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 polices 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 polices 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

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[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 balance[1]

	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 problems[10] 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

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[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 balance[1]

	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 Mihaljek and Tissot in this volume.

Table 3

Structural fiscal ratios[1]

	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
Memo item:				
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 polices 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 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

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[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 growth[1]

	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
Memo item:				
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 polices. 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?

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[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 policy[27] 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 polices 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

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[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 polices. 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
Indonesia	Before 1998[4]	–1.0	N
Korea	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
Thailand	1990	1.7	
	1992	–2.0	
	1997	–4.2	
Brazil	1999	–3.2	C
Chile	1997-1999	3.1	C
	1999-2000	–1.4	N
Colombia	1992-1993	1.3	E
	1999-2000	2.1	E
Mexico	1995	–2.6	C
Peru	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 ±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.

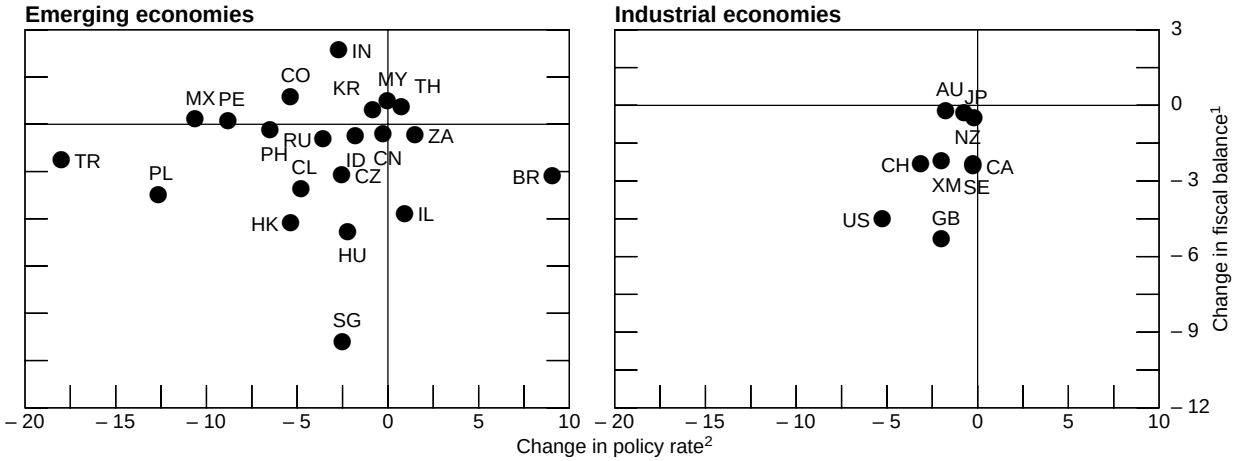
Source: Central banks.

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).

Graph 1 **Recent policy mix**



[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 polices 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.

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[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 deficit[1]

	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 2002[1]

	% 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 debt[1]

	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 challanges. 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.

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[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 rates[1]

	Short-term[2]			Long-term[3]		
	2000	**2001**	**2002**	**2000**	**2001**	**2002**
Asia[4]	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 America[4]	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 Europe[4]	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
Memo:						
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 rates[1]

	Short-term[2]			Long-term[3]		
	2000	**2001**	**2002**	**2000**	**2001**	**2002**
Asia[4]	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 America[4]	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 Europe[4]	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		
	No	In 2000, further compensation to telecommunications company	Yes	
Thailand	No	No	Yes	No
Brazil	No			
Chile	Yes	Yes; copper price	No	
Colombia	Yes	No	No	
Mexico	Yes (estimation of structural budget)	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
Peru	Yes (revenues only)	No	Yes (IMF fiscal impulse concept)	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
Memo					
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.