth led to a deterioration of the current account. As a result, a period of high economic growth and non-accelerating but high (50-60%) inflation ensued. This growth was implicitly financed by short-term external borrowing at the expense of higher interest rates. Public balances further deteriorated due to the increasingly high interest payments, which reflected the short-term nature of domestic debt instruments and very high real rates necessary to attract external funds and induce residents to shift portfolios towards lira-denominated assets; see Ekinçi (1998).

In the last months of 1993, the government attempted to push down artificially the cost of domestic borrowing, by cancelling Treasury auctions, despite the deterioration in the fiscal stance. The Treasury thus had to rely heavily on central bank resources, which created excess liquidity in the market, and put further pressure on exchange rates. The margin between the market and the official exchange rates therefore started to widen. In early 1994, the rating agencies downgraded Turkish sovereign debt. This triggered the crisis. The unsustainable trend of short-term external borrowing finally came to a halt. In 1994, real output contracted by over 5% and inflation rose to triple digit rates.

A standby agreement with the IMF, the first in 10 years, set a ceiling on “net domestic assets” and a floor under “net international reserves”, together with an unannounced predetermined monthly exchange rate path. Meanwhile, the CBRT focused its monetary policy on achieving stability in foreign exchange markets rather than achieving price stability. The sterilised intervention policy of the CBRT led to a surge in reserves that enhanced the Bank’s resistance to domestic and foreign speculative attacks after 1995. In addition, the exchange rate policy was conducted in line with the forecasted monthly inflation rates, which ensured not only exchange rate stability but also competitiveness in the external sector and a sustainable current account. The use of cash advances from the CBRT decreased as a result of the attempts by the monetary authority to improve fiscal discipline.²

On the other hand, as the return to external markets became more difficult, the use of domestic markets increased. High public deficits, external net repayer position of the public sector, high and volatile inflation, the shallow domestic financial market and sterilised intervention policies of the CBRT led to sustained high real interest rates and a shortening maturity profile of domestic debt instruments. The recovery after the crisis was nevertheless quick as the growth rate increased to 6.6% in 1995. This was possible because domestic borrowing resumed in the third quarter of 1994. Owing to very high interest rates, new flows of short-term funds also became available; see Ekinçi (1998).

To sum up, while in the first half of the 1990s the total debt stock increased due to high primary deficits of the public sector, in the second half it increased due to high real interest rates. The major reasons for primary budget deficits until 1994 were the persistent problems in the taxation system, backward indexation in incomes policies, the state economic enterprises’ weakened financial structure (due to government attempts to control inflation through holding down their prices), extra transfers to close the financing gap of the social security institutions and subsidies to the agricultural sector. Since 1994, the nature and maturity structure of domestic debt have also changed. During and after the 1994 financial crisis, the Treasury issued mostly short-term securities.

Table 1 shows the differing interaction between the monetary and fiscal stance during the 1990s. Between 1990 and 1993, the average ratio of the budget deficit to GNP was less than 5% and it was accompanied by sustained primary deficits, which were financed by monetary expansion through domestic credit creation. In the second half, the financing need of the budget increased and monetary policy was conducted through reserve accumulation.

Inflation and exchange rate developments

During the 1990s, the inflation rate averaged 78%. The chronically high inflation was due to the methods of financing fiscal deficits, backward-looking inflation expectations, both direct and indirect effects of public price setting policy and indexation mechanisms in the labour and financial markets.

² These cash advances were brought under control with the protocol between the CBRT and the Treasury in 1997.

Table 1

Consolidated budget financing and government debt

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Consolidated budget (% of GNP)												
Revenues	13.9	15.3	15.8	17.6	19.2	17.7	18.0	19.6	22.2	24.2	26.9	28.9
Expenditures	17.3	20.5	20.1	24.3	23.1	21.8	26.3	27.2	29.1	35.9	37.1	44.8
Interest payments	3.5	3.8	3.7	5.8	7.7	7.3	9.9	7.7	11.5	13.7	16.3	22.9
Primary balance	0.2	-1.5	-0.6	-0.9	3.8	3.3	1.7	0.1	4.6	2.0	6.0	7.0
Budget balance	-3.3	-5.3	-4.3	-6.7	-3.9	-4.0	-8.3	-7.6	-6.9	-11.7	-10.2	-15.9
Financing (% of GNP)												
Foreign debt	0.0	0.3	0.4	1.1	-1.7	-1.0	-0.9	-1.5	-1.9	0.6	2.1	-2.5
Domestic debt	2.5	2.4	3.6	2.6	4.5	3.6	7.1	8.5	8.6	12.4	7.4	12.9
CBRT advances	0.1	1.7	1.6	2.7	1.3	1.2	0.0	-	-	-	-	-
Foreign debt (billions of US dollars)												
Total	49.0	50.5	55.6	67.4	65.6	73.3	79.2	84.3	96.4	103.0	119.7	115.2
Short-term	9.5	9.1	12.7	18.6	11.3	15.7	17.0	17.7	20.8	22.9	28.3	16.2
% of total	19.4	18.1	22.8	27.5	17.2	21.4	21.5	21.0	21.6	22.2	23.6	14.1
Maturity of domestic borrowing												
Average (days)	236	211	211	257	119	206	195	349	233	479	410	148

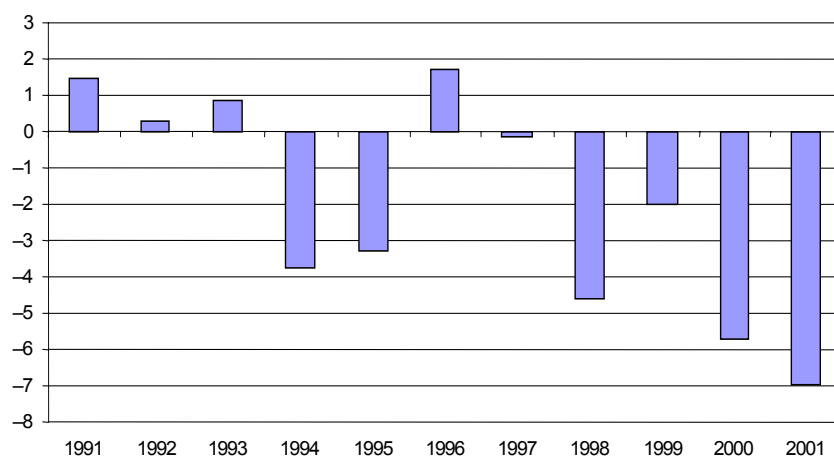
Source: Ministry of Finance.

Specifically, the postponement of price adjustments in public goods and services to post-election periods led to inflation exhibiting a cyclical pattern around elections. Between 1990 and 1999, the ratio of the budget deficit to GNP increased to 8.3% from 4.8%, and the ratio of total domestic debt to GNP increased to 29% from 14%. Moreover, the primary budget deficit, which averaged 0.8% to GNP during 1990-94, turned into an average surplus of 2.8% during 1995-2000 (Graph 1).

The foremost priority of economic policy in such a situation was to attain a lasting reduction in inflation through a comprehensive programme comprising fiscal discipline, structural reforms and privatisation. At the beginning of 1998, the government launched an IMF Staff-Monitored Programme, the first that set targets on fiscal balances (specifically, the primary surplus). However, the overall economic programme was not comprehensive enough to cover the needed structural reforms. The programme achieved some improvements in inflation and fiscal imbalances but could not relieve pressures on interest rates due to both the external and domestic shocks that had hit the economy. This gave rise to a surge in domestic debt, which in turn worsened macroeconomic imbalances further.

Against this background, a three-year comprehensive disinflation programme was initiated in conjunction with the IMF standby agreement in December 1999. The fundamental goals were to reduce inflation to single digits by end-2002, to provide fiscal discipline (Box 1), and to maintain debt sustainability over the medium term. The programme was expected to create a favourable environment to encourage economic growth. On the monetary side, the programme put in place a preannounced crawling peg regime with an exit strategy and tight monetary targets. However, during the implementation of the programme these strict targets to a certain extent gained greater importance in the eyes of market participants than the final objectives of low inflation and sustainable economic growth.

Graph 1
Primary balance/GNP
 In percentages



Source: Treasury.

Box 1

Fiscal measures in the disinflation programme in 2000

The key fiscal goal for 2000 was to raise the primary surplus of the public sector to a level sufficient to stabilise the net public debt/GNP ratio over the medium term. Sizeable privatisation receipts were also needed to limit the growth of the public debt ratio. The proposed level of the primary surplus was expected to affect inflation by alleviating the pressures on the currency and reducing real interest rates. This would, in turn, ease the debt dynamics and ensure the rollover of debt stock.

Attainment of the fiscal goals was to be monitored through a set of performance criteria and indicative targets:

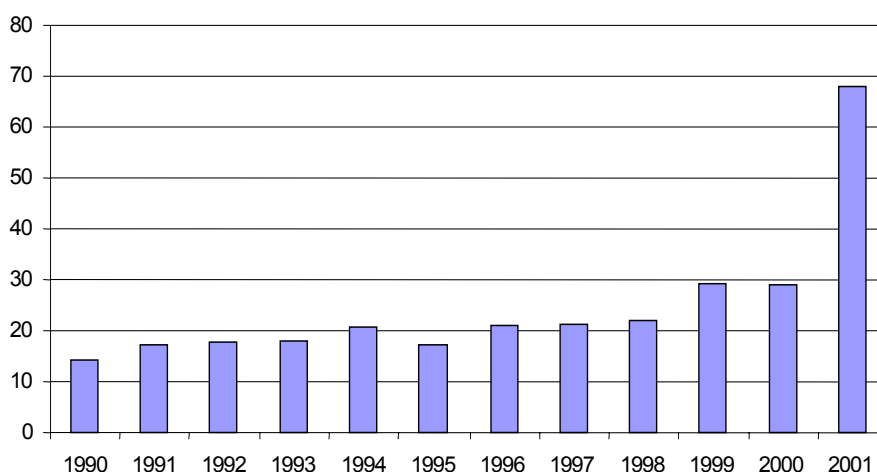
- A quarterly performance criterion was set on the primary surplus of the consolidated government sector (which includes the consolidated central budget, four key extra-budgetary funds, eight state economic enterprises, the unemployment insurance fund and the three social security institutions).
- As privatisation receipts would play a key role, a separate annual performance criterion was set on the primary surplus inclusive of privatisation receipts, with quarterly indicative targets.
- An indicative ceiling was set on the overall deficit of the consolidated government sector, excluding privatisation receipts, so as to monitor the developments not only of the primary balance, but also of interest payments.

The implementation of the programme initially reduced uncertainty in exchange rates and lowered the risk premium, leading to a decrease in nominal interest rates. This increased the volume of capital inflows and in turn interest rates fell further. By decreasing the burden of interest payments, this provided some relief in the budget. The primary surplus target was achieved and some progress made in curbing inflation. Due to reduced exchange rate uncertainty, the Treasury concentrated on issuing long-term, fixed rate bonds. Furthermore, in order to take advantage of disinflation, floating rate notes were issued and indexed to three-month T-bill interest rates. After the 2001 crisis, a considerable part of the domestic debt became indexed.

Over time, however, market confidence in the programme wavered as the developments in the Turkish economy were similar to those in other economies with similar programmes. These developments included a fast decrease in interest rates at the initial stage, initial improvement in economic activity followed by a slowdown, slow convergence of the inflation rate to the preannounced exchange rate, real appreciation of the domestic currency, erosion in trade and the current account balance. Weakened confidence in the disinflation programme led to large capital outflows and created liquidity problems in the domestic financial sector in November 2000 and February 2001. The problems were so pronounced that the government was forced to abandon the crawling peg.

The major difference between the 2001 crisis and previous ones was the huge banking bailout cost, which worsened the debt dynamics further. Together with state bank operations, the financing of bailout costs led to a diversification in the structure of the debt stock. On the one hand, the Treasury preferred to minimise its rollover risk. On the other hand, the buyers of the long-term bonds were mostly private banks. The share of the CBRT in purchases of new government bond issues thus decreased between 1995 and 2001 due to the CBRT's attempts to support fiscal discipline. However, in the context of the "liquidity operation of state and Saving Deposit Insurance Fund (SDIF) banks", the CBRT conducted direct buying operations from these banks.

Graph 2
Total domestic debt stock/GNP
 In percentages



Source: Treasury.

5. Fiscal and monetary developments after the 2000-01 financial crises

Following the 2000 and 2001 "two-tier" crises, the challenge has been to stabilise the economy; in particular, the two interrelated issues of the fragility of the banking sector and sustainability of public debt needed to be resolved. After floating the exchange rate, the CBRT's main aim was preventing imbalances in the payment system and regaining stability in the financial markets, as well as continuing the disinflation.

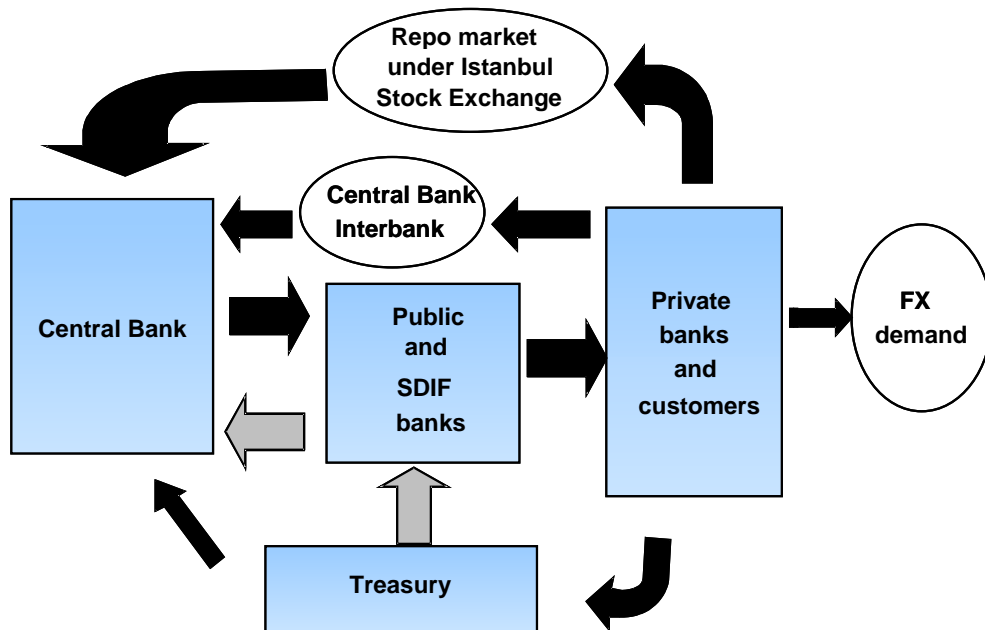
The new Transition Programme for Strengthening the Turkish Economy was initiated in May 2001. Its priorities were enabling a gradual return of confidence, alleviating financial market distress, and ensuring a healthy banking system and a continuing disinflation path. It also gave priority to banking sector reform as the crises had further weakened an already fragile financial sector, and the banks, which constituted the main portion of the financial sector, faced serious problems:

- sharp increase in funding costs owing to a surge in interest rates and maturity mismatch;
- capital losses due to declines in the value of government security holdings; and
- capital losses from high open positions, as a result of the rapid depreciation of the lira.

The main pillars of the restructuring were threefold: the removal of the destabilising effects introduced by the public sector banks; the resolution of SDIF banks; and the strengthening of the financial structure of the private banks, which had weakened significantly during the crises. The most important developments determining the stance of monetary policy were the financial restructuring of state banks, the resolution of SDIF banks, and the extent of liquidity operations aimed at removing the pressure exerted by these banks, especially on the overnight markets (see Box 2).

Liquidity support operation for public and SDIF Banks

At the outset of the liquidity support operation, the Treasury issued government debt securities equivalent to 28% of GNP to cover public banks' duty losses and SDIF banks' negative capital balances. These special issue government bonds securitised TRL 26 quadrillion in duty losses of state banks. On the other hand, for the rehabilitation of SDIF banks, the Treasury also issued TRL 22 quadrillion of a special type of government bond. Meanwhile, to complement this process, the CBRT provided adequate liquidity in exchange for this paper so as to reduce the excessive overnight borrowings of state and SDIF banks from other banks and non-bank institutions. Accordingly, by the end of May 2001 state and SDIF banks eliminated their overnight borrowings amounting to TRL 14 quadrillion (9% of GNP), of which TRL 9 quadrillion was by state banks and the remainder by SDIF banks. From June 2001, they were no longer allowed to engage in overnight borrowing or accept overnight deposits. Through the elimination of short-term liabilities, the state banks started to determine deposit rates in line with the market and manage their loan portfolios more efficiently.



As a result of this operation, state and SDIF banks' pressure on interest rates was reduced at the expense of raising the net domestic assets of the CBRT to very high levels. The CBRT's domestic debt portfolio increased from TRL 1.5 quadrillion (8% of its assets) at the beginning of 2001 to TRL 26 quadrillion (45% of assets) by September, and to TRL 33 quadrillion (55% of total assets) as of end-2001 (Graph 3). Meanwhile, the use of IMF credit by the Treasury contributed to the excess liquidity in the market in the sense that the Treasury used a large portion of the IMF financing for lira payments in the domestic markets. Consequently, a vast amount of liquidity was injected into the markets. In order to limit the possible inflationary effect, the CBRT mopped up the liquidity via reverse repo transactions, borrowing transactions in the interbank market, and foreign exchange sales.

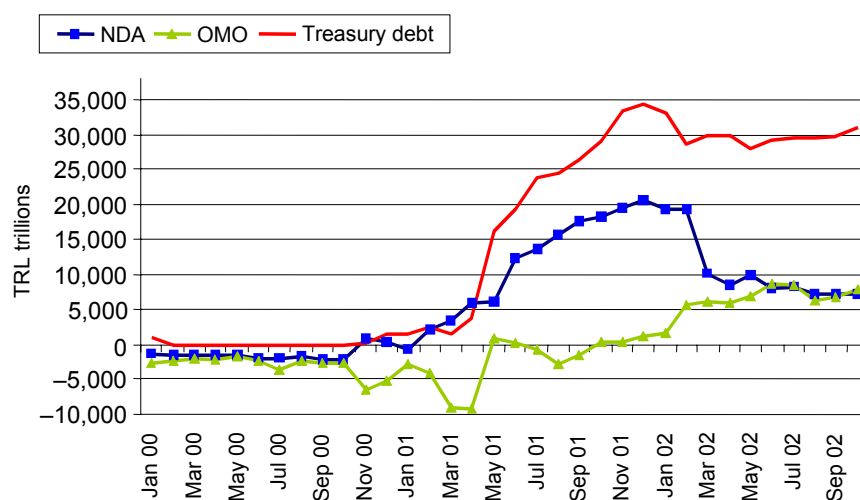
After the crisis in 2001, the size and composition of CBRT's balance sheet was determined by banking restructuring operations and the Treasury's use of external financing through the central bank. In other words, the CBRT's role in crisis management had led to a significant deterioration in its balance sheet. As can be seen from Graph 4, net domestic assets (NDA) had increased significantly compared to pre-crisis levels by end-2001, owing to the liquidity injection to the market.

Graph 3
Treasury debt to Central Bank/Central Bank assets
 In percentages



Source: Central Bank.

Graph 4
Developments in net domestic assets



Source: Central Bank.

The increase in open market operations was the main source of expansion in NDA until May 2001. After May, there was a sharp increase in public credits as a result of the direct purchase of government papers by the CBRT in the restructuring process of the state and SDIF banks. Meanwhile, use of IMF credits by the Treasury for budget purposes resulted in a decrease in Net Foreign Assets

(NFA)³ mitigated by an increase in NDA. The CBRT's foreign exchange sales and lending facilities to state and SDIF banks to control liquidity contributed to the decline in NFA. As the increase in NDA was more than the decrease in NFA, base money expanded by 35%, in line with the programme target and much lower than inflation.

As the maturity of the domestic borrowing was shortened and the cost of borrowing increased after the February crisis, the liquidity need of the Treasury increased. This situation created concerns about the domestic debt rollover. Accordingly, the Treasury conducted a voluntary domestic debt swap operation on 15 June 2001 to reduce the domestic debt service burden and facilitate a decline in interest rates, while assisting the banking sector in reducing its foreign currency exposure. The swap involved the exchange of some short-maturity lira government securities for a mix of one third in longer-dated lira securities and two thirds in foreign exchange indexed government bonds. Accordingly, a total of TRL 9.3 quadrillion (USD 7.6 billion) of government securities with an average maturity of six months were exchanged for those with an average maturity of 38 months. The private banks' on-balance sheet foreign exchange net open position decreased to USD 1.5 billion from USD 8.4 billion between end-2000 and end-2001.

6. How the recent crises affected the domestic debt stock

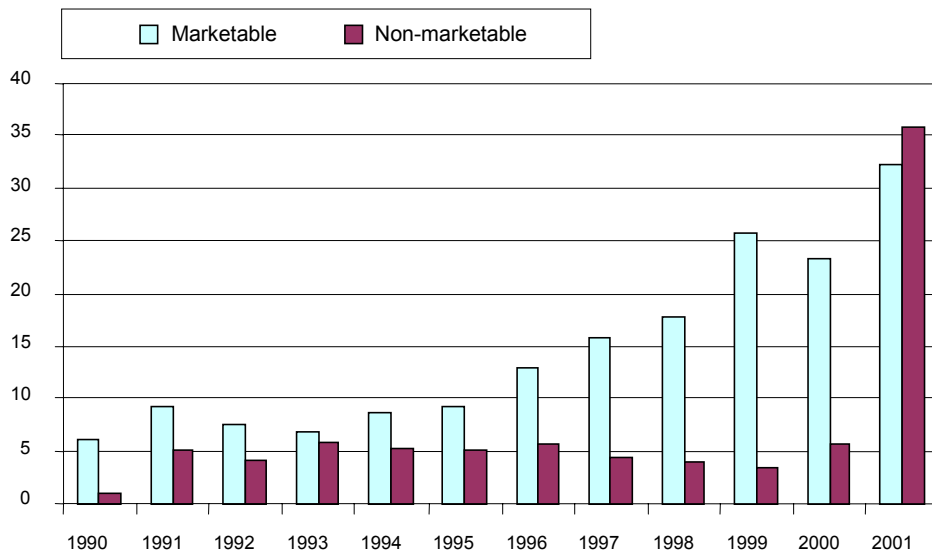
The restructuring of the banking sector after the 2000 and 2001 financial crises placed a substantial burden on public finances. The government securities that were given to state and SDIF banks in the restructuring process increased the domestic debt stock from 29% of GDP in 2000 to 66% in 2001. There was also a noticeable change in the structure of the stock and its holders, the amount of non-marketable debt stock held by the public sector and the maturity profile (Tables 2 and 3). The share of cash domestic debt stock in total debt stock declined to 48% in 2001 from 81% in the previous year, while the share of the non-marketable domestic debt stock in the total stock increased considerably from 19% to 52%.

As can be observed from Table 3, another aspect of the banking operation was the significant change in the composition of domestic debt stock, mainly due to foreign exchange (FX) and FX-linked securities handed to SDIF banks, swap operations, credit from the IMF used to finance the budget deficit and FX-denominated borrowing from the domestic market. The floating rate notes and FX and FX-linked securities constituted the majority of the total domestic debt stock in 2001, while in 2000 fixed income and floating rate securities had accounted for the majority. The share of fixed rate securities decreased to 15% by end-2001, from 56% at end-2000. Meanwhile, the share of the FX-linked and FX-denominated debt in total debt increased to 36% as of end-2001, compared to 8% in 2000. Simply, the bulk of the exchange rate and interest rate risk of the banking sector has been transferred to the Treasury.

Meanwhile, the maturity of the cash domestic debt stock increased 10 months with respect to the previous year, and reached 19 months in 2001 owing to swap operations, IMF credit and FX and FX-linked public sales and direct sales. The average maturity of the non-cash domestic debt stock reached 50 months as a result of the restructuring of the CBRT's portfolio in October and the restructuring of the SDIF banks' portfolio in response to the deposit turnovers in December. Hence, the average maturity of the total domestic debt stock was 35 months in 2001. However, the maturity of the borrowing through the Treasury auctions declined to 4.7 months in 2001 from 13.8 months in 2000.

³ After the use of IMF credit, CBRT international reserves increased together with the liabilities to the IMF, leaving net international reserves unchanged. Afterwards, as the Treasury started to use this credit from its lira deposit account at the CBRT, NDA increases and excess liquidity in the market were mopped up by the CBRT's foreign exchange sales, thus in turn decreasing net international reserves.

Graph 5
Structure of domestic debt
 In percentages to GNP



Source: Treasury.

Table 2
Distribution of domestic debt by buyers

	2000		2001	
	TRL trillions	% share	TRL trillions	% share
Cash	29,591	100	58,354	100
Market	22,987	78	32,963	56
Public sector	6,607	22	25,423	44
Central bank	0	0	13,768	24
State banks	2,731	9	4,253	7
SDIF	152	1	132	0
Other	3,724	13	7,270	13
Non-cash	6,829	100	63,837	100
Central bank	0	0	18,778	29
State banks	2,911	43	22,722	36
SDIF	3,850	56	19,514	31
Other	68	1	2,823	4
Total	36,420		122,191	

Source: Central Bank of the Republic of Turkey (2001).

Table 3
Structure of domestic debt

	1999		2000		2001	
	TRL trillions	% share	TRL trillions	% share	TRL trillions	% share
Cash	20,400	89	29,591	81	58,354	48
Fixed	15,465	68	19,421	53	17,745	15
Flexible	3,809	17	8,992	25	11,426	9
FX-denominated	1,125	5	1,178	3	7,133	6
FX-linked	0	0	0	0	22,050	18
IMF credit	0	0	0	0	13,768	11
Swap/tap	0	0	0	0	7,740	6
Public sales	0	0	0	0	542	0
Non-cash	2,520	11	6,830	19	63,837	52
Fixed	418	2	1,018	3	0	0
Flexible	2,102	9	3,997	11	49,513	41
FX-denominated	0	0	1,814	5	12,389	10
FX-linked	0	0	0	0	1,935	2
Total stock	22,920	100	36,421	100	122,192	100
Fixed	15,883	69	20,439	56	17,745	15
Flexible	5,911	26	12,989	36	60,939	49
FX-denominated	1,125	5	2,992	8	19,522	16
FX-linked	0	0	0	0	23,985	20

Source: Central Bank of the Republic of Turkey (2001).

7. Conclusion and future challenges

This paper presents the general framework of fiscal balances and monetary policy of the Turkish economy over the last decade, particularly emphasising the role of consistent policymaking in stabilising the economy. There are some lessons that can be drawn from the Turkish experience:

- The capital account liberalisation has to be accompanied by - and preferably preceded by - an overhaul of the country's capacity to supervise, regulate and manage financial institutions, so that the domestic financial system can properly cope with the complications of the free capital movements. After Turkey liberalised its capital account, the arbitrage-seeking inflows and outflows started to constitute a rising share within capital movements and contributed to rising domestic instability, which in turn necessitated higher interest rates on domestic assets. In addition, the availability of foreign capital eased the financing constraint of the governments and delayed the achievement of fiscal discipline.
- The perceived fiscal unsustainability in Turkey led to macroeconomic instability. The government's capacity to use fiscal policy as a countercyclical instrument weakened, its access to external financing became subject to high risk premia, and its ability to attract potential foreign investors was impaired. There was also a traditional friction in fiscal policy,

namely procyclicality bias.⁴ This created risks to economic stability in the short-term, exacerbated debt accumulation, and jeopardised the long-term sustainability of public finances.

- Debt sustainability has been an important issue on the fiscal agenda for years - particularly in the second half of the 1990s - due to the high level of domestic debt stock with short-term maturity. In this sense, recent currency crises together with the fragile banking sector aggravated the concerns over the debt sustainability as the surge in interest rates placed a substantial burden on public finances. The dynamics of domestic debt is influenced by the expected cost of debt servicing, which is in turn affected by the market's perception of fiscal sustainability: see Heller (2002). Turkey's experience after the 2001 crisis shows in order to roll over the domestic debt, the Treasury had to assume higher exchange rate and interest risk.
- The budget coverage has been limited in Turkey, especially with the introduction of an increasing number of extra-budgetary funds during the 1990s, as well as the increase in the state banks' quasi-fiscal operations to conduct the agricultural subsidies. In addition, high and persistent inflation has also resulted in "supplementary budgets" being the norm whenever expenditures exceed appropriations. The fact that governments could spend public resources outside the budget has increased their discretion and reduced the transparency of the budget. In line with this argument, Turkey would be able to strengthen fiscal balances permanently through a high-quality, transparent budget process, good governance and a well managed expenditure and revenue administration accompanied by well designed macro measures. As noted by Heller (2002), a government should have a realistic understanding of factors (the aggregate price level and interest rate, key commodity prices, level of economic activity) that determine the dynamics of key fiscal variables. Besides, a government should have the capacity, within the framework of budgetary legislation, to intervene in a flexible and timely manner, to influence the broad fiscal aggregates and, in particular, to correct deviations as they may emerge.
- It is essential to ensure effective coordination between fiscal and monetary policy as inappropriate fiscal policies can damage the credibility of monetary policy. Turkey started to implement programmes with strong fiscal fundamentals only at the end of the 1990s. Bank restructuring and the liquidity support operation after the 2001 crisis provide examples of good operational coordination between the two policies.
- Monetary and fiscal policies are designed and implemented by different authorities with their own objectives and limitations. Sometimes these authorities are obliged to make a shift in the weight of the variables in their objective function due to unexpected domestic and external developments. The joint determination of objectives and policies by the monetary and fiscal authorities is a fundamental requirement for consistent policymaking, but it should not undermine the target of medium-term price stability.
- The multi-year macro budgetary framework is an important prerequisite for clarifying the priorities among competing budgetary objectives and facilitating consideration of intertemporal budgetary trade-offs. Such a framework can also improve allocation and institutional discipline. A multi-year budgetary framework, together with the Treasury Act which will become effective in 2003, and the already amended Central Bank Law, should enhance the joint credibility of the policies. This would help ease medium-term monetary policy implementation, and in turn increase the reliability of monetary policy objectives.

⁴ Fiscal policy is subject to extensive political constraints: electoral concerns, the need to strike deals with opposition parties, or to favour certain constituencies such as public sector unions. The complex political game that leads to the formulation of fiscal policy often brings about departures from optimal and prudent policies.

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