

**THE SCOPE FOR FISCAL POLICY;
WITH EXAMPLES FROM THAILAND**

Karel Jansen

September 2002

Working Paper 369

The Institute of Social Studies is Europe's longest-established centre of higher education and research in development studies. Post-graduate teaching programmes range from six-week diploma courses to the PhD programme. Research at ISS is fundamental in the sense of laying a scientific basis for the formulation of appropriate development policies. The academic work of ISS is disseminated in the form of books, journal articles, teaching texts, monographs and working papers. The Working Paper series provides a forum for work in progress which seeks to elicit comments and generate discussion. The series includes the research of staff, PhD participants and visiting fellows, and outstanding research papers by graduate students.

For further information contact:

ORPAS - **Institute of Social Studies** - P.O. Box 29776
2502LT The Hague - The Netherlands - FAX: +31 70 4260799
E-mail: **workingpapers@iss.nl**

ISSN 0921-0210

Comments are welcome and should be addressed to the author:

CONTENTS

| | |
|---|----|
| 1 INTRODUCTION..... | 1 |
| 2 FISCAL POLICY IN THEORY | 2 |
| 2.1 price flexibility | 3 |
| 2.2 wealth effect..... | 3 |
| 2.3 expectations..... | 5 |
| 2.4 the dynamics of adjustment..... | 5 |
| 3 FISCAL POLICY IN PRACTICE | 10 |
| 4 FISCAL POLICY IN THAILAND..... | 14 |
| 5 CONCLUSION | 25 |
| FIGURES | 26 |
| TABLES..... | 31 |
| APPENDIX | 32 |
| 1 Automatic stabilisers and discretionary fiscal policy | 32 |
| 2 Sustainable primary fiscal deficit..... | 35 |
| REFERENCES..... | 39 |

ABSTRACT

This paper is concerned with the application of fiscal policy instruments in stabilisation policy. Theoretical and practical considerations suggest that the scope for fiscal policy may be limited, but the analysis of the actual performance of Thailand shows that an active use has been made of fiscal policy. Compared to advanced economies the role of automatic stabilisers is relatively small, more important have been the discretionary fiscal policy interventions. The paper is focussed only on the application of fiscal policy instruments not on the impact of fiscal policy interventions on the real economy.

1 INTRODUCTION

This paper focuses on the role of fiscal policy in stabilisation policies in middle-income developing countries. The aim of stabilisation policy is to keep the level of output close to its potential while inflation and the current account deficit are at acceptable levels. The main instruments of stabilisation policy are fiscal and monetary policy. Fiscal and monetary policies should be coordinated to achieve the stability objectives but each has its own focus, instruments and procedures. In recent years, monetary policy is increasingly focused on controlling inflation, most explicitly so in countries that adopted inflation targeting. As monetary policy concentrates on keeping actual inflation close to its target, it is less concerned with the keeping the output gap stable and small. It could be argued that under these conditions the management of the output gap, and of the current account, becomes the task of fiscal policy (Budnevich 2002).

However, assigning to fiscal policy the task of stabilising output fluctuations runs into theoretical and practical problems. Theoretical contributions argue that, for a variety of reasons, fiscal policy is rather ineffective in stabilising output. The practical problems relate to the fact that fiscal policy instruments (the various tax rates and expenditure activities) are rather inflexible in the short-run and they can, therefore, not respond quickly enough to output fluctuations. As a result of these problems, the literature has in recent years focused more on the medium and long-term issues in fiscal policy, such as the sustainability of the fiscal deficit or of the government debt. Some have proposed stable policy rules for fiscal policy to avoid the uncertainty that will arise from tinkering with the fiscal variables in the short run.

Despite these theoretical and practical considerations, fiscal policy does play a role in stabilisation policy in developing countries. In the first place, due to the impact of automatic stabilisers, the fiscal balance tends to show an anti-cyclical pattern. This pattern arises simply because, during the recession, tax revenue tends to fall with the decline in output (and increase during the boom), without any change in tax rates. But countries also undertake discretionary fiscal policy to keep the economy close to its potential output level. This is clearly the case today in Southeast Asian economies, where the recession that followed the Asian crisis is attacked with expansionary fiscal policies.

In this paper I will review the theoretical (section 2) and practical (section 3) aspects of short-run fiscal policy making. In section 4 I will use the ideas developed in these sections to analyse the fiscal policy of Thailand.

2 FISCAL POLICY IN THEORY

The standard model for the analysis of stabilisation policy in the open economy is the Mundell-Flemming model. According to this model, under a fully flexible exchange rate and perfect capital mobility, fiscal policy cannot affect real output. A fiscal expansion, with the money supply fixed, will push up the interest rate. The resulting capital inflow will result in an appreciation of the exchange rate which leads to a reduced demand for domestically produced good, which will offset the fiscal expansion (see e.g. Argy 1994, chapter 6).

In fact, this extreme situation is unlikely, certainly in developing countries. Capital mobility, even after financial liberalisation, is not perfect. Remaining regulations, transaction cost, incomplete information and limited possibilities for covering the exchange rate risk make domestic and foreign financial assets imperfect substitutes. Moreover, the move to the more flexible exchange rate regime that can be observed in many countries, does not mean that the exchange rate is now freely floating. Monetary authorities continue to have objectives with respect to the level and stability of the exchange rate and may intervene to mitigate the fluctuations in the exchange rate. Under such conditions of less than perfect capital mobility and managed float, fiscal policy can retain some effectiveness.

The basic Mundell-Flemming model is a simple model: prices are assumed fixed, there is no role for a wealth effect or for expectations, and there is no attention for the dynamics of adjustment and the longer-term sustainability of the outcomes of the model. Some argue that these assumptions are acceptable if one is only interested in short-run adjustments to fiscal policy interventions, others see them as shortcomings that make the model less useful. The model has been extended to deal with the impact of price and wage flexibility, of the wealth effect and of expectations on the adjustment process.¹

¹ Argy (1994) presents a systematic treatment of the basic model and of its extensions. Barro (1997) presents a fundamentally different approach to macroeconomic analysis, based on households that maximise utility facing a budget constraint over several periods. These households operate on markets for goods, labour and credit that all clear through flexible prices. See Blanchard and Fischer (1993) for a more advanced treatment.

2.1 price flexibility

Mundell-Flemming assumes fixed prices and wages. This may be realistic in the short run, although some models assume price and wage flexibility even in the short run. Argy (1994, chapter 8) introduces price and wage flexibility into the Mundell-Flemming model. This changes the conclusion on the effectiveness of fiscal policy. Under free floating exchange rates and perfect capital mobility, fiscal policy was ineffective with fixed prices. With flexible prices, an expansionary fiscal policy results in the appreciation of the exchange rate but this now leads to a fall in the price level as the domestic price of imported goods falls. The decline in the price level implies that real money balances increase and wages may fall (wage indexation), both of which will stimulate demand and output.

2.2 wealth effect

In the Mundell-Flemming model, wealth consists of the holdings of financial assets (money, bonds, foreign assets) and wealth can change when monetary or fiscal policy changes the supply of money and bonds. These changes in wealth can affect, for instance, consumption demand or the demand for money, but the size of these effects are likely to be small and do not to affect the conclusions of the model.

In an alternative model with households that maximise utility over several periods, the wealth effect becomes more important (see Barro 1997). Under these conditions the households, when making consumption or labour supply decisions, do not only look at the instantaneous change in financial assets, but at changes in the (present value of) expected lifetime income, government expenditure and taxes. In this model it is crucial whether the fiscal policy change is expected to be temporary (as it would be in stabilisation policy) or permanent. A temporary increase in government spending financed by taxation does not change the present value of lifetime earnings or tax payments by much. Hence, wealth does not change and consumption remains unaffected; all changes in disposable income due to the increased taxation is absorbed by adjustment in savings and aggregate demand rises as government spending rises while private spending does not change much. Short-term fiscal policy can thus be effective but only

to a limited extent as it does not have multiplier effects on private spending.²

A particular application of the wealth effect is the Ricardian Equivalence Theorem. This refers to the case of a tax cut financed by the issuing of government debt. If households are forward-looking, they will realise that, at a certain moment in the future, taxes will have to be increased to repay the debt. The present value of the tax burden they face and of their disposable income do thus not change. The current tax cut does not change the present value of disposable income and, hence, consumption remains unchanged: the tax cut is fully saved so as to create the funds to pay the future taxes and this type of fiscal policy is totally ineffective.

The empirical support for the Theorem is not strong.³ The critics argue that the hypothesis is based on very strong assumptions that are not fulfilled in real life. People do not live forever and they may disregard future taxes.⁴ Particularly in the hard conditions of developing countries, the time horizon over which people take decisions may be relatively short. Moreover, the Ricardian Equivalence requires that financial markets are perfect so that households can borrow and lend at will to smoothen their consumption pattern. In reality financial markets are far from perfect: the government can issue debt at a given interest rate but households cannot borrow at that same rate, they would have to pay a higher rate. That implies that household discount future tax payments with a discount rate that is higher than the interest the government has to pay on the bonds. The present value of the future tax payments is thus less than the current tax cut

² This ignores any incentive effects that the increase in taxes may have. E.g. an increase in income tax will reduce the return to labour and capital which may negatively affect the labour supply and level of investment. If the increase in government spending financed by higher taxes is expected to be permanent, the response will be radically different. Now the present value of lifetime taxes has risen and thus the present value of lifetime disposable income has fallen. This fall is fully reflected in a decline in private consumption, so that the increase in government spending is fully offset by a fall in private spending. In this case output may still rise if government spending is productive and if declining wealth invites a greater work effort (Barro 1997).

³ Argy (1994) summarises the literature by saying that there is only some support for the Theorem in a few countries that started off with an already high level of government deficit and debt.

⁴ On the other hand, even when people do not live forever, they may be concerned about the welfare of their children beyond their death and they may increase savings so as to build up a bequest out of which their children can pay the future taxes.

and that means that the tax cut has a real effect.⁵

2.3 expectations

The role of expectations is emphasized in the models of the New Classical Macroeconomics. The models use an aggregate supply function in which output will only differ from potential output when actual prices differ from expected prices. For instance, if actual prices exceed the expected price level, producers interpret this as a sign of unexpectedly strong demand and this will induce them to increase output. However, when people anticipate an expansionary fiscal or monetary policy they will also anticipate the price increase that this will entail and output remains unchanged. People may anticipate fiscal policy because they know that the government is following some policy rule, e.g. government spending rises when actual output falls below the potential level. The implication is that only unanticipated shocks, including surprise policy changes, will have effects on real output. This theory is based on the assumptions of flexible prices and rational expectations, conditions which are not (fully) met in reality. Empirical studies (mainly on the effects of monetary policy) suggest that monetary policy, even measures that could have been anticipated, do have effects on the level of economic activity (Walsh 2000, chapter 1, Argy 1994). Post-Keynesian contributions to this debate emphasize in particular the role of price and wage rigidities that imply that policy interventions can have real effects.

2.4 the dynamics of adjustment

The Mundell-Flemming model is short-term in nature and the short-term adjustments in the model may lead to outcomes that are unsustainable in the medium and long term. An expansion of aggregate demand may lead to a current account deficit that will have to be redressed soon or the increase in the fiscal deficit leads to an accumulation of government debt that cannot go on forever.

⁵ These two arguments are the main ones that are brought against the Ricardian Equivalence hypothesis. Other points that are mentioned are that, when taxes are not lumpsum, a change in tax rates will have effects on work effort and on saving and investment. For instance, an income tax reduction could increase work effort and investment. Moreover, even if the tax cut is fully translated into higher savings and these savings have to be allocated over financial assets. It is unlikely that households will allocate their increased savings fully to the increased supply of government bonds. It is more likely that they will distribute the savings over all available assets (money, government bonds, foreign assets). If the demand for foreign assets rises, this will lead to exchange rate depreciation which will have real effects on the economy (see Argy 1994).

If there is no economic growth, the long term equilibrium value for the fiscal deficit must be zero. With a deficit larger than zero, there will be a continuous supply of money or government bonds to finance the deficit but households will be unable to endlessly absorb this supply.

If there is growth, the long-term sustainable fiscal deficit is the deficit that leads to a stable ratio of government debt to output:

$$B_t = B_{t-1} + rB_{t-1} + D_t$$

dividing by Y_t , and using $Y_t = (1+g)Y_{t-1}$ gives:

$$(1) \quad b_t = d_t + \frac{(1+r)}{(1+g)} b_{t-1}$$

B = government debt, and $b = B/Y$

D = primary fiscal deficit and $d = D/Y$

r = interest rate

g = growth rate output Y

As long as $g > r$, any increase in the primary deficit will, in the end, lead to a new stable debt/output ratio (of course, this new level may be considered too high in which case adjustment of the deficit will be necessary). But if the $g < r$, or if the primary deficit continuously rises, there is clearly a unsustainable situation that requires correction.

Argy (1994, chapter 20) presents an interesting model in which as the debt/output ratio rises, the risk premium rises and the interest rate to be paid on government debt increases. The rising interest rate increases the cost of debt service and leads to a larger deficit which, in turn, leads to again higher interest rates, and so on. The higher interest rate crowds out private investment and leads to a private sector savings surplus necessary to absorb the government debt. It also leads to a capital inflow (to buy the government bonds) and an appreciation of the exchange rate. But this cannot go on; at a certain moment that interest rate becomes so high that the domestic economy collapses or international creditworthiness disappears.

These theoretical arguments lead to the conclusion that, as long as capital mobility is not perfect, the exchange rate is not fully freely floating, and you do not start

from an already very high level of the fiscal deficit or of government debt, fiscal policy can be effective in stabilising real output. Fiscal expansion may lead to an increase in the interest rate and an appreciation of the exchange rate, which would have negative effects on investment and export and, through these, on prospects for long-term growth. However, when such a fiscal expansion is undertaken in a recession when output is below its potential level, such crowding out effects are less likely and crowding in of private investment is even possible.

In developing countries fluctuations in economic activity are often due to external shocks, such as supply shocks due to weather (floods, droughts), shocks in international commodity prices, or sudden turnarounds of international capital flows. Can fiscal policy help in the face of such shocks?

A negative supply shock, e.g. due to bad weather or to a deterioration of the terms of trade, will result in a current-account deficit and to a fall in income and in economic activity. Under a flexible exchange rate regime, the current-account deficit will induce a depreciation which will shift demand to domestically produced goods and so help to restore balance-of-payments equilibrium. In this situation, an expansionary fiscal policy will further widen the current-account deficit or, with flexible exchange rates, will dampen the exchange rate depreciation. If the supply shock is considered to be temporary only, the fiscal policy intervention is justified because it will stabilise the fluctuations in output and the exchange rate over time. Also, in this case, fiscal policy is likely to be more effective than monetary policy (Bird 1998). But if the supply shock is expected to be permanent, fiscal policy intervention is undesirable as it would hinder the adjustment to the new situation by further deteriorating the current account and by obstructing the exchange rate depreciation that is necessary to effect the adjustment to the new situation.

Another source of shocks is the international financial market. Sudden changes in capital flows, in the global interest rates or in the alignment of major currencies can lead to substantial fluctuations in economic activity in developing countries. The capital account liberalisation that has taken place in many countries during the 1980s and the 1990s has further increased the vulnerability to this type of shocks. During the second half of the 1980s and the early 1990s developing countries, particularly in Southeast Asia, experienced very large inflows of foreign capital; after the start of the Asian crisis in 1997 these flows were drastically reversed. Macroeconomic management in the face of such large capital flows becomes a major concern (see e.g. IMF 1992,

Corbo & Hernandez 1994, French-Davis & Griffith-Jones 1995, Kahler 1998, Kwan et al 1998, Lopez-Mejia 1999). The capital inflow increases aggregate demand and is likely to lead to an appreciation of the real exchange rate. This may be problematic for a number of reasons. Firstly, the excess demand may translate into inflation. Secondly, the appreciation will undermine the competitiveness of domestic goods and a decline in net exports, while the capital inflows may lead to a build up of external debt, which has to be serviced from export earnings. Capital inflows will lead to an increased liquidity on financial markets and rapid domestic credit growth. It is possible that banks become overly optimistic about the performance of the economy in extending credits, If that is so, the average quality of bank assets will decline, which can lead to serious problems when the economy would slow down or when the capital flows are withdrawn. To prevent or reduce these problems policies are suggested that would neutralize the expansionary effects of capital inflows. These consist of tight fiscal and monetary policies, of trade liberalization so that the excess demand can leak away in imports, of liberalization of capital outflows, etc.

Heller (1997) argues that capital inflows should be accompanied by cautious fiscal policy. The inflows will stimulate economic activity, as a result tax collection will increase and the fiscal balance, with unchanged expenditure, will improve.⁶ Still, fiscal contraction beyond this automatic adjustment is desirable in order to limit the expansionary pressures in the economy and to reduce the liquidity in the financial market and to limit the exchange rate appreciation that is caused by the capital inflows. Heller (1997) emphasizes that also during periods of capital outflows a contractionary fiscal policy is required in order to reduce domestic absorption to finance the current-account surplus and to maintain the confidence of the international investors in order to limit the extent of the outflows.

FitzGerald (2001) points out the danger that capital flow volatility translates into fiscal volatility. The inflow of external capital results in increased liquidity in fi-

⁶ The capital inflows may have further fiscal effects: liquidity in the domestic financial market will increase so that domestic interest rates will fall, which could affect domestic debt servicing cost for the government. If the monetary authorities try to sterilise the liquidity effect of the capital inflows, domestic interest rates may increase. The capital inflows will also lead to an appreciation of the real exchange rate, thus reducing the domestic currency cost of servicing external public debt.

nancial markets, and lower interest rates, and an increase in economic activity and, possibly, to expectations of higher economic growth. These changes may lead to an upward adjustment in the perception of the sustainable level of government debt.⁷ The current fiscal balance will adjust to this new higher target debt level and, in that way, the capital inflows will be accompanied by an expansionary fiscal policy. When, at some future moment, the external capital flows turn around, the capital outflows are likely to lead to a radical change in the perception of sustainable debt levels and a sharp fiscal adjustment will be necessary.

Budnevich (2002) argues, on similar grounds, that fiscal policy in Latin America has been pro-cyclical. During the boom, the access to international financial markets improves and governments borrow to finance fiscal expansion. During the recession, the access disappears and sharp fiscal adjustment is necessary.

In order to contain these problems, Heller (1997) suggests that, under an open capital account, the appropriate level of the sustainable fiscal deficit and of sustainable government debt should be reduced significantly. A lower level of the long-run fiscal deficit and fiscal debt will help

- to avoid frequent and large fiscal adjustments as capital flows turn around
- to reduce the risk of capital outflows. A large fiscal deficit and a high level of government debt will make the country more vulnerable to shifts in market sentiment
- to reduce the risk premium that comes with high levels of debt
- to account for contingent liabilities. Next to the explicit government debt, the government may carry hidden liabilities. This is most obviously so in the case of government guaranteed borrowing by state-owned enterprises. Another important case relates to the domestic financial system (Kopits 2000). Capital inflows are, to some extent, channeled through the financial system and they do increase the liquidity on financial markets. Capital inflows are, therefore, generally associated with sharp increases in domestic credit. Sudden outflows of funds can affect the health of the financial institutions and government support will be necessary, as was for instance the case during the Asian crisis.

Some argue that, in the face of such uncertainties, permanent fiscal policy rules are the best way to keep the confidence of the market (Kopits and Symansky 1998,

⁷ See equation (1) above. An higher rate of (expected) economic growth, or a lower interest rate, will increase the sustainable level of B/Y .

Heller 1997). Examples of such rules would be a balanced budget rule or ceilings to the level of public debt. But such rules will be only credible if the contingent liabilities are contained through financial reform and strict financial supervision. Even then, it is not certain whether such rules will stand in the face of very large turnarounds of capital flows.

3 FISCAL POLICY IN PRACTICE

A counter-cyclical fiscal policy would reduce expenditure and/or increase taxes (i.e. reduce the fiscal deficit, or even run a surplus) when aggregate demand tends to push output beyond the potential and would do the reverse when the economy hits a recession. In doing so fiscal policy would help prevent unemployment, inflation and excessive current account deficits.

The fiscal policy stance can, in first instance, be read from the changes in the fiscal balance (or the fiscal balance as percentage of GDP).⁸ But the changes in the fiscal balance are not fully due to fiscal policy interventions. Even without any explicit fiscal measure the fiscal balance will fluctuate over the economic cycle due to so-called automatic stabilisers. These are “those elements of fiscal policy that tend to mitigate output fluctuations without any explicit government action” (Auerbach & Feenberg 2000, p 37). As the economy slides into a recession incomes are falling and collected income taxes are falling, imports are falling and import duties revenue is falling, unemployment is rising and the payment of unemployment benefits is rising. As a result a fiscal deficit is emerging or deepening. During the boom a reverse process takes place.

The changes in the observed fiscal balance are caused by (1) automatic stabilisers, (2) discretionary fiscal policy measures, and (3) structural changes in the economy. An example of the structural changes is the demographic transition that affects expenditure on social services and on pensions; these are typically long-term changes that do not need to concern us when discussing stabilisation policy.

The sensitivity of the fiscal balance to the economic cycle depends on (see Auerbach & Feenberg 2000, Van den Noord 2000):

⁸ It should be recognised that the fiscal balance is an incomplete indicator. The impact of an increase in the fiscal deficit will be different depending on whether it is brought about by raising expenditure or lowering taxes. The impact may differ depending on which categories of spending are increased or which taxes are reduced. The impact of an increase in the deficit will depend on how the deficit is financed, by monetary expansion, domestic borrowing or external borrowing. The impact of domestic financing will depend on the state of development of financial markets.

- the size of the government sector. The larger the Revenue/GDP and the Expenditure/GDP ratios, the more sensitive the fiscal balance will be to fluctuations in GDP.
- the progressivity of taxes and the generosity of unemployment benefits. The more progressive the rate structure of the tax, the more sensitive it will be to fluctuations in income.
- the tax structure. The larger the share of progressive or cycle-sensitive taxes in total revenue, the more sensitive total tax revenue will be.

The impact of the automatic stabilisers is that disposable income fluctuates less than the pre-tax income and that, thus, the fluctuation in private spending (particularly consumption) is less than the fluctuation in income. This helps to stabilise the economy and, as automatic stabilisers can work fast, the impact can be important. Of course, the impact depends on how strongly consumption demand responds to changes in disposable income; this may depend on the nature of the shock that is causing the change in disposable income and, in particular, on whether the shock is seen to be temporary or permanent (see Barro 1997). The impact will also depend on the income distribution. If income is concentrated on high-income groups, with low marginal propensity to consume, automatic stabilisers will be less effective in stabilising the economy. On the other hand, low-income groups may be more vulnerable to the economic cycle, but they may not pay much income taxes (Auerbach & Feenberg 2000).

In advanced countries the role of automatic stabilisers is very important. Taylor (2000) concludes that in the USA over the last four decades automatic stabilisers have been far more important than discretionary fiscal policy. Van den Noord (2000, p 8) estimates the cyclical component of the fiscal deficit of OECD countries at cyclical peaks and troughs at about one per cent of GDP, equal to about 50 per cent of the output gap.⁹ When the automatic stabilisers are effective, there will be less need for discretionary fiscal policy over the business cycle. This implies that tax rates and expenditure programmes are stable over time; this stability may reduce uncertainty and may have positive effects on long term growth. Of course, the process should be symmetric over the cycle, there may be the temptation to use the good revenues during the boom to finance new expenditure.

⁹ Also Taylor (2000) estimates that automatic stabilisers account for about half the output gap in the USA.

It is likely that automatic stabilisers are less important in developing countries.

- the Revenue/GDP and Expenditure/GDP ratios are far smaller than in advanced countries. In the 1980s the Tax/GDP ratio was around 30 per cent in OECD countries against about 17 per cent in non-OECD countries and only 15 per cent in Asia (Zee 1996).
- within that smaller tax base, the share of income-elastic taxes is smaller. Income taxes account for almost 40 per cent of total revenue (or about 12 per cent of GDP) in OECD countries but only for 32 per cent in non-OECD and 33 per cent for Asia (in both cases about 5 per cent of GDP). Taxes on consumption and on international trade are the more important revenue sources in developing countries.
- on the expenditure side there are few automatic stabilisers in developing countries. In the OECD countries, unemployment benefits are an important expenditure category that moves with the cycle. Few developing countries have significant social security spending.

An obvious strategy would be to increase the share of income-elastic taxes in the revenue structure in order to strengthen the role of automatic stabilisers.¹⁰ However, the pressures of globalisation may make it difficult to increase income taxes in countries that fight to increase inflows of FDI or that try to contain capital flight (Toye 2000, Heller 1997).

As automatic stabilisers may be less powerful in developing countries, there would be a greater need for discretionary fiscal policy interventions. Taylor (2000) argues against the use of discretionary fiscal policy on the following grounds:¹¹

- it is not true that monetary policy only looks at inflation. Most central banks use a policy rule that assigns weights to inflation and to the output gap. The monetary policy instrument will thus be adjusted both when inflation moves away from the target and when the output gap becomes too large.
- monetary policy has comparative advantages. The implementation lag for monetary policy is far shorter than that for discretionary fiscal policy. Moreover, monetary policy measures are easier to reverse.

¹⁰ Toye (2000) argues that also the VAT can be quite income elastic provided that the base is broad enough and the rates high enough. This advantage would come on top of other advantages he sees for the VAT, such as the low distortionary effect (compared to earlier cascading sales taxes) and flexibility in the short run (when rates can be adjusted quickly in response to economic developments).

¹¹ Taylor develops his arguments for the case of the USA but most of them are relevant for developing countries as well.

- discretionary fiscal policy is not needed as the automatic stabilisers provide already a countercyclical fiscal impulse.

To these arguments of Taylor some other points could be added:

- government expenditure should be only on activities that are useful and necessary for economic, social and political reasons. These needs do not change over the business cycle and thus there is little argument for changes in expenditure
- frequent changes in tax rates and rules create uncertainty and disruptions that are undesirable. This applies particularly to taxes on personal or corporate income or on trade that may have important incentive effects. It may apply less to indirect taxes (Heller 1997)
- There are also a number of practical problems that affect the effectiveness of fiscal policy. In principle, fiscal policy is best done through variations in taxes. The level of government spending should be determined by what the economy needs in terms of public services (general administration, social services, etc) and these needs will not change very much in the short run. (Social security expenditure, an important spending category in rich countries with a highly anti-cyclical pattern, is absent in most developing countries.)

But the tax systems in developing countries are not very flexible. It may be easy to lower the tax burden but difficult to increase it. Part of that problem is political, but there are also other aspects. The total tax burden, as percentage of GDP, stands at 17 per cent. An increase in tax collection of 10 per cent, which would be a considerable achievement, will increase the tax/GDP ratio by only a little more than one percentage point and would therefore have a limited effect on the state of the economy. Moreover, tax systems in developing countries tend to be diffuse with many different types of taxes; to get an increase in tax revenue many taxes will have to be adjusted. There is also widespread tax evasion and that may increase when tax rates are raised.

Also government expenditure are rather inflexible, particularly in the short run. Most of government current spending is on salaries and they are difficult to cut. Inflation may be used to cut into nominal salaries, but continued inflation is likely to lead to demands for indexation. To increase expenditure is also not so easy as, in general, it would imply taking up new or more activities and this may have a long preparation time. It is, of course, possible to increase civil servants salaries at short notice. Toyne (2000, p 30) has a table that shows that most of the adjustment in government spending

falls on government investment, where new projects can be postponed. However, such an investment cut may be undesirable for other reasons, mainly because it undermines the growth potential of the economy.

4 FISCAL POLICY IN THAILAND

In discussing fiscal policy in Thailand, it should be noted that till 1997 Thailand had a de facto fixed exchange rate, while capital mobility was restricted till the capital account liberalisation of the early 1990s. One could thus distinguish two regimes. In the 1970s and 1980s a fixed exchange rate with limited capital mobility (i.e. a regime in which, according to the textbooks, fiscal policy can be effective) and, later in the 1990s a regime of a flexible, but managed, exchange rate and enhanced capital mobility (where fiscal policy is only effective to the extent that the exchange rate is managed and the capital mobility less than perfect).

A first impression of fiscal policy can be obtained by looking at Figure 1 which shows the budget balance as percentage of GDP. Looking at the longer-term trend, there are clearly three periods. Between 1970 and 1986 there were significant fiscal deficits, on average at 3.2 per cent of GDP. In the period 1987 to 1996 the underlying trend shifted towards surpluses, on average at 2.1 per cent of GDP. And with the crisis of 1997 the deficits returned.

In this paper I am, however, more interested in the short-term pattern of the fiscal variables. Figure 1 shows that there are significant short-term fluctuations around the longer-term trend values of the budget balance. These short-term fluctuations show the impact of stabilisation policies and their size can be quite considerable. For instance, in 1974 the fiscal balance improved with 3.9 percentage points (to fall back with 3.2 percentage points in 1975). The average change in the fiscal balance (as percentage of GDP) over the period 1970-2001 is only 0.05 per cent, which is what you would expect for short-term cyclical fluctuations; they cancel each other over the full cycle. But the average absolute value of the change is 1.4 per cent of GDP, which suggests a considerable variability of fiscal variables.

As argued above, these short-term fluctuations in the fiscal balance are due to (a) automatic stabilisers and (b) discretionary fiscal policy. To assess the relative contribution of these two elements I will use the method developed at the OECD (see Heller et al. 1986, Chouraqui et al. 1990, Van den Noord 2000). The approach is based on the assumption that, during the economic cycle, output fluctuates around its longer-

term trend level (or around potential output). During the boom, output is above its trend level and revenue and expenditure will then also differ from their trend level, depending on the income elasticity of revenue and expenditure, and during the recession the reverse is the case. The actual fiscal balance is the sum of a cyclical component (caused by movements of the output gap) and the structural balance (due to discretionary fiscal policy). The method consists of (1) estimating trend output or potential output and calculating the output gap as the difference between potential output and actual output; (2) estimating the income-elasticity's of revenue and expenditure and using these, together with the output gap, to calculate the cyclical component of the fiscal balance; (3) calculate the structural balance as the difference between the actual balance and the cyclical component. The Appendix gives more detail about the method.

Figure 2 presents the cyclical component of the fiscal balance, thus calculated; it represents the role of the automatic stabilisers. As expected this role is small, both as a share of GDP and as a share of the output gap. The cyclical fiscal balance moves within a band of 0.5 per cent of GDP, only in the disaster years after 1997 is it somewhat higher. The automatic stabilisers are equivalent to about 5 to 6 per cent of the output gap. These numbers are much smaller than the comparable numbers for OECD countries mentioned above, where automatic stabilisers often exceed one per cent of GDP and account for about half of the output gap. The comparatively small role of automatic stabilisers can be explained from:

- (1) the small share of government revenue and expenditure in GDP. Over the period 1970-2001 the average Revenue/GDP ratio is 15.4 per cent and the average Government Expenditure/GDP ratio 16.5 per cent;
- (2) the relatively low income elasticity's of taxes;
- (3) the small share of income-elastic taxes in total tax revenue. The share of the more income-elastic income tax (both personal and corporate) is, on average over the period, only 3.4 per cent of GDP; by the end of the period, is had risen to between 4 and 5 per cent.;
- (4) the absence of automatic stabilisers on the expenditure side (such as unemployment benefits).

Figure 3 shows the pattern of the structural balance over time; the picture is rather the same as that for the total budget balance in Figure 1, reflecting the fact that automatic stabilisers contribute little. Discretionary short-term fiscal policy would show in the changes in the structural balance from year to year. A short-term fall in the

structural balance would indicate an expansionary fiscal policy. The total impact of short-term fiscal policy on aggregate demand can be measured by the change in the fiscal balance, obtained by adding the change in the cyclical budget balance and the change in the structural balance (see Figure 4, let us call this the fiscal policy indicator, fispol). A negative sign implies an increase in the fiscal deficit (or a decline in the surplus) and indicates an expansionary fiscal policy. The Figure shows that there are significant fiscal policy interventions over the years. The average (absolute) value of the fispol indicator over the period 1970-2001 is 1.4 per cent of GDP, equivalent to about 40 per cent of the output gap, but the peak years show much higher values (for instance, + 3,9 in 1974, - 3,2 in 1975, and +3,0 in 1988). The conclusion is thus that fiscal policy plays a significant role. While in the OECD countries the automatic stabilisers take care of stabilisation, in Thailand it is the discretionary fiscal policy that does the job.¹²

Warr and Nidhiprabha (1996, chapter 7) use another method to analyse fiscal policy. They compare the planned budget deficit, as announced in the budget, with the actual outcome at the end of the fiscal year. The difference between the planned and the actual deficit, they interpret as the impact of automatic stabilisers. Changes in the planned budget reflect discretionary fiscal policy. They find rather substantial differences between planned deficits and actual outcomes and conclude therefore that automatic stabilisers are powerful, a rather different conclusion from the one reached above. In the Appendix I raise some reservations about their method of identifying discretionary fiscal policy, but more important than the different views on the relative contributions, in their study and in this one it is shown that fiscal policy exerts a significant stabilising influence on the Thai economy.

Fiscal policy is clearly used for countercyclical purposes as the following correlation coefficients between the fiscal policy indicator, and its constituent cyclical and

¹² Figure 4 only looks at the central government budget balance. Local government is not very important in Thailand; they collect little revenue and its expenditure account for only about 10 per cent of total government spending. State enterprises are more important. They are active in sectors like energy production and distribution and public transport and decisions about their prices have effects on disposable private income and decisions about investment have a significant impact on aggregate demand. There is active government intervention in these decisions and decisions about price changes and about extent and timing of investment are influenced by fiscal policy considerations. To that extent, Figure 4 provides an underestimate of total fiscal policy.

structural parts, and the output gap, inflation and the current account deficit and a broader instability indicator show:¹³

**Table 1: Determinants of fiscal policy
(correlation coefficients)**

| | fispol | Δ cyclical | Δ structural |
|-------------------------|--------|------------|--------------|
| Δ output gap | 0.44 | 0.96 | 0.30 |
| Δ inflation | 0.43 | 0.05 | 0.44 |
| Δ current account def. | 0.43 | 0.75 | 0.32 |
| Δ instability indicator | 0.64 | 0.79 | 0.54 |

The positive correlations suggest an active countercyclical fiscal policy that responds rather quickly to threats to the stability of the economy (see also Figure 5 that plots the fispol variable together with the (change in) the instability indicator. It appears that changes in the fiscal policy stance are closely related to changes in the economic stability variables that the policy makers are concerned about. The sign of the correlations suggest that it is instability that leads to fiscal policy rather than fiscal policy leading to instability. Increases in inflation, output gap and current account deficit are positively correlated with the fiscal policy indicator, i.e. they are associated with tightening fiscal policy. On the impact side, one would expect a tighter fiscal policy to have a negative correlation with inflation, output gap and current account deficit. Of course, by construction the cyclical component of the changes in the fiscal balance (the automatic stabilisers) are highly correlated with the output gap, but also the short-term changes in the structural balance (discretionary fiscal policy) follows the instability indicators.¹⁴

The fiscal policy variables appear to be more flexible than is sometimes assumed. The change in the fiscal policy variable (i.e. the change in the ratio of fiscal balance to GDP) is the sum of the change in the Revenue/GDP and Expenditure/GDP ratio. As noted above the average absolute value of the fiscal policy indicator is 1.4 percentage points of GDP, the average absolute change in the revenue ratio is 0.6 per

¹³ The instability indicator brings together the elements that concern policy makers: output gap, inflation and the current account deficit. It is calculated as:

$$\text{instability indicator} = [\text{output gap (\%GDP)} + \text{inflation} + \text{current account deficit (\% GDP)}] / 3$$

The assumption is that policy makers give equal importance to each of the three aspects of instability.

¹⁴ Of course, the three indicators of instability used here as correlated with each other. The correlation coefficient between the change in inflation and the change in the output gap is only 0.04 and between inflation and the change in the current account only 0.13, but the correlation between the change in the output gap and the change in the current account deficit is very high at 0.76. I also calculated the correlation coefficient between the fiscal policy indicators and the lagged instability indicators but these were all much smaller the ones reported in the table; fiscal policy appears to react rather quickly.

centage points and in the expenditure ratio 1.0 points. Within expenditure, both current and capital spending turn out to be relatively flexible in the short run. The changes in the revenue and expenditure ratios are also consistent: in most years they work to change the fiscal balance in the same direction.

The picture that emerges from the above analysis is one of a fairly active and consistent fiscal policy. Fiscal policy is not just concerned about the output gap; the correlations of table 1 suggest that it is as concerned with inflation and the current account deficit. This is what one would expect in developing countries subject to external shocks.

Figure 4 shows strong swings in the fiscal policy indicator around 1974/75. In this period Thailand suffered substantial external shocks. In 1972/73 these shocks were largely positive, due to the sharp increase in the world's prices of Thailand's commodity exports and to the strong growth of world trade. But in 1973/4 the first oil price shock hit the world, increasing the cost of imports substantially. These shocks were so severe, not only because of their size, but also because they came after a period of strong expansion and relative stability of the world economy.

The initial balance-of-payments effect of oil price increase was cushioned by two major factors;

- (a) the price boom for most export commodities in the period 1972/73;
- (b) the inflow of Vietnam War related U.S. military assistance, which averaged 1.6 percent of GDP during the early part of the 1970's.

However, the oil price increase did have immediate impact on domestic prices. Inflation went from 0.3 and 5.1 percent in 1971 and 1972 respectively, up to 15.4 and 24.4 percent in 1973 and 1974. This acceleration of inflation invited an immediate and strong policy reaction in the form of a tight fiscal and monetary policy. The government spending ratio was brought down from 17.7 percent in 1971 to 12.6 percent in 1974 while the government revenue ratio increased, resulting first in a smaller fiscal deficit and then a small surplus in 1974. Table 2 presents government spending and revenue at constant prices: it shows a sharp contraction of real government spending in 1974, combined with a sharp increase in real revenue.

The policy reaction to the external shocks of the early 1970s was very much a shock reaction to unanticipated external shocks and, with the benefit of hindsight, it can be said to have been an over-reaction. The increase in import prices (particularly oil) had been accompanied by an increase in prices of Thai exports and the international

recession that followed the first oil shock was mild and short-lived. Hence, the adverse impact of the external shocks on the Thai economy was probably less than the impact of the contractionary policies. The sharp upsurge of government spending and the relaxation of the tax effort in 1975 reflect the recognition of the authorities that they overreacted.

A new series of external shocks occurred around 1979/80: again a sharp increase in oil prices and a rise of the international interest rate. The immediate impact of these shocks on the Thai economy were the high rate of inflation and the growing current account deficit. In 1980 and 1981, the inflation rates were 19.8 and 12.7 percent, while the current account deficit became 6.4 and 7.6 percent of GDP, respectively. Unlike the first oil crisis, when public expenditure had been sharply curtailed, this time public spending continued to grow. But it gradually became clear that the adjustment to the second oil shock, as it occurred, was leading to a unsustainable situation. The public sector imbalances were huge, the external debt was rapidly rising and the debt-service burden had increased with the hike in world interest rates, export earnings were not growing rapid enough, and private investment was declining, leading to poor growth rates. The structural fiscal deficit was at too high a level.¹⁵ It was only around 1985/86 that serious attempts at reform were undertaken. As table 2 shows, growth of current government spending in constant prices stagnated between 1985 and 1988. Real government investment stagnated since 1980. As a result, the expenditure ratio fell sharply after 1985 and the revenue ratio increased after 1986, leading to a much smaller deficit in 1987 and surpluses in subsequent years.¹⁶

Fiscal policy in the 1990s was characterised, up to 1996, by relatively large budget surpluses. This was one of the ways in which Thailand tried to cope with the expansionary pressures arising from the large capital inflows. In 1996 the surplus came down sharply (Figure 1) and fiscal policy exerted a strong expansionary impulse (Figure 4). This could be defended by the fact that the economy started to slowdown in 1996. But this slowdown was partly due to the stagnation of exports and was accompa

¹⁵ As is clear from Figure 1 the structural deficit was rather high in the 1970s and early 1980s and several observers expressed their concern about this situation. However, the changes brought about by the second oil crisis deepened these concerns. Refer to equation (1) in section 2 of this paper: when interest rates are rising and growth rates falling, as they were in the early 1980s, the sustainable debt ratio and primary deficit are falling.

¹⁶ For more detail about policy making in the 1970s and 1980s see Jansen 1997 (chapter 4).

nied by an exceptionally large current account deficit (at 8 per cent of GDP) which made the fiscal expansion less appropriate.

Then, in July 1997, the combination of the overvaluation of the exchange rate and stagnating exports, the large current account deficit and rapidly growing external debt, the weakness of the financial system and the volatility of international financial markets, led to the collapse of the currency and the ensuing crisis (see Jansen 2001). Once the Baht was floated, the large outflow of capital led to a precipitous depreciation with disastrous effects on externally indebted corporations and financial institutions. The result was a rapid decline in demand and output.

The IMF came to the rescue and in the first Letter of Intent (LOI) of August 1997 a very tight fiscal and monetary policy was imposed, aiming at a fiscal surplus of one per cent of GDP through increased revenue (e.g. the VAT rate went from 7 to 10 per cent) and restrained expenditure. As discussed in section 2, during periods of capital outflows a contractionary fiscal policy ensures that

- domestic absorption is reduced to generate the current account surplus. To the extent that fiscal policy is more contractionary, the private sector needs to contract less which may have positive effects on investment and growth. Also, to the extent that the fiscal policy is more contractionary the current account will improve more and the exchange rate depreciation will be less which will be positive for externally indebted agents.
- an appropriate fiscal policy will help to maintain the confidence of international investors in the stability of the economy and help to stem the outflow. Tight monetary policy, with high interest rates, will further reduce the incentive to withdraw funds.
- These were the two arguments that the IMF used to explain its policy position, and it added the need for fiscal contraction to generate the fiscal resources to carry the cost of restructuring the financial sector (Lane et al. 1999).

Critics of the IMF, inside and outside of Thailand, have attacked this position. They pointed out that the Thai economy had been decelerating in 1996 and the first half of 1997; in fact, in the first two quarters of 1997 real GDP contracted. The fiscal contraction only added to the recession. Under these conditions, it is likely that the fiscal contraction reduced rather than increased the confidence of international investors (Pasuk and Baker 2000).

Also Stiglitz (2002) argued that a recession was on the way. Moreover, fiscal discipline had been excellent in the past and outstanding government debt very small. There was thus a need for and a possibility for fiscal expansion. These views contrast with those of Heller (1997) who argued for a contractionary fiscal policy in periods of capital outflow.

To some extent, these differences depends on views on what determines investors' confidence. Heller and the IMF argued that fiscal contraction gives international investors confidence in the management of the economy and in the economy's ability to repay debt. This confidence implies that they will not withdraw funds. Stiglitz argued that investors will loose confidence when they see that fiscal and monetary contraction leads the economy into a recession. It is possible, however, that both these views are beside the point: if international investors act on hunches, rumours, and contagion, they may take their money out no matter what the government does.

The other argument was that fiscal contraction was necessary to generate the funds to pay for the restructuring of the financial sector. The cost of this turned out to be quite substantial.¹⁷ However, Stiglitz' argument is that the contractionary fiscal and monetary policies made the financial distress much more severe than was necessary.

A fiscal contraction, particularly when it has multiplier effects on the private sector, will help to generate a current account surplus necessary to finance capital outflows. In this perspective, the choice for fiscal contraction or expansion reflects a priority for either debt repayment or the health of the domestic economy.

The IMF was apparently more concerned with the repayment of the short-term external debt and the restructuring of the financial system than with the state of the real economy. Some accused the IMF (and the US Treasury behind it) of using the crisis to force a full opening of the Thai economy to foreign investors, a critique that was made credible by the insistence of the IMF on including rapid privatisation of state enterprises in the conditionality package.

The fiscal surplus that was foreseen in the first two LOIs (of August and November 97) never materialised. Automatic stabilisers were at work. As capital outflows were larger than anticipated the exchange rate depreciated very sharply which led to a collapse of externally indebted corporations and financial institutions and a deep de

¹⁷ The current estimate is the interest payments on the bonds that were issued to finance the restructuring may cost between 3 to 4 per cent of GDP in the coming years.

cline in government revenue. Figure 2 shows the effect of automatic stabilisers due to the output fall (with about 10 per cent in 1998). But in 1997/8 another stabiliser was also at work: the drastic depreciation of the exchange rate had an effect on the fiscal balance. It reduced the profits of externally indebted corporations (and thus revenue from corporate income tax), it increased the local currency cost of debt service on external government debt and it affected the revenue from import duties (the depreciation led to an increase in the domestic currency price of imports, and thus to higher revenue, but after the depreciation the volume of imports collapsed). The IMF estimated that the exchange rate effect caused the fiscal deficit to deepen by 2 per cent of GDP in fiscal year 1997/8 (Lane et al. 1999, p 95). The indicator of the cyclical fiscal balance does not include this effect and would thus underestimate the automatic stabilisers and overestimate discretionary fiscal policy.¹⁸

In the third LOI (February 1998) the IMF accepted that the shortfall of the fiscal balance target needed not to be fully offset by additional measures and in subsequent LOIs during 1998 even fiscal expansion and increased deficits were accepted. The IMF explained these shifts from the fact that actual developments, in terms of capital outflows, currency depreciation and output collapse, were so much worse than foreseen that they justified and required a shift to an expansionary fiscal policy. Private investment and consumption had fallen much more than private income and the private saving surplus was more than enough to finance the capital outflow. Hence there was no more need for fiscal contraction (Lane et al. 1999).

In early 1999 funds that became available from the Japanese Miyazawa Plan enabled further fiscal expansion. Thailand also reduced, temporarily, the VAT rate from 10 to 7 per cent. Around that time, Thailand stopped drawing on the IMF facility (after about 14 of the available 17 billion dollar had been used).

Figure 4 shows that fiscal policy stance was expansionary in 1997 and 1998.

¹⁸ Note that the effect of the depreciation in 1997/8 is large because of the exceptionally large fall in the value of the Baht and the negative effects this had on the economy. Under normal circumstances, when the currency fluctuates around its equilibrium value, the effect of changes in the exchange rate are likely to be small. Also note that, under normal circumstances, a depreciation of the exchange rate may have an expansionary effect on the real economy as it increases demand for domestically produced goods. If it would have an expansionary effect on the fiscal balance (i.e. lead to a deficit), the impact would be procyclical rather than stabilising.

The negative value for the fiscal policy indicator implies an expansionary fiscal policy, but the indicator may be an incomplete indicator under the extreme conditions of these years. Table 2 helps to explain: how much expansion can you expect from a decline of primary expenditure at constant prices of 18 per cent even when there is an even greater decline in revenue at constant prices (of 23 per cent)?

During 1998 and 1999 there was a shift to a more deliberately expansionary fiscal policy but the effects are small (see table 2). Primary expenditure at constant prices continuously declined between 1997 and 2000, due to the collapse of government investment. Revenue at constant prices declined in 1997 and 1998 but started to rise again in 1999 when the economy recovered somewhat from the deep recession of 1998. The fiscal policy stance in 1999, 2000 and 2001 do not show the expansionary impulse that would have been appropriate (see Figure 4). Factors that may have kept the fiscal expansion below the desired level include the slow process of project preparation and the slow disbursement of foreign funds and concerns about the fiscal deficit as the cost of financial restructuring became clearer (Nabi & Shivakumar 2001).

At present (2002), the fiscal expansion is stronger and is credited with reviving the economy (Far Eastern Economic Review, 11 July 2002). The Thaksin government provided fiscal stimulus through a number of grassroots programmes with direct effect.¹⁹ But many argue that this fiscal stimulus is unsustainable as government debt is rising and is now close to 60 per cent of GDP, a limit above which, according to many, it would be dangerous to go. The large government debt is not so much due to the fiscal deficits, these were initially (in 1998 and 1999) mainly financed by running down Treasury cash balances that had accumulated during the years of surpluses. The debt is mainly due to the bonds issued to finance the restructuring of financial institutions.

To limit government debt at 60 per cent of GDP is fully arbitrary; the number may have been borrowed from the EU that used it in the stability pact that was formulated around the introduction to the common currency, but even in Euroland there are countries with still larger ratios. As argued in section 2, there may be three reasons to keep the debt/GDP ratio low. First, according to the Ricardian Equivalence theorem, a higher public debt will be reflected in increased private saving which would undermine

¹⁹ These include the programme in which each of the 77,000 villages receives Baht 1 million for village projects, a public works programme, subsidised health care, etc. In 2001 57 billion Baht was spent on the programmes (which would be equivalent to about 1 per cent of GDP) and for 2002 an expenditure of 92 billion was foreseen (*The Nation*, 3 July 2002).

the fiscal stimulus. However, as noted, there is little empirical support for the theorem. And this seems also the case in Thailand, the recovery in 2002 was, to a considerable extent, due to a boom in private consumption.²⁰ Secondly, in a volatile environment, a low debt ratio gives the government more freedom to manoeuvre and, thirdly, a high ratio may increase the risk premium the government has to pay on its debt. Here it is important to note that the government is financing its deficit on domestic financial markets. These markets are very liquid as financial savings outpace credit expansion; there seems to be no reason to fear that interest rates would rise.

More generally, it is appropriate to consider the desirable fiscal position from the overall macroeconomic balance. Private investment are low and the private sector has a substantial savings surplus. If the government would also move to a surplus, the current account surplus would become unnecessarily large. At this stage, Thailand does no longer need a large current account surplus as the external debt has fallen considerably. At the end of 2001 the external debt had fallen to USD 69 billion (down from 109 billion in 1997), equivalent to about 89 per cent of exports and 60 per cent of GDP. Most of the remaining external debt is long-term debt (short-term debt was only USD 14 billion). At the same time international reserves stood at USD 33 billion, so that the net external debt is relatively small. As Thailand does not need a large current account surplus for debt repayment, and as there is a substantial private sector savings surplus, there is a need for a public sector deficit to support aggregate demand, certainly as long as capacity utilisation in manufacturing is still below 60 per cent.

Still, the concerns about the debt seem to have reached the government; the first announcements for the 2003 budget hint at a considerable reduction of the fiscal stimulation. That may be premature for two reasons. The first reason is that, at present, the primary deficit is at a sustainable level. If the government wishes to keep its debt ratio at 60 per cent of GDP, the acceptable primary fiscal deficit is about 2 per cent of GDP, using modestly optimistic assumptions on GDP and export growth (for the calculations see the Appendix). That is more than the actual primary deficit of about one per cent of GDP in 2001. Moreover, the economy still needs the fiscal stimulus to get

²⁰ In the first quarter of 2002 private consumption at constant prices increased by 3.6 per cent year-on-year, an acceleration from the growth rates of 2.9 and 3.0 per cent for the third and fourth quarter of 2001. And indicators for April and May indicate even faster growth of consumption (Bank of Thailand *Inflation Report July 2002*). It appears that the expansionary effects of the fiscal stimulus dominates any concern about the government debt.

back on its feet, the more so because monetary policy is at present rather ineffective as financial markets are very liquid.

5 CONCLUSION

This paper analysed the scope for fiscal policy in developing countries in general and in Thailand in particular. Theories assert that, while authorities may manipulate fiscal variables, this will have no effect on real variables. These theoretical assertions are based on assumed flexible prices, rational expectations, perfect information, perfect capital mobility and perfect financial markets. Practical problems, such as long implementation lags and the inflexibility of fiscal variables, tend to make it impossible to successfully implement an active fiscal policy. Another practical problem may arise when the government debt is already high and when further fiscal expansion would push it over limits that are considered sustainable.

As fiscal variables cannot be timely manipulated and, even if they could, would have no effect on the real economy there is no scope for an active fiscal policy. The best the country can do is to reduce uncertainty for the private sector by sticking to stable fiscal policy rules that would keep the fiscal deficit at sustainable levels.

In fact, however, there are information and market imperfections and price rigidities, expectations are not fully rational and exchange rates are managed. Also the practical problems are exaggerated. Clearly, automatic stabilisers work quickly and some fiscal variables are open to quick discretionary intervention. This implies that fiscal policy is practically possible and can be effective in influencing the real economy. There is thus a rationale for fiscal policy.

The analysis of fiscal policy in Thailand shows that the authorities do make active use of fiscal policy and that the relative size of the variations in fiscal variables is significant. As the role of automatic stabilisers is rather limited due to structural reasons, the need for discretionary policy is great and it appears that such discretionary policy measures are undertaken timely and decisively with the purpose of keeping the economy on a stable path of growth.

The intervention of the IMF after the Asian crisis of 1997 first seemed to force Thailand into a pro-cyclical fiscal policy but, after some struggle, this was turned around and by 2001/2002 the economy started to benefit from the fiscal expansion. Current concerns about the level of government debt threaten to put a premature end to this fiscal stimulus. There are no good analytical grounds for a limit for government

debt at 60 per cent of GDP and the Thai economy still needs an expansionary fiscal policy.

FIGURES

Figure 1: Fiscal Balance as % of GDP

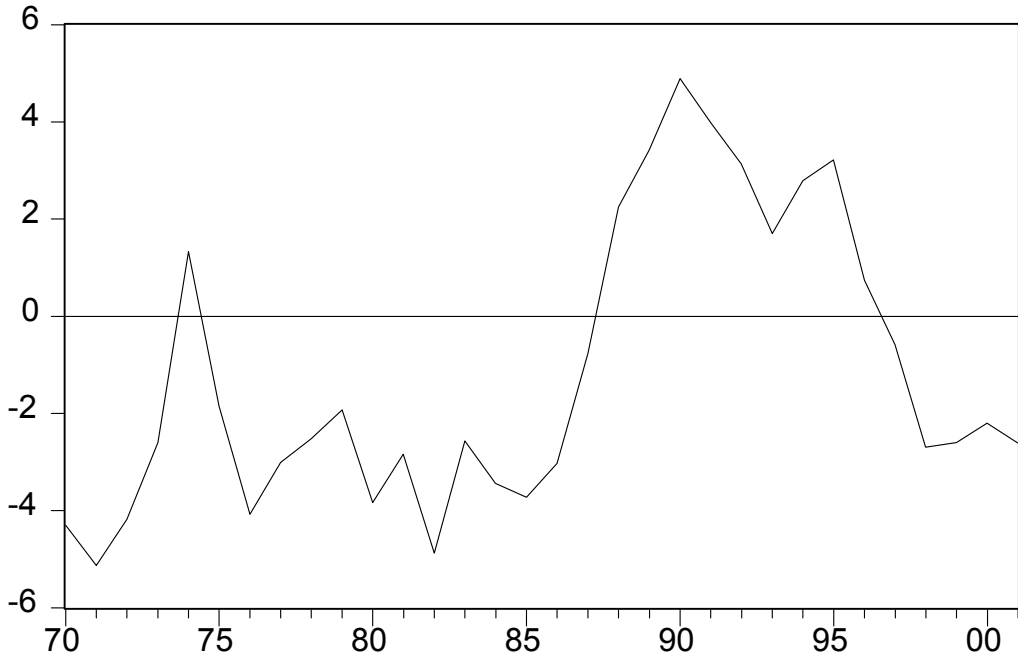


Figure 2: Cyclical balance as % of GDP

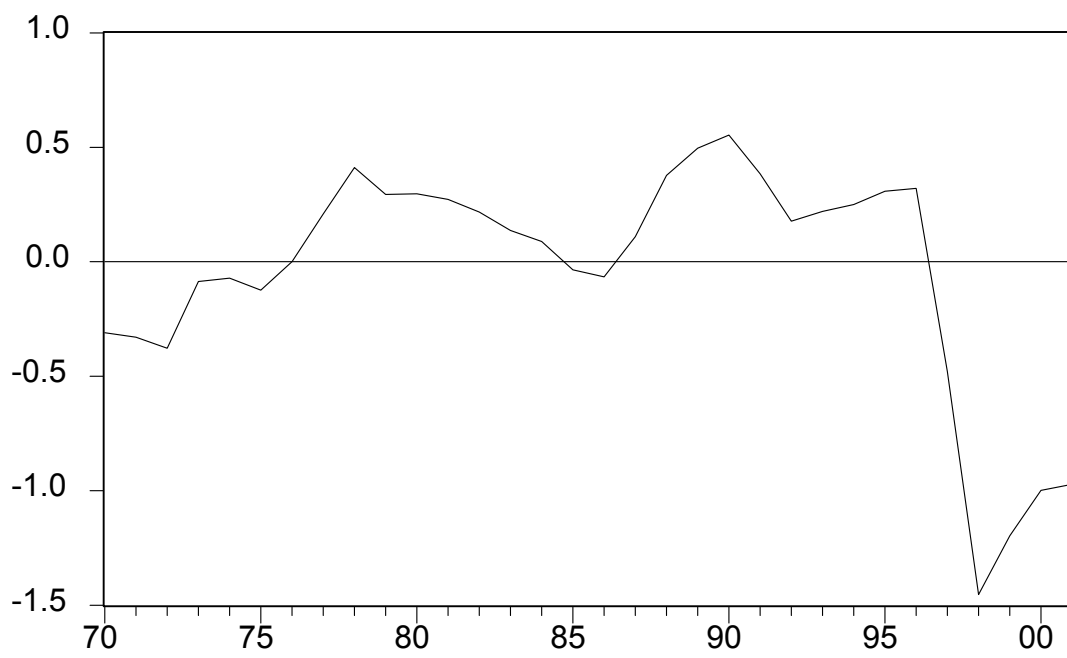


Figure 3: Structural Balance as % of GDP

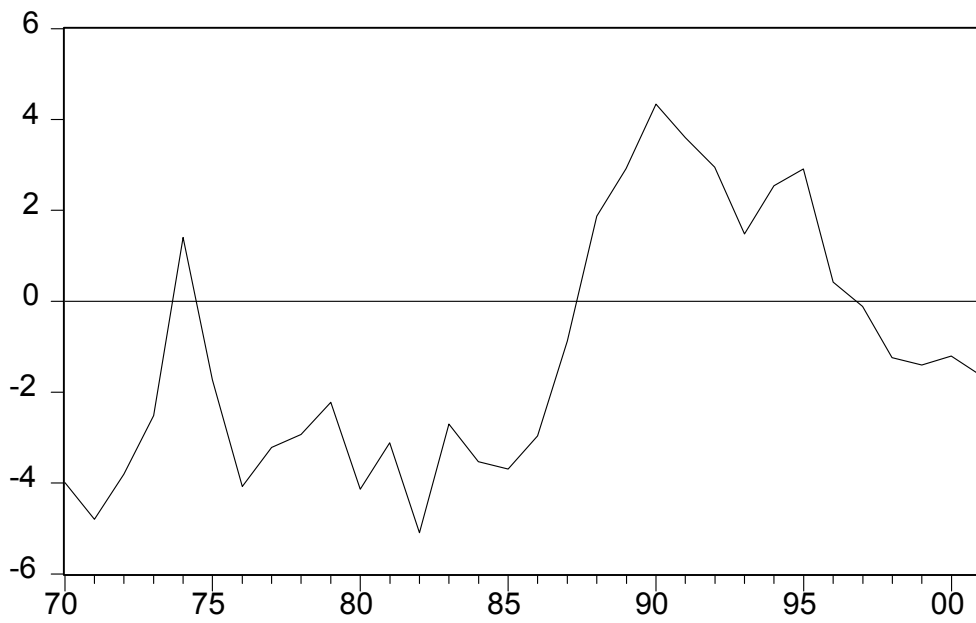


Figure 4 Fiscal Policy Indicator as % of GDP

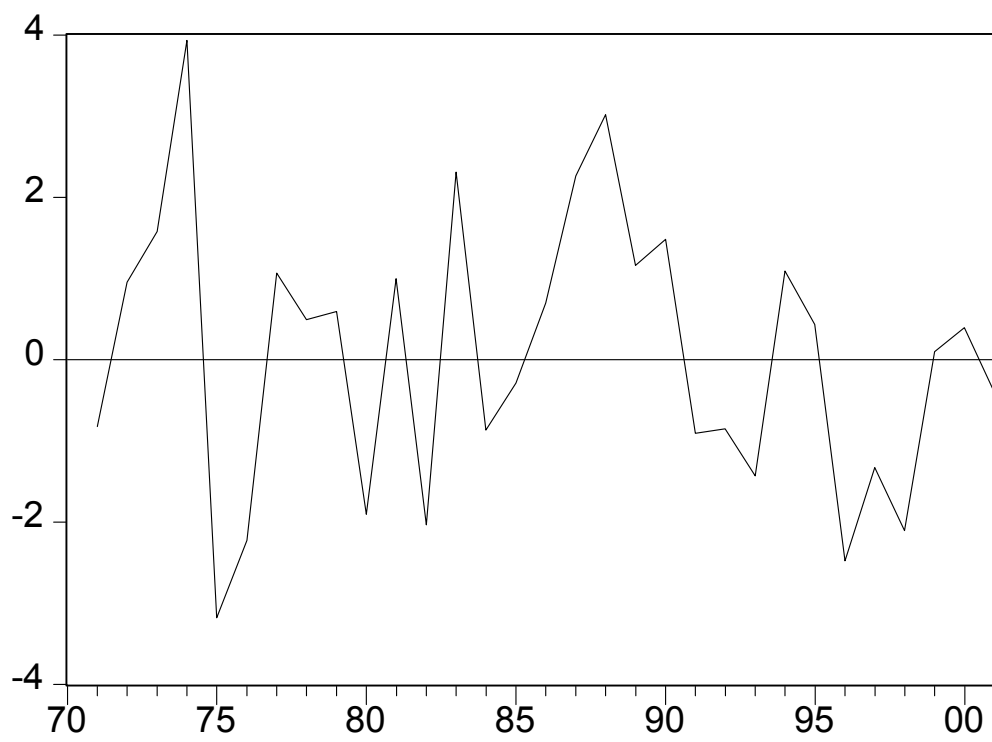
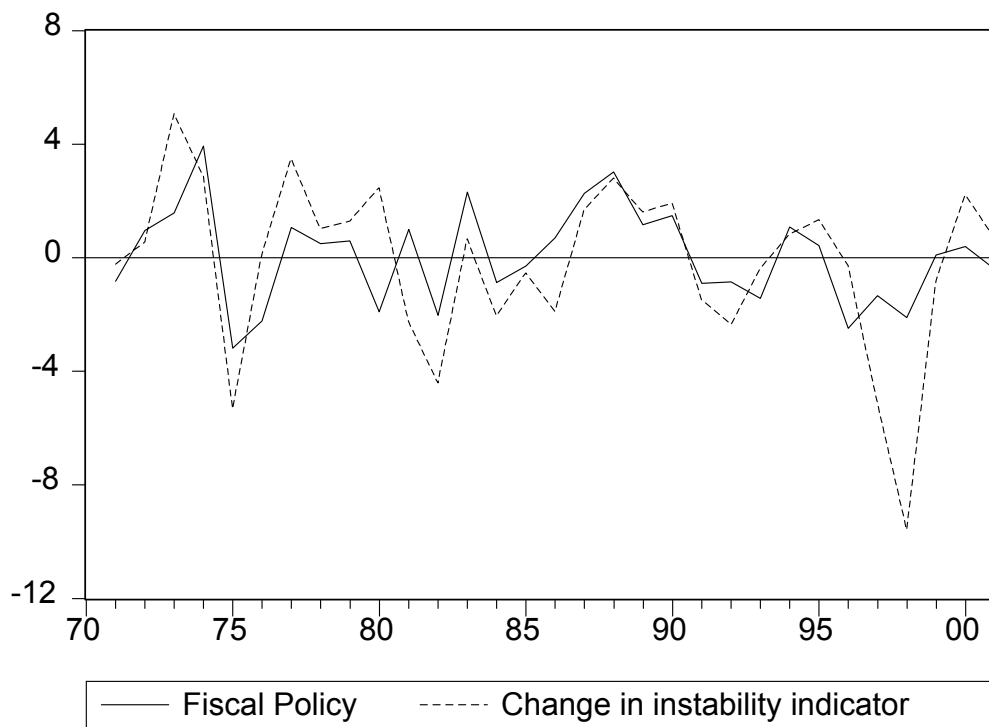


Figure 5 Fiscal policy and changes in instability indicator



TABLES

Table 2

| Government Expenditure and Revenue at constant 1988 prices (billion bahts) | | | | | | |
|---|--------------------------------|---------------------|---------------|-------------------|-------------------|---------------|
| | Primary Expenditure | | | Interest payments | Total Expenditure | Total Revenue |
| | Current excl. interest payment | Capital Expenditure | Total Primary | | | |
| 1970 | 50,1 | 25,5 | 75,6 | 5,2 | 80,8 | 60,4 |
| 1971 | 54,7 | 27,2 | 81,9 | 6,4 | 88,3 | 62,8 |
| 1972 | 50,2 | 23,7 | 73,9 | 13,3 | 87,2 | 65,5 |
| 1973 | 56,0 | 20,0 | 76,0 | 7,8 | 83,8 | 69,0 |
| 1974 | 53,9 | 13,5 | 67,4 | 7,5 | 74,9 | 82,8 |
| 1975 | 62,9 | 20,8 | 83,7 | 9,0 | 92,7 | 81,2 |
| 1976 | 74,5 | 30,3 | 104,7 | 8,5 | 113,2 | 85,5 |
| 1977 | 81,9 | 31,5 | 113,4 | 9,1 | 122,5 | 100,0 |
| 1978 | 86,5 | 32,1 | 118,6 | 12,5 | 131,1 | 110,3 |
| 1979 | 100,9 | 30,0 | 131,0 | 8,3 | 139,2 | 122,5 |
| 1980 | 116,8 | 36,7 | 153,5 | 13,4 | 166,9 | 131,8 |
| 1981 | 116,7 | 35,9 | 152,5 | 17,3 | 169,8 | 142,3 |
| 1982 | 132,4 | 37,7 | 170,1 | 20,1 | 190,2 | 140,5 |
| 1983 | 135,6 | 34,8 | 170,4 | 24,9 | 195,3 | 167,6 |
| 1984 | 149,5 | 32,0 | 181,4 | 28,5 | 209,9 | 170,8 |
| 1985 | 153,6 | 37,3 | 190,9 | 34,6 | 225,5 | 181,1 |
| 1986 | 153,7 | 34,1 | 187,8 | 38,8 | 226,6 | 188,5 |
| 1987 | 152,5 | 33,0 | 185,4 | 39,1 | 224,5 | 214,0 |
| 1988 | 154,2 | 28,7 | 182,9 | 40,2 | 223,1 | 258,2 |
| 1989 | 171,6 | 35,5 | 207,0 | 41,6 | 248,6 | 308,3 |
| 1990 | 185,6 | 49,1 | 234,6 | 35,7 | 270,3 | 365,5 |
| 1991 | 208,2 | 65,8 | 274,0 | 29,6 | 303,6 | 387,7 |
| 1992 | 239,6 | 93,1 | 332,7 | 23,9 | 356,6 | 411,9 |
| 1993 | 264,4 | 122,8 | 387,2 | 19,4 | 406,6 | 448,7 |
| 1994 | 277,4 | 136,3 | 413,6 | 16,3 | 429,9 | 505,1 |
| 1995 | 296,3 | 146,0 | 442,2 | 9,4 | 451,7 | 546,2 |
| 1996 | 330,7 | 215,8 | 546,6 | 6,2 | 552,7 | 575,8 |
| 1997 | 322,3 | 271,9 | 594,2 | 10,1 | 604,3 | 549,8 |
| 1998 | 325,0 | 163,5 | 488,5 | 11,1 | 499,6 | 425,4 |
| 1999 | 344,9 | 140,9 | 485,8 | 30,2 | 516,1 | 441,7 |
| 2000 | 365,4 | 117,8 | 483,2 | 36,5 | 519,7 | 453,9 |
| 2001 | 389,1 | 113,7 | 502,8 | 38,5 | 541,3 | 462,2 |

APPENDIX

1 Automatic stabilisers and discretionary fiscal policy

In calculating the impact of the automatic stabilisers and the size of the structural fiscal balance we follow the OECD methodology (see Heller et al. 1986, Chouraqi et al. 1990, Van den Noord 2000).

The actual budget balance is made up of an underlying structural balance and of a cyclical component. The structural balance is the balance that would occur if the economy were producing at its potential capacity level and the size of the balance is determined by the revenue structure and longer-term expenditure pattern. Over the economic cycle, actual output will divert from its potential or trend level and this output gap will induce effects on revenue and expenditure.

The approach consists of three steps:

1. estimate potential output or trend output and calculate the output gap
2. estimate the income elasticity's of the various elements of revenue and expenditure
3. use the output gap and the elasticity's to calculate the cyclical component of the actual fiscal balance; the difference between the actual balance and the cyclical component is the structural (or cyclically-adjusted) fiscal balance.

Estimating the trend in potential output is complicated as long-term growth is determined by many factors, including growth of the labour force, saving and investment patterns, productivity growth.

In this study I have used two methods to estimate potential output. The first is the production function approach: we fitted a production function, particularly focusing on the level of investment. The second approach was to determine the level of trend output through a statistical method by applying a Hodrick-Prescott filter to time series data of actual output. The output gap is calculated as the difference between the actual level of output and the potential or trend level.

Time series data were used to calculate the income elasticity of the various types of taxes and government expenditure. The following results were obtained:

| | | | |
|----------------------|------|---------------------|------|
| Personal income tax | 1.48 | Current expenditure | 1.00 |
| Corporate income tax | 1.52 | Capital expenditure | 1.00 |
| Indirect taxes | 1.18 | | |
| Trade taxes | 0.95 | | |
| Other revenue | 1.10 | | |

These elasticity's estimates are similar to those obtained in other studies (see Warr & Nidhiprabha 1996, 156, where they summarise elasticity estimates from a number of studies).

In calculating the cyclical component of the budget balance I followed the model of Van den Noord (2000), which may be summarised as follows. The actual fiscal balance (FB), as percentage of GDP, is made up of a cyclical and a structural component.

$$(1) \quad FB_{\text{actual}} = FB_{\text{structural}} + FB_{\text{cyclical}}$$

The structural component is related to the trend level of output

$$(2) \quad FB_{\text{structural}} = \frac{\Sigma T_i^* - G^*}{Y^*}$$

where G^* and T^* are the structural components of expenditure and the various types of taxes and Y^* the level of potential output.

Actual revenue and expenditure may differ from the structural level because of differences between actual and potential output (the output gap).

$$(3) \quad \frac{T_i^*}{T_i} = \left(\frac{Y^*}{Y} \right)^{\varepsilon_i} ; \quad \frac{G^*}{G} = \left(\frac{Y^*}{Y} \right)^{\gamma}$$

where ε_i and γ are the income elasticity's of taxes and expenditure. From these relationships, the cyclical component of the fiscal balance can be derived:

$$(4) \quad FB_{\text{cyclical}} = \Sigma \frac{T_i}{Y} \left[1 - \left(\frac{Y^*}{Y} \right)^{\varepsilon_i - 1} \right] - \frac{G}{Y} \left[1 - \left(\frac{Y^*}{Y} \right)^{\gamma - 1} \right]$$

Once the cyclical component has been calculated in this way, the cyclically-adjusted or structural fiscal balance can be obtained by deducting the cyclical component from the actual fiscal balance.

As mentioned, two alternative estimates of Y^* were made, one using a production function and the other using the Hodrick-Prescott filter. This gave two alternative estimates of the cyclical component. However, the differences were not large. In both

cases the size of the cyclical component was small and, on the whole, the pattern over time similar, although there were small differences in timing and extent of fluctuations. In the analysis in the paper I have used potential output as derived from the production function.

Warr and Nidhiprabha (1996, chapter 7) use another method to analyse fiscal policy. They compare the planned budget deficit, as announced in the budget, with the actual outcome at the end of the fiscal year. The difference between the planned and the actual deficit, they interpret as the impact of automatic stabilisers. Changes in the planned budget reflect discretionary fiscal policy. They find rather substantial differences between planned deficits and actual outcomes and conclude therefore that automatic stabilisers are powerful, a rather different conclusion from the one reached above. They explain the role of the automatic stabilisers from the practice of the budget process in Thailand: this process starts with making a forecast of revenue (based on last year's performance and predicted growth and inflation). The planned revenue then determine the planned expenditure that can be budgeted. When, during the year, growth turns out to be higher than expected revenue will also be higher than expected but expenditure do not adjust in the short run. This leads to a lower deficit or a surplus and this exerts a countercyclical impact. Three comments can be made about their approach:

- they expect most of the automatic adjustment to come from the revenue side, when actual revenue differs from planned revenue due to changes in economic conditions. But, in fact, also actual expenditure differ from planned expenditure (see Warr and Nidhiprabha 1996, 146). Over the period 1970-1990 that they cover planned expenditure consistently exceeds actual expenditure by, on average, 1.2 per cent of GDP. This underspending seems to be an administrative feature of the fiscal system and gives a bias to their estimate of the automatic stabilisers. But, while there is underspending in every year, the extent of underspending differs; it is, for instance, very high (2.6 per cent of GDP) in 1976 and very low in 1980 (0.04 per cent). It appears that in periods of rapid inflation (1973/4, 1979/80) the extent of underspending falls.
- the gap between planned and actual revenue is, on average, slightly higher (in absolute terms 1.5 per cent of GDP) and it fluctuates more, from a shortfall of revenue at 3.1 per cent of GDP in 1982 to an excess of 4.2 per cent in 1990. In fact, these

numbers appear unrealistically high. The average Revenue/GDP ratio is relatively low at 14.7 per cent. For automatic stabilisers to add 4 percentage points to this ratio or to take 3 percentage points away, would require very income-elastic taxes. Still, reported income elasticity's for revenue in Thailand are fairly low (see also tables 7.9 and 7.10 in Warr and Nidhiprabha 1996).²¹

- It is thus unlikely that the difference between the planned and actual deficit is fully due to the automatic stabilisers. It is likely that discretionary fiscal policy *during the fiscal year* also makes a contribution. Leeatham (1991) presents an account of fiscal policy during the 1980s. He gives detailed account of ad hoc measures, taken during the year in response to changing circumstances, on both the expenditure and the revenue side. Not all of these interventions were successfully implemented but some were and would thus have contributed to the actual outcome of the fiscal balance.

In conclusion, it appears that the estimates of Warr and Nidhiprabha overestimate the contribution of automatic stabilisers and underestimate the role of discretionary fiscal policy. But, more important than the different views on the relative contributions, in their study and in this one it is shown that the fiscal balance has a significant stabilising function in the Thai economy.

2 Sustainable primary fiscal deficit.

The budget identity for the government can be written as (see Agenor & Montiel 1996, chapter 4)

$$(2) \quad G + iB + i^*ED_g = T + \Delta B + E\Delta D_g$$

Total government expenditure consist of non-interest government expenditure (G) plus payments on domestic government debt (iB) and payments on external government debt (i*ED_g) and they are financed from tax revenue (T) and the net issue of new domestic debt (B) or new foreign debt (D_g). E is the nominal exchange rate, i is the nominal interest on domestic debt and i* the international interest rate.

²¹ Another problem arises from changes in the budget preparation politics. Robinson et al (1991, 14) report that in the early 1980s there was a tendency to overestimate planned revenue so that there was a tendency in that period for the actual deficit to exceed the planned deficit. A major shift occurred with the 1986/7 budget when tighter revenue forecasts were introduced.

The budget identity of the central bank

$M = B_c + ER - NW_c$; or in flow terms

$$(3) \quad \Delta M = \Delta B_c + E\Delta R - \Delta NW_c$$

The monetary base (M) is balanced by the holdings of the central bank of government debt (B_c), the holdings of foreign reserves (R) and the net worth (or accumulated savings) of the central bank (NW). Total government domestic debt outstanding is in the hands of the central bank or in the hands of the general public (B_p)

$$(4) \quad B = B_c + B_p$$

The profits of the central bank are (assuming no operating cost)

$$(5) \quad \Delta NW_c = i^* ER + iB_c$$

Combining (1) and (2), and making use of (3) and (4) gives the consolidated budget identity of government and central bank:

$$G + iB_p + i^* ED_g = T + i^* ER + \Delta B_p + \Delta M + E\Delta D_g - E\Delta R$$

or, defining $F_g = D_g - R$, the net external debt of the government

$$(6) \quad (G - T) + i^* EF_g + iB_p = \Delta B_p + \Delta M + E\Delta F_g$$

Equation (6) can be used to analyse the sustainability of the fiscal deficit (see de Melo 1993). Divide by GDP (PY) and use lower case to indicate shares of GDP.

Note that

$$\Delta B = \beta B_{t-1},$$

$$\Delta M = \mu M_{t-1}$$

$$\Delta F = \gamma F_{t-1}$$

where β, μ, γ is the growth rate of privately held government debt, money and net foreign debt respectively.

$d = g - t$ is the primary fiscal deficit

$$d = \beta b_p + \mu m + E\gamma f_g - i b_p - i^* E f_g$$

(N.B. we have deleted the time lag subscripts to ease the notation. As we are looking for balances that are sustainable in the long run, this is acceptable).

A fiscal deficit, the financing of which implies a continuous increase in the ratios of domestic and/or foreign debt to GDP, is clearly unsustainable. At some stage the deficit will have to fall. There are limits to the extent to which the government can engage in domestic and external borrowing and they are likely to be limits to the extent of inflationary finance that are acceptable. In view of such limits there are also limits to the fiscal deficit. What is the *sustainable fiscal deficit*?

Assume there is a level b^* beyond which the ratio $b_p = B_p/PY$ cannot or should not rise, then, to remain constant at that level the growth of government bonds should be the same as the growth of nominal income, or $\beta = g + \pi$.

Also note that $i = r + \pi$.

Also assume that the growth of the money stock will translate into inflation and that inflation will undermine the demand for money and reduce the real money holdings $m = M/PY$. Assume that there is a level of m^* below which the government does not wish real balances to fall (i.e. that there is a level of inflation beyond which the government does not wish to go). To keep money balances stable at that level requires that $\mu = g + \pi'$, where π' is the target level of inflation.

Inserting this in equation (6) gives:

$$d = (g + \pi) b_p - (r + \pi) b_p + (g + \pi') m + E\gamma f_g - i^* E f_g$$

or:

$$d = (g - r) b_p + (g + \pi') m + E\gamma f_g - i^* E f_g$$

Assume that there is a limit to the level of net external debt that a country can borrow or will wish to borrow. It is illustrative to write

$$Ef_g = \frac{EF_g}{PY} = \frac{EF_g}{PX} * \frac{PX}{PY} = h * x$$

where h is the debt/export ratio and x the export/GDP ratio. There is a clear limit to the debt/export ratio as high ratios will negatively affect the creditworthiness of the country and will lead to increases in risk premiums on interest rates.

For the debt/export ratio, h , to remain constant requires that the growth rate of debt is equal to the growth rate of exports. When measured in local currency this requires:

$$\dot{EF}_g = \dot{E} + \gamma = g_x + \pi$$

further note that $i^* = r^* + \pi^*$. Bringing these things together gives

$$d = (g - r)b_p + (g + \pi')m + (g_x + \pi - \dot{E})hx - (r^* + \pi^*)hx$$

The real exchange rate is defined as $RER = e = EP^*/P$, so that the change in the RER is

$$\dot{e} = \dot{E} + \pi^* - \pi$$

this results in

$$(7) \quad d = (g - r)b_p + (g + \pi')m - (g_x - r^* - \dot{e})hx$$

Taking base year values for b_p , m and hx and making assumptions about the growth rates of GDP and exports and for the interest rates, acceptable inflation and the expected rate of depreciation will generate the *sustainable primary deficit*, i.e. the deficit that would keep the debt ratios constant. Of course, if it is considered acceptable that the debt ratio increase still further, the primary deficit could be higher and reversibly when it is considered that the debt ratios are already too high.

Assuming the following values for the parameters (which are close to end 2001 values or expected 2002 values):

| | |
|--------|------|
| r | 0,03 |
| π' | 0,03 |
| r* | 0,03 |
| e | 0 |
| h | 0.25 |
| x | 0.65 |
| m | 0,11 |
| b | 0,6 |

The sustainable primary deficit that follows from equation (7) and these assumed parameter values then fully depend on the assumptions with respect to GDP and export growth. If it is assumed that there will be no GDP and export growth, the sustainable fiscal balance would be a surplus of 1.4 per cent of GDP. If it is assumed that, in the medium term, GDP would grow at 5 per cent and exports also at 5 per cent, a primary deficit of 2 per cent of GDP would ensure stability of the debt ratios. In 2001 the primary fiscal deficit stood at about one per cent of GDP.

REFERENCES

- Agenor, P.R. and P.J. Montiel (1996) *Development Macroeconomics*, Princeton University Press, Princeton, New Jersey.
- Argy, V. (1994) *International Macroeconomics*, Routledge, London
- Auerbach, A.J. and D. Feenberg (2000) 'The Significance of Federal Taxes as Automatic Stabilizers', in *Journal of Economic Perspectives*, 14,3, pp 37-56.
- Barro, R.J. (1997) *Macroeconomics, fifth edition*, MIT Press, Cambridge, Mass.
- Bird, G. (1998) *International macroeconomics, theory, policy and applications, second edition*, MacMillan Press, Houndsmills, Basingstoke.
- Blanchard, O.J. and S. Fischer (1993) *Lectures on Macroeconomics*, MIT Press, Cambridge Mass.
- Budnevich, C.L. (2002) *Countercyclical Fiscal Policy*, UNU WIDER Discussion Paper nr 2002/41, UNU WIDER, Helsinki
- Chouraqui, J.C., R.P. Hagemann and N. Sartor (1990) *Indicators of Fiscal Policy: a Re-examination*, OECD Department of Economics and Statistics Working Paper.
- Corbo, V. & L. Hernandez (1994) *Macroeconomic Adjustment to Capital Inflows, Latin American versus East Asian Style*, World Bank Policy Research Paper no 1377, World Bank, Washington D.C.

- De Melo, M. (1993) 'Fiscal Adjustment in High-Debt Countries', in R. Faini & J. de Melo (eds) *Fiscal Issues in Adjustment in Developing Countries*, St Martin's Press, New York, p 99-120.
- Ffrench-Davis, R. & S. Griffith-Jones (1995) *Coping with Capital Surges, The Return of Finance to Latin America*, Lynne Rienner Publishers, Boulder.
- FitzGerald, E.V.K. (2001) 'Short-term Capital Flows, the Real Economy, and Income Distribution in Developing Countries', in S. Griffith-Jones, M.F. Montes & A. Nasution (eds) *Short-term Capital Flows and Economic Crisis*, Oxford University Press, Oxford, p. 29-51.
- Heller, P.S. (1997) *Fiscal Policy Management in an Open Capital Regime*, IMF Working Paper nr WP/97/20, IMF Washington D.C.
- Heller, P.S., R.D. Haas and A.S. Mansur (1986) *A Review of the Fiscal Impulse Measure*, IMF Occasional Paper no 44, IMF Washington D.C.
- IMF (1992) *World Economic Outlook, October 1992*, IMF, Washington D.C.
- Jansen, K. (2001) 'Thailand, Financial Crisis and Monetary Policy', in *Journal of Asia Pacific Economy*, 6:1, p 124-152
- Jansen, K. (1997) *External Finance in Thailand's Development, an interpretation of Thailand's growth boom*, MacMillan Press, London (301 pp)
- Kahler, M. (ed) (1998) *Capital Flows and Financial Crisis*, Manchester University Press, Manchester.
- Kopits, G. (2000) *How Can Fiscal Policy Help Avert Currency Crises?*, IMF Working Paper nr WP/00/185, IMF Washington D.C.
- Kopits, G. & S. Symansky (1998) *Fiscal Policy Rules*, IMF Occasional Paper nr 162, IMF Washington D.C.
- Kwan, C.H., D. Vanderbrink & Chia Siow Yue (eds) (1998) *Coping With Capital Flows in East Asia*, Institute of Southeast Asian Studies, Singapore.
- Lane, T., A.R. Gosh, J. Hamann, S. Phillips, M. Schulze-Ghattas & T. Tsikata (1999) 'IMF-supported Programs in Indonesia, Korea and Thailand: a Preliminary Assessment', IMF Washington DC.
- Leeahtam, Pisit (1991) *From Crisis to Double Digit Growth*, Dokya Publishing House, Bangkok.
- Lopez-Mejia, A. (1999) *Large Capital Flows: A Survey of the Causes, Consequences, and Policy Responses*, IMF Working Paper 99/17, IMF, Washington D.C.

- Nabi, I. and J. Shivakumar (2001) *Back from the Brink: Thailand's Response to the 1997 Economic Crisis*, World Bank, Washington D.C.
- Robinson, D, Yangho Byeon, Ranjit Teja and Wanda Tseng (1991) *Thailand: Adjusting to Success, Current Policy Issues*, IMF Occasional Paper no 85, IMF Washington D.C.
- Taylor, J.B. (2000) 'Reassessing Discretionary Fiscal Policy', in *Journal of Economic Perspectives*, 14,3, pp 21-36
- Toye, J. (2000) 'Fiscal Crisis and Fiscal Reform in Developing Countries', in *Cambridge Journal of Economics*, 24, p 21-44.
- Van den Noord, P. (2000) *The Size and Role of Automatic Fiscal Stabilizers in the 1990s and Beyond*, Economics Department Working Papers no 230, OECD, Paris.
- Walsh, C.E. (2000) *Monetary Theory and Policy*, MIT Press, Cambridge, Massachusetts.
- Warr, P. and Bhanupong Nidhiprabha (1996) *Thailand's Macroeconomic Miracle, Stable Adjustment and Sustained Growth*, World Bank and Oxford University Press, Kuala Lumpur.
- Zee, H.H. (1996) 'Empirics of Crosscountry Tax Revenue Comparisons', in *World Development*, 24, 10, pp 1659-1671.