Economic survey

Monetary policy in Fiji

B. Bhaskara Rao and Rup Singh

In order to achieve its central policy objectives of maintaining low inflation and a stable currency, this article finds that the Reserve Bank of Fiji should switch back from using the bank rate as its main policy instrument to use of the money supply. It is also recommended that the bank rate and deposit rates be raised to levels comparable with Australia and New Zealand in order to reduce capital outflows and increase savings. Further, the Reserve Bank of Fiji should consider widening its bounds for variations in the exchange rate to reduce the need for occasional large devaluations.

B. Bhaskara Rao is Professor of Economics with the Department of Economics at the University of the South Pacific, Suva.

Rup Singh is a Lecturer in the Department of Economics, University of the South Pacific, Suva.

> Monetary stability makes development possible. But no tricks of monetary policy—certainly not artificially low interest or exchange rates, despite the claims that are sometimes made for them—can truncate the long, slow grind of accumulating human and other capital and building economic, political and social institutions that lead to sustained increases in income
> Garnaut (2005:103).

It is usual to begin a country survey on monetary policy with a list of the objectives of its central bank and then examine their successes and failures. However, as the International Monetary Fund has noted, in the past central banks were notorious for being inscrutable (International Monetary Fund 2006).[1] Following the active involvement of the international agencies in good governance practices, many central banks now prize clarity in explaining their objectives and decisions to the public. The Reserve Bank of Fiji follows such good governance practices and its statutory responsibilities are stated as follows

- to regulate the issue of currency, and the supply, availability and international exchange of money
- to promote monetary stability
- to promote a sound financial structure, and
- to foster credit and exchange conditions conducive to the orderly and balanced economic development of the country (International Monetary Fund 2006).[2]

The first objective coincides with two frequently stated objectives of central banks:

to regulate the issue of currency (money) with a view to maintaining its internal and external value through price and exchange rate stability. Waqabaca and Morling (1999)[3] give a similar interpretation to the main objective of the Reserve Bank of Fiji, although they do not highlight the importance of the stability of the exchange rate. They note that

> [m]onetary policy in Fiji is conducted to achieve the Reserve Bank's objective of low inflation. The Reserve Bank does not have a formal inflation target, but is generally comfortable with inflation rates of around 2–3 per cent (Waqabaca and Morling 1999:5).

Frequent policy interventions may be necessary to achieve this objective through liquidity management to promote monetary stability (the second objective).

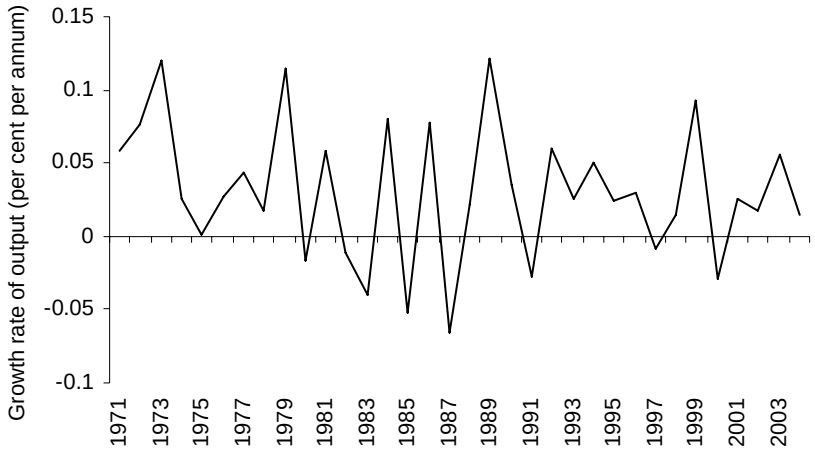
The Reserve Bank of Fiji has a limited role in the next two objectives: to develop a sound financial structure and improve the efficiency of transactions as a foundation for the balanced development of the economy. These objectives may not need interventions on a frequent basis. Furthermore, a central bank's role is limited if the banking and corporate laws have weaknesses. At best a central bank can only ensure that the laws are implemented effectively . To achieve these larger objectives, timely commissions of enquiry, with a view to reforming banking and corporate laws, are necessary. It is also doubtful if a central bank can play a direct and a larger role in improving the rate of growth of output. As Garnaut has noted, monetary policy can only provide monetary stability to make development possible. Low interest and exchange rate regimes, which can be mistakenly imposed by central banks to increase investment rates and net exports, cannot 'truncate the long, slow grind of accumulating human and other capital and building economic, political and social institutions that lead to sustained increases in income' (Garnaut 2005:103).

Issues concerning changes to the banking and corporate laws, policies to accumulate human and non-human capital, and institutional reforms are beyond the scope of this survey of monetary policy in Fiji. Similarly, ongoing debates on whether Fiji and other Pacific island countries should form currency boards or currency unions, have floating rates or fix their exchange rates and so on, are put to one side.[4] As Garnaut (1995) has observed, the need for such major changes arises mainly due to the failure of the monetary authorities to maintain a stable value of the currency and the failure of the governments to discourage rent-seeking institutional practices. We examine the scope for monetary policy to achieve stable monetary conditions by maintaining the internal and external value of money. In other words, this survey looks at whether monetary policy in Fiji can be, and is, used effectively to maintain stable inflation and exchange rates.

Fiji's growth experience

The growth experience of Fiji has been mixed, with short episodes of both rapid and sharply reduced growth. Real GDP growth has been moderate, averaging around 3 per cent per annum during 1971 to 2002. Fluctuations in output have been influenced by both domestic and external influences. Furthermore, the political coups of 1987 and 2000 reduced the average growth rate. During 1971 to 1986, the average growth rate was 3.6 per cent and after the first coups in 1987 and until the second coup in 2000, it declined to 2.6 per cent. In the period from 2000 to 2002, the average growth rate declined further to 1.3 per cent (Figure 1). Political instability appears to have reduced the trend in the growth trajectory as its negative impacts are noted in almost all spheres of economic activity. These events have been responsible for the loss of consumer and investor confidence, massive declines in tourist arrivals, and rapid exodus of human

Figure 1 **Fiji: growth of real GDP, 1971–2004** (per cent per annum)



Source: Data to 2002 from International Monetary Fund, 2004. *International Financial Statistics*, International Monetary Fund, Washington, DC; data for 2003–2004 estimated from Reserve Bank of Fiji, 2006. *Quarterly Review*, March, Reserve Bank of Fiji, Suva.

Figure 2 **Fiji: capital formation (private), 1985–2004** (per cent per annum)

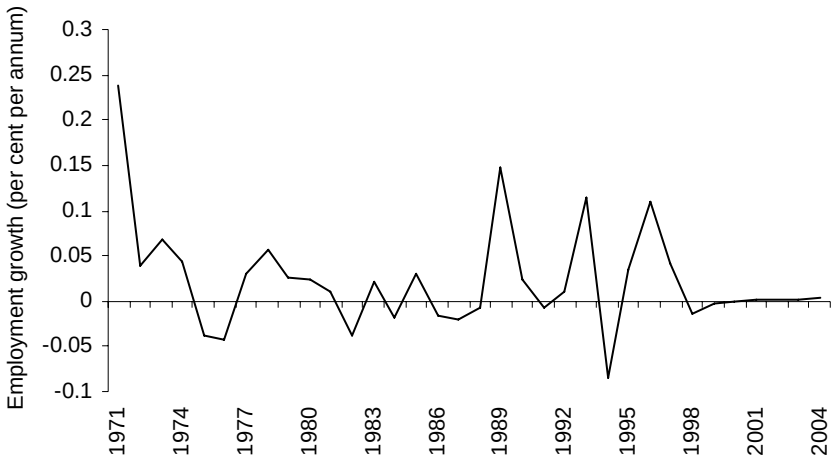
Note: Capital series are estimated with the perpetual inventory method. The assumed depreciation rate is 4 per cent. Data for 2003 and 2004 are estimates.
Source: Reserve Bank of Fiji and authors' calculations.

and financial capital to neighbouring industrialised economies. Massive migration of skilled workers must affect productivity and the trend growth of Fiji's output. With unbalanced rural–urban growth, both skilled and semi-skilled populations have migrated from rural areas to urban centres, creating intense competition for employment, housing and other social infrastructure.

Capital formation in the private sector has declined from an average annual growth rate of 5 per cent during the period prior to 1987 to about 0.5 per cent afterwards (Figure 2). However, employment has grown at an average annual rate of 2 per cent, although it has remained static since the second coup (Figure 3). The low investment rate remains a major problem. The ratio of public and private investment to output (the investment ratio) has declined from above 20 per cent in the 1970s to around 12 per cent in the mid 1980s, and has remained low since. The private investment ratio declined from 15 per cent in 1971 to below 10 per cent in 1987 due to the political events. However, recently, new tourism and commercial building projects and investment in residential properties have taken place. This is perhaps due to the low lending rates and improvements in processing of investment proposals by the Fiji Trade and Investment Bureau. Nonetheless, generally, private investment has been on a downward trend. Various incentives since 1987—such as the Tax Free Zone scheme, Schedule 5 Export Tax Incentive, depreciation allowances, hotel investment incentives, and the forward loss carrying option—have failed to induce private investment to the levels of the early 1970s and 1980s.

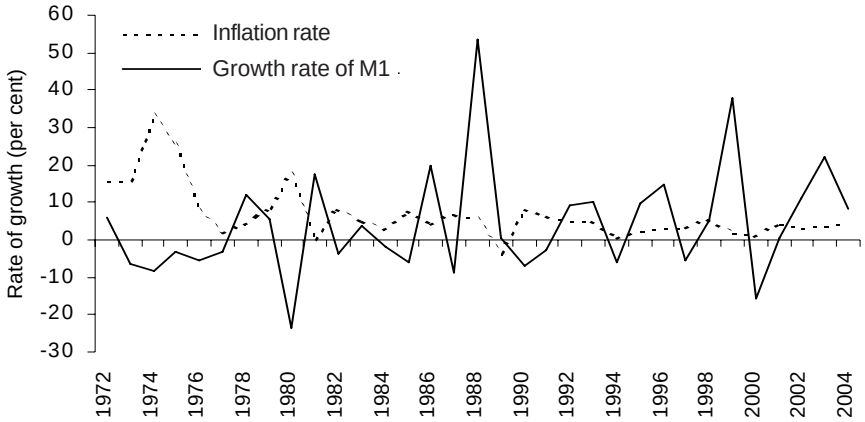
The inflation rate and the rate of growth of money supply (M1) are shown in Figure 4. The average inflation rate from 1971 to 2002 was 6.7 per cent. In the pre and post 1987 coup periods it was 10.1 per cent and 3.7 per cent, respectively. Inflation was higher in the pre 1987 coup period mainly due to the oil-

Figure 3 **Fiji: rate of growth of employment, 1971–2004** (per cent per annum)



Note: Data for 2003 and 2004 are estimates.
Source: Reserve Bank of Fiji and Fiji Bureau of Statistics.

Figure 4 **Fiji: growth rate of real money supply and prices, 1972–2004** (per cent)



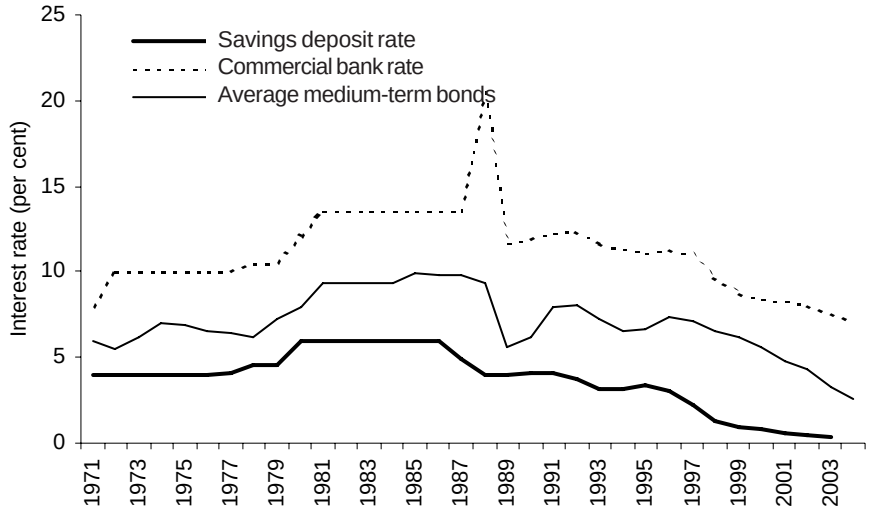
Source: International Monetary Fund, 2004. *International Financial Statistics*, International Monetary Fund, Washington, DC.

price hikes of the 1970s. With the decline in domestic demand following the 1987 coups, inflation has generally been low. The Reserve Bank's measure of inflation (CPI, excluding volatile items) is even more stable. Wage pressures remain subdued and therefore there are no serious threats for inflation. The real money supply (M1) grew at an average rate of 4.2 per cent over the 1971–2004 period. However, there were sharp increases in 1988 and 1999. While the former was the result of the RBF misreading market signals following the first coup, in 1999 growth in money supply was mainly to accommodate the high growth in output recorded in that year. In comparison to the growth in output, it can be said that money growth has been slightly higher.

Interest rates have been moderate (Figure 5). While the average lending rate has been around 7.8 per cent, the average two to three year time-deposit rate has been just over 2.5 per cent, which gives a margin as high as 5.3 per cent. The Reserve Bank's policy rate has been manoeuvred to implement monetary policy. It was low for a brief period in the 1990s and then tightened after 2000. Following a decline in the period from 2001 to 2003, it has again been increased.

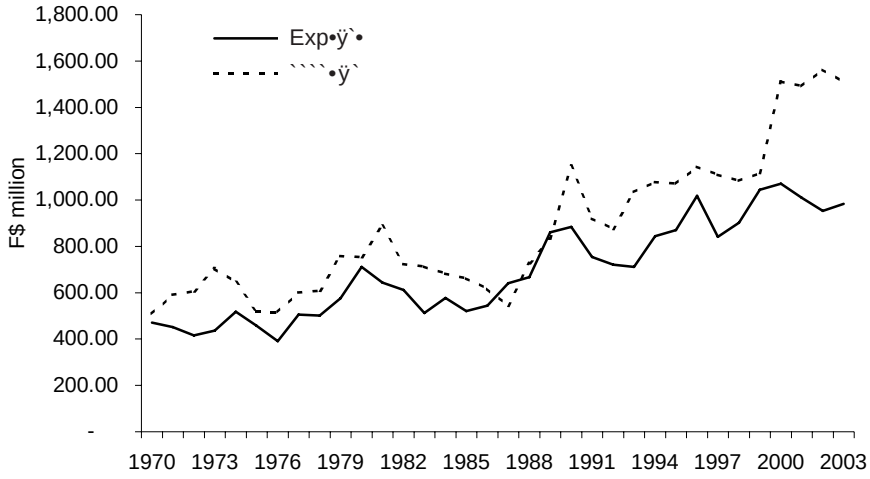
The nominal and real exchange rates have been fairly stable, except during the devaluations in 1988 and 1998. The first two devaluations in 1988 were to contain the excessive capital outflows that even the high interest rates and capital controls failed to capture adequately. The 1998 devaluation was necessary to maintain Fiji's international competitiveness in order to avoid negative implications of the deterioration of the terms of trade resulting from an overvalued currency. Vulnerability to terms of trade shocks together with a narrow export base is harmful for the economy. Fiji is a price taker in the world market and therefore international forces have the potential to affect trade prices significantly. Therefore, low production costs of exports and competitive export quality are the key to turning the tables in Fiji's

Figure 5 **Fiji: interest rates, 1971–2004** (per cent)



Source: International Monetary Fund, 2004. *International Financial Statistics*, International Monetary Fund, Washington, DC.

Figure 6 **Fiji: exports and imports, 1970–2003** (F$ million)



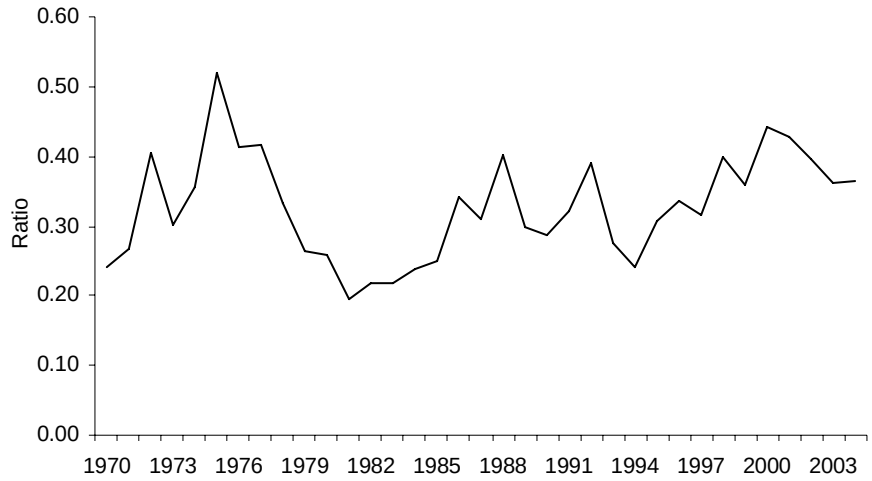
Source: International Monetary Fund, 2004. *International Financial Statistics*, International Monetary Fund, Washington, DC.

favour. Nonetheless, Fiji has benefited from the bullish global growth, as well as the trade arrangements and export promotion policies implemented in the early 1990s. However, erosion of the major trade concessions now present serious consequences for output, exports, employment and the livelihoods of a significant proportion of the population who depend on the declining industries of sugar and textiles.

The trade deficit has been widening—while exports have grown on average by around 3 per cent since the 1987 coups, imports have increased by 7.4 per cent (Figure 6). In light of this serious increase in the trade deficit, one is alarmed by the deteriorating foreign exchange reserves position (Figure 7). Note the trends in reserves in the years of devaluation—there were sharp but temporary pick-ups in reserves in 1987 and 1998. Also note the trends in the four decades since 1970. The reserves are lowest from 2000 and this is a cause of concern for the Reserve Bank of Fiji. But it should be noted that yet another devaluation may only provide temporary relief from a potential balance of payments crisis. Unless exports increase strongly, it is hard to vaccinate the economy with temporary expenditure-switching policies such as devaluations.

Government finance figures indicate that the underlying deficit is high and it has frequently resorted to short-term borrowing, mostly from domestic sources. Domestically, the Fiji National Provident Fund is the largest lender. The government is expecting that the public debt which is over 50 per cent of GDP will decline, although it is not clear from the 2005 Budget how will this eventuate in light of the lower-than-expected growth projections. Therefore, it is hard to anticipate an improvement in the government's financial position. Against this backdrop, we anticipate a low growth scenario in the short to medium term. With a

Figure 7 **Fiji: reserves as proportion of imports, 1970–2004**



Source: International Monetary Fund, 2004. *International Financial Statistics*, International Monetary Fund, Washington, DC and Reserve Bank of Fiji.

depressed investment climate, the decline in the productivity of the major sectors of the economy should not be unexpected. These translate into gloomy long-term growth prospects for Fiji.

Monetary policy developments

The single most important objective of many central banks is the stability of the value of money, that is, a low and steady inflation rate and a stable exchange rate. To avoid confusion, we call these objectives targets, and the policies used to achieve these targets, instruments. Therefore, the desired inflation rate of 2–3 per cent is a target and the money supply and the bank rate are instruments. Similarly, we call the desired holdings of foreign exchange a target, and the exchange rate and bank rate instruments.[5] By comparison, in countries with currency boards (for example, Argentina and Hong Kong) the exchange rate is the target. The exchange rate is also a target in some countries with flexible exchange rates (for example, Singapore) and in some countries with managed exchange rates (for example, Malaysia). The instruments are their large holdings of foreign exchange reserves and the bank rate.

However, many countries have managed exchange rate systems (for example, Australia, New Zealand, India, Israel, Fiji and Sweden) and their monetary authorities target both inflation and the exchange rate, but allow the exchange rate to vary within predetermined upper and lower bands.[6] Since the early 1990s, in virtually all of these countries with managed exchange rate systems the monetary policy instrument is the bank rate. Prior to the 1990s, the instrument was the money supply. A small change in the bank rate may be adequate to achieve both internal and external stability of the currency, provided domestic expenditures and capital flows are sensitive to changes in the bank rate. If there is little sensitivity, which seems to be the case in many developing economies, the effectiveness of the bank rate as the instrument of monetary policy is weak and uncertain. According to Jha (2003), in India it is difficult to reduce the inflation rate through changes to the bank rate because aggregate demand is not sensitive to interest rate changes and the bank rate does not have significant effects on the structure of market interest rates. One may also add that capital flows are unlikely to respond to the bank rate in India and other developing economies.[7] Therefore, according to Jha, in developing economies it is difficult to stabilise the internal and external value of money through adjustments to the bank rate only.

Our brief review of the objectives of monetary policy indicates that in the post-war period there has been no change in the main objective of many central banks. Central banks are committed to maintaining the internal and external value of money, although they may not state explicitly the rate of inflation and the exchange rate they wish to maintain. However, since the 1990s virtually all countries have switched from using monetary aggregates (for example, money supply) as their main instrument of monetary policy to the bank rate. Therefore, we may ask whether the bank rate is an effective monetary policy instrument for achieving a stable value for money.

After the high rates of inflation of the 1970s and 1980s and the subsequent downturns in economic activity, there have been no major episodes of stagflation (see Cecchetti et al. 2006). There is also a claim that policy rules—such as increasing the bank rate by more than the inflation rate to contain inflationary pressures—are better than discretionary policy adjustments. Consequently, it is difficult to evaluate whether the aforesaid shift to the bank rate as an instrument has or hasn't made monetary policy more effective. Justifications for policy rules and choice of the bank rate as the monetary policy

instrument, therefore, are generally based on *a priori* arguments, indirect evidence, and simulation exercises.

Poole (1970) has argued that to minimise fluctuations in the level of economic activity, money supply should be used as an instrument when the LM (money demand) relation is stable whereas the rate of interest is the appropriate instrument when the LM relation is unstable. The switch from money supply to interest rate as the monetary policy instrument has taken place in industrial economies due to the instability of their money demand functions. The instability in turn was due to the financial innovations following the liberalisation policies of the late 1980s. However, many developing economies such as India and Fiji have also switched to using the bank rate as their monetary policy instrument, although there is no evidence that their liberalisation policies have had large enough effects to make their demand for money functions unstable. Rao and Singh (2005a, 2005b) found that demand for money functions in Fiji and India are stable. Similarly Singh and Kumar (2006a, 2006b) found that demand for money functions in 12 developing economies—Fiji, Vanuatu, Samoa, Solomon Islands, India, Indonesia, Philippines, Thailand, Kenya, Malawi, Jamaica and Rwanda—are temporally stable. Nevertheless, these countries have switched to using the bank rate as their instrument of monetary policy.

Cecchetti et al. (2006) have used data from 24 (mainly industrial) economies to compare the effectiveness of monetary policy in the pre and post 1990 periods: 1983QI to 1990QIV and 1991QI to 1998QIV, respectively. This research is of interest because central banks in these countries have shifted from using money supply to the bank rate as their monetary policy instrument from the 1990s. The researchers found that monetary policy has become more effective (in 21 out of 24 countries) since the 1990s in stabilising the inflation rate.[8] These findings are consistent with Poole's theoretical results (Poole 1970). In contrast, as noted earlier, Jha (2003) has found that in developing economies, such as India, it is difficult to reduce the inflation rate by increasing the bank rate.[9]

Monetary policy

It is useful to review monetary policy in Fiji with these international developments as background. It is also important to pay attention to Garnaut's observation, quoted at the outset, as to whether monetary policy has succeeded in providing stable monetary conditions. In the applied growth literature, mainly based on cross-country data, there is weak evidence that financial variables have small and direct effects on the growth rate. Such effects seem to be significant only when certain policies, collectively known as the International Monetary Fund and World Bank conditionalities, have been implemented—these are similar to the policies suggested by Garnaut (2005).

There are other issues that need answers. How effectively has monetary policy been used in Fiji to achieve its objectives? Why is the Reserve Bank using the bank rate instead of money supply (since 1997) as its instrument of monetary policy? Has monetary policy become more effective since this switch? Can monetary policy be used to increase the economic growth rate? Answers to these questions are useful not only to review the performance of monetary policy but also to develop a pragmatic vision for its future course. We hope to provide, albeit tentatively, answers to a few of these questions.

From the stated statutory objectives and the recent policy statements it is clear that the main objective of the Reserve Bank is to achieve a stable monetary environment by maintaining the internal and external value of the currency. Therefore, a low and steady

rate of inflation and a stable exchange rate are its two most important monetary policy targets. The instruments used are small discretionary adjustments, on a daily basis, to the exchange rate and the sale and repurchase of Reserve Bank's short-term paper to manage liquidity conditions, and less frequent adjustments to the bank rate to reduce anticipated inflationary pressures.

For the bank rate to serve as an appropriate policy instrument, it is first necessary to verify, as pointed out by Poole (1970), that fluctuations in economic activity are due to fluctuations in the LM relationship, which in turn are due to instability in the demand for money. Furthermore, there is a need to establish that aggregate demand adequately responds to changes in the bank rate through its effects on other interest rates. To maintain a stable exchange rate—permitting only variations within a predetermined range—the Reserve Bank needs either adequate foreign exchange reserves and/or a significant response of capital inflows to changes in the bank rate.

According to some unpublished and published research at the RBF, these requirements to achieve internal price stability have been adequately satisfied. Katafono (2001) found that the demand for money (M1) in Fiji is unstable. This would justify the switch from money supply to the bank rate as the monetary policy instrument. Waqabaca and Morling (1999) found that a 1 per cent rise in the (real) bank rate reduces the growth rate of output by about 0.3 percentage points. They also found that a 1 per cent increase in the output gap (actual less potential output) leads to a 0.2 per cent increase in the inflation rate. These results support the conclusion that changes to the bank rate have the appropriate effects on domestic demand and the inflation rate. What is missing in these studies is an answer to the question of whether the bank rate has any effects on capital inflows and/or imports. But this is not a serious gap because until recently, the Reserve Bank's holdings of foreign exchange reserves seemed to be satisfactory (see Figure 7). Foreign exchange reserves as a proportion of imports (goods and non-factor services) increased in 1997 and 1998 and were equal to about five months of imports.[10] This position remained stable until the coup in 2000. By the end of 2005, however, foreign exchange reserves had declined to about 3.5 months of imports. Three devaluations, two in 1987 by 33 per cent and another in 1998 by 20 per cent, did not seem to have had lasting effects on reserves and the current account balance. The effects of these devaluations, after an initial positive impact, seemed to diminish slowly; the gap between imports and exports has been widening, especially since 1999.

Therefore, it is first necessary to examine the adequacy of research at the Reserve Bank, which seems to have influenced its choice of the bank rate, instead of a monetary aggregate, as its instrument of monetary policy. We examine Katafono's findings on the demand for money, albeit briefly, since some of its weaknesses have already been pointed out in Rao and Singh (2005a). The findings of Rao and Singh are supported by the recent works by Singh and Kumar (2006a, 2006b). We then examine, in some detail, Waqabaca and Morling's (1999) research on the effects of the bank rate on output and inflation.

Demand for money

Undoubtedly, estimates of the demand for money in Fiji by Katafono (2001) were an improvement on the *ad hoc* empirical work that had been done up to that time. Nevertheless, there was persistent confusion in Katafono's study between estimates based on the Johansen maximum likelihood procedure and those based on the general-to-specific approach of Hendry. Three price variables—the rate of interest on saving deposits, the treasury bill rate and the real exchange rate—

were introduced into the specification. Consequently, perhaps due to some co-linearity between the two interest rates, the coefficient of the treasury bill rate was positive. A major weakness in Katafono's results was that the income elasticity of demand for money was about 0.5, contrary to expectations and repeated claims that it is unity. These empirical anomalies are an indication that either there were some specification weaknesses and or the methods of estimation were inaccurate. Consequently, Katafono's finding that the demand for money in Fiji is temporally unstable is difficult to accept. As stated earlier, Rao and Singh (2005a) and Singh and Kumar (2006a, 2006b) have found that demand for money in Fiji is stable.[11]

Effects of the bank rate

Waqabaca and Morling (1999) argued that although it might be expected that in a developing economy like Fiji, real interest rate effects on aggregate demand (and therefore on output) would be weak, surprisingly their empirical results show that these effects are significant. From their regression estimates of a relationship between output and its determinants, they conclude that a one per cent increase in the real short-term rate of interest would reduce output growth by 0.34 percentage points.[12] While this finding seems impressive, there are weaknesses in their specification and possibly in the estimation method. Their specification, which is a variant of the general-to-specific method (GETS) of the LSE-Hendry approach, with an adjustment process based on the error correction model (ECM), and with minor changes in notation to highlight the ECM part, is as follows[13]

$$\Delta \ln Y_t = \alpha_0 + \sum \beta_{1i} \Delta \ln Y_{t-i} + \sum \beta_{2j} \Delta \ln Y^*_{t-j} + \sum \beta_{3k} \Delta r_{t-k} + \sum \beta_{4n} \Delta Z_{t-n} - c_1 \left(\ln Y_{t-1} - \frac{c_2}{c_1} \ln Y^*_{t-1} \right) + \varepsilon_t \quad (1)$$

where Y is real GDP, Y^* is GDP of trading partners, *r* is the real short-term interest rate, Z is a vector of other short-term influences such as shocks in agricultural supplies, the terms of trade, real exchange rate, and budget deficits, and e is the error term.

Although Waqabaca and Morling (1999) have many useful insights into the implementation of monetary policy in Fiji and use a relatively modern econometric approach, there are some worrying specification weaknesses. They have used, albeit in an *ad hoc* manner, the GETS approach.[14] In the GETS specification there is a clear distinction between the long-run equilibrium relationship and the short-term dynamic adjustment. In equilibrium, dynamic adjustments cease and therefore all the lagged changes in the variables become zero. (For an exposition of the GETS methodology, see Rao 2006a, 2006b). Therefore, it is necessary to start with a more general specification in which all the lagged values of the hypothesised variables affecting output are included in the ECM part and their current and lagged changes appear in the dynamic adjustment part of the specification

$$\Delta \ln Y_t = \alpha_0 + \sum \beta_{1i} \Delta \ln Y_{t-i} + \sum \beta_{2j} \Delta \ln Y^*_{t-j} + \sum \beta_{3k} \Delta r_{t-k} + \sum \beta_{4n} \Delta Z_{t-n} - c_1 \left[\ln Y_{t-1} - \frac{1}{c_1} \left(c_2 \ln Y^*_{t-1} + c_3 r_{t-1} + c_4 Z_{t-1} \right) \right] + \varepsilon_t \quad (2)$$

It is not clear why the one period lagged values of the real rate of interest and the variables in the Z vector (for example, agricultural supply and terms of trade shocks) were not included in the ECM part of their equation. It would have been useful not only to know if these variables have permanent long-run effects on the level of output, but also to determine if the coefficients of the changes in the rate of

interest and its significance are free from specification biases in the ECM part of the equation.

A more serious specification weakness in Waqabaca and Morling's output equation (which is common in *ad hoc* specifications in applied growth studies with time-series data) is that they assume output is demand determined in Fiji. In other words, they have ignored supply-side variables in their output equation. At the least, a few supply-side variables, known as the conditioning variables in the applied growth literature—employment, capital (or investment ratio) and a time trend to capture technical progress—should have been included in their reduced-form output equation. Given these specification weaknesses, the validity of their estimated coefficients and their t-ratios are doubtful. It is likely that, as commonly expected, interest rates may not have significant effects, neither in the short or long run, on the level of output and its growth rate. Therefore, until further work is carried out on the effects of the rate of interest on output, it is difficult to justify the use of the Waqabaca and Morling findings as a basis for formulating monetary policies.

In comparison to their output equation, the Waqabaca and Morling specification of the inflation equation is perhaps one of the best for the determination of inflation in Fiji. They assume that there is a long-run relationship between the price level (CPI), output gap, unit costs of production, and import prices. Therefore, their GETS-based specification is

$$\Delta \ln P_t = \alpha_0 + \sum_{1i} \alpha \Delta \ln P_{t-i} + \sum_{2j} \alpha \Delta \ln w_{t-j} + \sum_{3k} \alpha \ln \Delta P^m_{t-k} + \sum_{4n} \alpha \Delta \ln (Y - YP)_{t-n} - c_1 \left[\ln P_{t-1} - \frac{1}{c_1} \left(c_2 \ln (Y - YP)_{t-1} + c_3 \ln w_{t-1} + c_4 \ln P^m_{t-1} \right) \right] + v_t \quad (3)$$

where Y is output, YP is potential or capacity output, P is an index of CPI, w is nominal unit labour costs, and P^m is an index of import prices in domestic currency.[15] It is not known from the reported results in Table 5 whether the estimated coefficient of 0.176 is that of the level of the output gap or its change. However, their subsequent discussion implies that it is the coefficient of the level of the output gap. Therefore, it may be said that a 1 per cent increase in the output gap increases the price level by 0.176 per cent. This effect is increased to 0.35 if the unit costs variable is dropped, because some of the effects of the output gap on inflation are through increased wage costs. It is necessary to validate the Waqabaca and Morling (1999) findings with further research before they are used as a basis for formulating real world economic policies.

Monetary policy in Fiji

Our review of Fiji's economy reveals that there are some fundamental economic problems that cannot be corrected by monetary policy alone. Being an insignificant player in world markets, Fiji is heavily dependent on trade and is vulnerable to external shocks. The importance of such factors is reflected in the large variations in the growth rate of output (see Figure 1). Williams and Morling (2000) and Waqabaca and Morling (1999) suggest that much of the short-term fluctuations in output and current account deficits are beyond monetary policymakers' direct control. Similarly, in spite of various investment incentives provided by the government and artificially low interest rates maintained by the Reserve Bank, the investment ratio in Fiji did not improve. This is because investors place higher priority on good governance, effective property rights, and of course macroeconomic stability, in comparison to investment

incentives and low interest rates—a point also emphasised by Garnaut (2005). In such a situation, the best policy option for monetary authorities is to establish broad and stable macroeconomic conditions by maintaining the domestic and external value of the currency.

However, on another front, it is fair to say that the Reserve Bank has succeeded in preventing major economic crises precipitated by the financial panic due to the two coups. According to Siwatibau (1993), during the first coup of 1987 Fiji lost massive reserves through capital outflows. Both the external loan facility and domestic credit dried up in the two weeks following the political events. The demand for money (cash) and other liquid assets rose sharply but the Reserve Bank initially failed to respond appropriately. It misread the market signals and accommodated increased demand and fuelled further capital outflows. However, after realising the mistake, it quickly tightened capital outflows and credit through capital controls and higher interest rates. The statutory reserve deposit ratio was increased, the overnight lending facility was withdrawn, an interest penalty was levied on overdue advances by banks, and the discount rate, inter-bank rate and treasury bill rate were all increased. While the treasury bill rate increased from 2 per cent to 20 per cent, the discount rate on promissory notes reached 24 per cent. Siwatibau noted that the higher interest rates failed to reduce capital outflows, which necessitated tighter capital controls. While the increased restrictions curtailed capital flight, it was still possible to transfer large amounts across national boarders. With a deteriorating external position and massive capital outflows, the Reserve Bank was forced to devalue the domestic currency twice in 1987—initially by 17.75 per cent and then again by 15.25 per cent. Following these measures and application of tight fiscal discipline, there was a turnaround in economic activity by the end of 1987. Reserves rose, commercial bank liquidity increased, and market interest rates declined. Since then, monetary policy has been generally accommodative, especially after the export incentives were adopted in 1989.

With the experience of the first coups behind them, the Reserve Bank seems to have successfully managed the crisis of the coup in 2000 and avoided devaluation. Credit was quickly tightened and capital controls were enforced by reducing transaction limits and increased documentary requirements. Credit ceilings were also imposed on individual banks. Minimum lending, rediscount and repurchase rates were increased up to 15 per cent. The Reserve Bank policy rate (bank rate) was increased to 5 per cent in anticipation that the public would hold money domestically.

Since 2001, monetary policy has been more accommodative. High levels of liquidity have been maintained and the interest rates gradually reduced through reductions in the bank rate (perhaps on the basis of the Waqabaca and Morling research) to encourage growth of output and improve investment activity. However, these interest rate reductions did not succeed. Although GDP growth rate has recovered from –3.0 per cent in 2000 to 2.6 per cent in 2001, it declined to 1.7 per cent in 2002. Since then the Bureau of Statistics has stopped publishing national accounts data. Many commentators conjecture that the rate of growth of GDP during 2003 to 2005 might have been worse because of declining exports, the low investment ratio, increased imports, and almost neutral budgets.[16] This suspicion is supported by recent Reserve Bank concerns about the increased imports. As a result, the bank rate was increased in mid 2004 to slow down the economy (which perhaps had already slowed), to dampen consumption and reduce imports. The suspicion of a low level of recent output growth is further corroborated by the

modest rate of inflation. The average inflation rate (CPI) in the post 2000 coup years has been 2.9 per cent.[17] The Reserve Bank might have overreacted to the rise in the rate of inflation from 0.8 per cent in 2002 to 4.1 per cent in 2003. In 2004, the inflation rate declined to 2.8 per cent and it is doubtful if this decline was the consequence of the rise in the bank rate from 1.25 per cent in 2003 to 1.75 per cent in 2004. Subsequently, towards the end of 2005, the bank rate was increased to 2.25 per cent and in early 2006 to 3.25 per cent, with a further warning that the bank rate will increase if consumption expenditure does not slow down. Perhaps these changes to the bank rate were based on Katafono's finding that the demand for money in Fiji is unstable and Waqabaca and Morling's findings that changes in the bank rate have significant and desirable effects on output and price levels. However, as noted earlier, there is no support for Katafono's findings and it is doubtful that Waqabaca and Morling's results are robust. Furthermore, there is no evidence that the inflation rate is on the rise due to an overheated economy. Therefore, it is hard to justify these upward adjustments to the bank rate to slow down inflationary pressures.

Do increases in the bank rate reduce consumption and imports, as expected by the Reserve Bank of Fiji? Rao (2005) and Rao and Singh (2004) have found that consumption expenditure in Fiji does not respond to changes in interest rates. However, they also found that consumption may respond mildly to a reduction in the interest rate spread, which is the difference between the long and short-term interest rates. In other words, consumption expenditure can be modestly reduced if the availability of credit declines.[18] However, it is doubtful that a modest decline in consumption will reduce imports by a significant amount. Therefore, the recent monetary policy measures of the Reserve Bank may not reduce consumption and imports, as expected.

This is not to say that the upward adjustments to the bank rate are not necessary for a different reason. Given that the bank rates (and deposit rates) in Australia and New Zealand have been recently increased to 5.75 per cent and have always been well above the bank rate (deposit rate) in Fiji, it is amazing that Fiji has managed so far to prevent large outflows of capital. We suspect that, in recent times, these outflows might have considerably increased due to the ease with which overseas bank accounts can be opened and managed due to improvements in information technology. The low deposit rates in Fiji are also likely to encourage exporters and importers to invest their funds for short or long periods overseas. Needless to say, all such transactions, legal or illegal, would adversely affect foreign exchange reserves.

The low bank rate policy did not lead to lower lending rates in Fiji because of the higher margins set by the banks and other financial institutions. Currently, for example, the margin is 5.3 per cent; in contrast, in Australia it is only 2 per cent. Although the lending rates are similar, there is a significant difference in the deposit rates. If the bank rate in Fiji were to be raised to a rate comparable to Australia and New Zealand, say to 5.75 per cent, and the deposit rate to say 6 per cent, the Reserve Bank could negotiate with the banks to cut their margins significantly. In return, the Reserve Bank may consider reducing the statutory deposit ratio to reduce the costs imposed on the banks of its stabilisation policies. This is in line with the stated objective of implementing more market-oriented policies in the financial sector. A further gradual increase in the bank rate in Fiji by 2.5 per cent may eventually increase the lending rates to 9.8 per cent to 10 per cent if banks reduce their margins by 1.5 per cent. The increase in the deposit rates would be likely to reduce capital outflows and may even give a one-shot boost to the saving rate. It is difficult to argue that the

increased lending rate would reduce further the already low investment rate. As pointed out earlier, lack of the investor confidence seems to be related to changes in the bank rate and may be the main reason for the current low investment rate.

A vision for monetary policy

It is hard to say which are the best indicators of economic stability: political stability, good governance, a stable rate of growth of output, stability of the financial sector, and secure property rights are all potential indicators of stability. While not disagreeing with this view, it may be said that for the monetary authorities of a country, stability essentially means maintaining the domestic and external value of its main liability, money.

Globally, inflationary pressures have been kept low since the 1990s. Cecchetti et al. (2006) attribute this success to responsible monetary policy, which essentially was through restricting the rate of growth of money supply so as not to exceed demand for money excessively. From this perspective, it can be said that the Reserve Bank deserves full credit for achieving and maintaining domestic price stability through its successful control of monetary aggregates like M1. In the post 1987 coup period, except during 1988, the rate of growth of real money supply (M1) has been restrained. In the three years following the large increase in money supply during 1988, the real rate of growth of money was –7.0 per cent per year to mop up the excess liquidity created to meet the panic demand for cash caused by the coup. On average, in the post 1987 period the average real money growth was 4.4 per cent and output growth was 1.7 per cent. The rate of inflation was 4.5 per cent, close to the underlying trend rate of growth of 4 per cent. It is interesting to note that even after switching to the bank rate as the policy instrument in 1997, the Reserve Bank did not lose control of the rate of growth of money supply. The average rate of growth of real money supply from 1997 to 2002 was 4.3 per cent. Output and inflation grew at an average rate of 2.4 per cent and 3.1 per cent, respectively. The decline in the inflation rate may be due to the improved growth rate of output. Therefore, it may be said that the Reserve Bank of Fiji has successfully maintained the internal value of money in the post 1987 period and avoided financial crises.

On the exchange rate front, after two large devaluations in 1987 and another in 1998, the Reserve Bank seems to have successfully maintained the external value of the currency through a managed exchange rate system. However, in spite of the three devaluations, the gap between imports and exports has been widening. If these trends continue, it may be difficult to maintain the external value of the dollar.

It is tempting to suggest that Fiji should abandon the managed exchange rate policy and float the dollar; see for example Chand (1998). Besides arguments made against a floating exchange rate system for Fiji by Jayaraman (1999), it is worth noting some important observations of Masson et al. (1997) and Chang and Velasco (2000a). If the central bank is targeting inflation, any fixed exchange rate system (for example, currency boards) should be given up. Furthermore, central banks should respond to exchange rate variations because they affect indirectly the inflation rate through their effects on the relative prices of domestic and imported goods and directly impact on inflation through the prices of imported goods for which there are no domestic substitutes. Therefore, they take the view that the fixed versus flexible exchange rate debate is only academic because participants in these debates often define fixed and flexible in ways for which there are no clear correlates in practice. A corollary of these observations

is that a dirty float (a managed exchange rate system) is often an optimal choice.

With a managed exchange rate system and a target of domestic price stability, the Reserve Bank of Fiji should aim at maintaining a stable exchange rate. To maintain a stable exchange rate, it will need adequate foreign exchange reserves to intervene in the currency market to smooth exchange rate fluctuations. However, foreign exchange reserves may dwindle if there are persistent current account deficits and/or capital outflows due to higher returns in other countries. Since domestic interest rates are far below the rates in nearby Australia and New Zealand, the Reserve Bank uses its powers to control capital outflows to some extent. We anticipate that in spite of these controls, a significant amount of capital outflow takes place. However, as far as correcting persistent current account deficits is concerned, central banks have limited powers. If the deficits are due to fundamental economic problems, devaluations may not correct the problem even if the Marshall-Lerner condition is satisfied. The success of devaluations depends, therefore, not just on the validity of the Marshall-Lerner condition but also on whether appropriate policies have been implemented by the government to correct the fundamental problems.

A similar reason was given by Garnaut (1995) for the failure of devaluations to correct Papua New Guinea's current account deficits. Although Reddy (1997) and Singh (2006b) found that the Marshall-Lerner condition is satisfied for Fiji, the current account balance worsened very quickly following the three devaluations. This is an indication that some fundamental problems need attention and it is doubtful that such problems can be rectified through monetary policy instruments, including adjustments to the exchange rate.

Maintaining the external stability of money is a challenging task for many central banks in developing economies that have not paid much attention to the structural problems of their economies. In a changing world of globalisation and economic integration, many unexpected financial tremors are likely. With the financial crises of the East Asian countries behind us, we now know that the consequences of shocks will be more serious for countries that embrace globalisation policies without implementing adequate institutional reforms by modifying their existing banking and corporate laws.

However, financial crises and runaway inflation are not currently seen to be a serious threat. Masson, Svastano and Sharma (1997) argue that even if a low inflation rate is the ultimate objective of a central bank, monetary authorities need to respond to exchange rate movements because fixed and pegged exchange rates are not viable in the long run unless a country has accumulated substantial amounts of foreign exchange reserves. Similarly, Chang and Velasco (2000b) argue that the question for most emerging market economies is no longer 'to float or not to float?' but 'how to float?' There are three choices: hard pegs (for example, Argentina and Hong Kong), managed floats (many countries including Fiji), and fully flexible exchange rates (for example, Brazil, Mexico, Peru and Singapore). Chang and Velasco found that growth performance during the period 1997 to 2000 was better in countries with flexible exchange rates than in Argentina and Hong Kong with their currency boards and hard pegs. They recommended dirty floats for emerging countries, with wider margins for variations in the exchange rate, because their goods markets are exposed to frequent external shocks. Fiji, like several other developing economies, has opted for a managed float, although the Reserve Bank seems to be maintaining a smaller range of fluctuations for the dollar against a weighted average of the currencies of its five main trading partners:

Australia, New Zealand, the United States, Japan and the United Kingdom.

An alternative suggestion by Garnaut (2005) is to form a currency board: meaning a hard peg, perhaps anchored to the Australian dollar. Under this regime Fiji may derive some of the benefits of a flexible exchange rate system, depending on the extent to which the value of the Australian dollar is determined by market forces. This arrangement would be beneficial if Australia and Fiji experience common external shocks, especially given that the bulk of Fiji's tourism earnings are from Australia and New Zealand. However, there are also disadvantages in currency boards because domestic banks are left without a lender of last resort. In a world of fractional reserves, inadequate regulations and the absence of deposit insurance, minor financial tremors may lead to large deposit runs. Some countries, therefore, abandoned hard pegs in favour of managed exchange rates; see Kaminisky and Reinhart (1999). If, in a currency board system, the monetary authority retains its role as the lender of last resort, financial crises may become worse because the central bank has to print currency as well as satisfy the demand for foreign currency by domestic depositors.

If a managed float is justified as pragmatic, an important question is whether the present range set by the Reserve Bank for exchange rate variations is adequate? A narrow range may be adequate if worsening trade balances are transient. The wider is the acceptable range of variations for the exchange rate, the closer will be a managed float to a flexible float. Therefore, if a country prefers a managed float, it is appropriate to consider if widening the current limits on exchange rate variations improves the trade balance, even for a few years. This avoids the pressure on domestic prices caused by large devaluations once every five or ten years.

A downside to widening the exchange rate band is that when the exchange rate depreciates there is the possibility of larger increases in the inflation rate. However, some of the increased costs of imported goods may be absorbed by reduced profit margins and substituting cheaper imported goods from other sources. If the margins for exchange rate variation are not widened, eventually it might be necessary to devalue the currency by larger amounts, as happened in 1987 and 1998. This may lead to hardship for households because it is difficult for importers and retailers to absorb large increases in costs.

Some of the adverse effects of small devaluations can be minimised by creating the conditions for investment in sectors that can profitably produce domestic substitutes.[19] This calls for a joint effort by the central bank and the government. The Reserve Bank cannot shoulder full responsibility. At best it may give the necessary time for the government to implement policies to encourage the production of domestic substitutes.

Our preference for widening the limits for exchange rate variations is also partly based on the fact that it is hard to revalue the currency after large devaluations. Widening the margins at least leaves scope for the dollar to find its long-run equilibrium value and gives adequate time to the government to implement policies to solve fundamental structural weaknesses.

Summary and conclusions

This survey has identified the main policy objective of the Reserve Bank of Fiji as maintaining the internal and external value of money. Although it has other objectives, either they do not need frequent policy interventions or are somewhat difficult to achieve with monetary policy instruments alone. Our review of the stylised facts of the economy shows that Fiji's short to medium-term growth outlook is gloomy, due to political instability, depressed investment climate, exodus of human and financial

capital and widening trade deficits. Nevertheless, the Reserve Bank should be credited with preventing major financial collapses during the two political coups, restraining inflationary pressures, and maintaining the external value of the currency. These successes, in our view, are due to judiciously controlling the rate of growth of the money supply.

Our review of international trends in the use of monetary policy shows that central banks in developed economies have switched from using the money supply as their monetary policy instrument to the bank rate. This was necessary because of the instability in their demand for money functions. Furthermore, domestic expenditures and capital flows are reasonably sensitive to interest rate changes. However, although Reserve Bank of Fiji researchers have found that the demand for money in Fiji is unstable and aggregate demand and the inflation rate respond to changes in the rate of interest, the robustness of these findings is doubtful. Therefore, it is difficult to justify a switch from using the money supply to the bank rate as its instrument of monetary policy.

The Reserve Bank's power to stabilise the exchange rate seems to be limited at best. Although it has devalued the currency three times, there was no significant improvement in Fiji's trade or current account balances. This implies that trade deficits are mainly due to structural and institutional weaknesses in the economy. Needless to say, monetary policy measures alone are inadequate to correct these problems. Therefore, unless the government implements appropriate policies to boost export competitiveness and productivity, the Reserve Bank will be forced to periodically devalue the currency by large amounts.

We proposed an alternative vision for monetary policy to avoid large devaluations, but take the view that unless the structural weaknesses are alleviated, devaluations are inevitable. The key aspects of our alternative vision are that the bank and deposit rates be raised to those comparable to Australia and New Zealand and reduce the statutory deposit ratio to persuade the banks to reduce their margins so that the lending rates do not increase significantly. Implicit in our vision is also the suggestion that the Reserve Bank should switch back to using money supply as its monetary policy instrument so that interest rates are market-determined.

A final point in our vision for monetary policy is that the Reserve Bank may consider widening the upper and lower limits for variations in the exchange rate. The advantage of this measure is that it would give some time to the government to implement policies to reduce structural problems. Furthermore, any resulting inflationary effects of fluctuations in the exchange rate are likely to be smaller than from infrequent large devaluations.

We hope that our survey of the course of monetary policy will encourage further research on the demand for money in Fiji and on the effects of the bank rate on output and inflation. Furthermore, we hope that our work, taken in the context of the judicious and insightful observations by Garnaut (2005), will make policymakers think about the need for some hard measures to reduce the structural problems of the Fijian economy.

Notes

1 The problem of clearly identifying objectives, instruments, and their success and failures is complicated by the high propensity of central banks and commentators to use a variety of acronyms and clichés.

2 The problem of clearly identifying objectives, instruments, and their success and failures is complicated by the high propensity of central banks and commentators to use a variety of acronyms and clichés.

3 Waqabaca and Morling (1999) also have a good description of the institutional details and how monetary policy is formulated and implemented in Fiji.

[4] The need for these arrangements are justified or rejected by examining their effects mainly on trade flows between the member countries. For a general discussion see Rose (1999). Jayaraman (2003) examined these issues in the context of the Pacific island countries.

[5] In the post war period, beginning from 1944, and until the breakdown of the Bretton Woods convention of fixed exchange rates of the 1980s, maintaining a pre-determined exchange rate was the target. The bank rate and/or foreign exchange reserves were used as instruments to maintain the target.

[6] Among Fiji's main trading partners, Australia and New Zealand had targeted exchange rates until 1983 and from 1993 switched to inflation targeting. From 1983 to 1993, they were also targeting inflation, albeit implicitly, through controlling monetary aggregates. Since 1993 they have been using the bank rate as their main instrument of monetary policy. Countries that still target the exchange rate are Hong Kong, Malaysia, Singapore, Argentina, Costa Rica, Denmark, Norway, Tunisia, Turkey, Uruguay and Venezuela. Hong Kong and Argentina target the exchange rate because they have currency boards. India, Israel and Sweden seem to be targeting a weighted average of exchange rate and inflation. In contrast, the United States and Japan target a combination of macro variables. For details see Fatas and Rose (2004) and Mathew (2006).

[7] There are claims, mainly by Reserve Bank of India sources, that capital flows in India have become increasingly responsive to changes in the bank rate since the financial reforms in 1997.

[8] Countries in which there is no evidence that monetary policy has become more effective in the 1990s are Austria, Germany and Switzerland. This is understandable because in these countries monetary policy was equally effective in both periods.

[9] It would be interesting to use the framework of Cecchetti et al. (2006) to analyse the efficacy of monetary policy in countries with stable money demand functions. One would expect that monetary policy has become less efficient because of an inappropriate choice of monetary policy instrument. Jha's findings for India are a preliminary indication of this expectation.

[10] During this period foreign exchange reserves in India reached a low point, sufficient only for imports for a few weeks. This caused a major crisis and the International Monetary Fund forced India to implement market liberalisation policies. Needless to say, India benefited enormously by liberalising its economy. Its current foreign exchange reserves exceed 6 months of imports.

[11] A limitation in all these studies is that they have not used cointegration tests based on structural breaks in the variables. It is difficult to say what would be the findings in that case. Although it is relatively easy to modify unit root tests for structural breaks, there are two problems. First, the sample size for Fiji is small. Second, a rigorous application of cointegration techniques based on structural breaks (not just unit root tests) is difficult and computationally demanding.

[12] The average real bank rate during their sample period of 1975 to 1998 was about 1.24 per cent and the average rate of inflation measured by the CPI was 6.1 per cent.

[13] There is confusion over whether the authors have included in their equation the lagged values of the changes in the real rate of interest (Δr) or the lagged values of its level (r). Since in their subsequent discussion they say that interest rate has only short-term effects, we presume that there was a typographical error and we make this correction in Equation 1 and include lagged changes in the real rate of interest (Δr).

[14] That they have used the GETS approach is supported by their use of the critical values for cointegration between the levels of the variables from Kremers, Ericsson and Dolado (1992).

[15] It would have been more appropriate to use ln(Y/YP) instead of ln(Y–YP) because often YP may exceed Y and it is meaningless to take the log of a negative variable. We hope that Waqabaca and Morling have used (Y/YP) and not (Y–YP) in their empirical work.

[16] Therefore, only unreliable estimates (in our view) of growth of GDP are available. The RBF estimates of GDP growth rates are 3 per

cent (2003), 4.1 per cent (2004), 1.7 per cent (2005) and 2 per cent (2006), implying an average growth of 2.7 per cent for these years.

17 In the four years after the coup the inflation rates were 4.2 per cent, 0.8 per cent, 4.1 per cent and 2.8 per cent respectively.

18 In many years the real interest rate on saving deposits in Fiji has been negative. It is likely that interest rate effects on consumption have been masked by these low and often negative interest rates. Therefore, it is difficult to deny that a substantial increase in the rate of interest to keep the real rate of interest positive would not increase the saving rate through inter-temporal consumption substitution.

19 Casual observation of supermarket shelves shows that Fiji is still importing common consumption goods like tomatoes, potatoes, capsicum, cauliflower, carrots, milk, lamb, soda water and a range of other processed food items. Although expenditure on such items would be much smaller than on high-priced consumer durables—which do not have any scope for domestic production—domestic production of many consumer goods is viable and will reduce imports.

References

Cecchetti, S.G., Flores-Lagunes, A. and Krause, S., 2006. 'Has monetary policy become more efficient? A cross-country analysis', *The Economic Journal*, 116(511):408–33.

Chand, S., 1998. 'Exchange rate and financial management: some lessons learnt for and from Fiji', *Pacific Economic Bulletin*, 13(1):36–46.

Chang, R. and Velasco, A., 2000a. 'Financial fragility and the exchange rate regime', *Journal of Economic Theory*, 92(1):1–34.

——, 2000b. 'Exchange rate policy for developing countries', *American Economic Review*, 90(2):71–75.

Fatas, A., Mihov, I. and Rose. A.K., 2004. *Quantitative goals for monetary policy*, Working Paper No. 10846, National Bureau of Economic Research, Cambridge, MA.

Garnaut, R., 2005. 'Monetary stability in economic development', *Pacific Economic Bulletin*, 20(3):103–10.

——, 1995. 'Monetary stability or more devaluation?', *Pacific Economic Bulletin*, 10(1):19–23.

International Monetary Fund, 2006. *Transparency in monetary and financial policies*, Factsheet (April), International Monetary Fund Washington, DC. Available online at http://www.imf.org/external/np/exr/facts/mtransp.htm.

Jayaraman, T.K., 1999. 'Is there a case for a freely floating exchange rate in Fiji?', *Pacific Economic Bulletin*, 14(1):93–100.

——, 2003. 'Is there a case for a single currency for the South Pacific islands?', *Pacific Economic Bulletin*, 18(1):41–53.

Jha, R., 2005. *Inflation targeting in India: issues and prospects*, Working Paper No. 2005/04, Australia South Asia Research Centre, The Australian National University, Canberra.

Kaminisky, G. and Reinhart, C.M., 1999. 'The twin crises: The causes of banking and balance of payments problems', *American Economic Review*, 89(3):473–500.

Katafono, R., 2001. *Demand for money in Fiji*, Staff Working Paper No. 03/2001, Reserve Bank of Fiji, Suva.

Kremers, J.J.M., Ericsson, N.R. and Dolado, J.J., 1992. 'The power of cointegration tests', *Oxford Bulletin of Economics and Statistics*, 54(3):325–48.

Masson, P., Savastano, M. and Sharma, S., 1997. *The scope for inflation targeting in developing countries*, Working Paper No. 97/130, International Monetary Fund, Washington, DC.

Mathew, J., 2006. 'Institutional structure for monetary policy: A comparative assessment of ten central banks', *ICFAI Journal of Monetary Economics*, 4(1):6–18.

McConnell, M.M. and Perez-Quiros, G., 2000. 'Output fluctuations in the United States: what has changed since the early 1980s?', Am*erican Economic Review*, 90:1,464–76.

Poole, W., 1970. 'The optimal choice of monetary policy instruments in a simple macro model', *Quarterly Journal of Economics*, 84(1):192–216.

Rao, B.B., 2005. 'Testing Hall's permanent income hypothesis for a developing country: the case of Fiji', *Applied Economics Letters*, 12(4):245–48.

——, 2006a. 'Estimating short and long-run relationships: a guide to applied economists', *Applied Economics* (forthcoming).

——, 2006b. 'Time series econometrics and applied economics: a methodological perspective', *Indian Journal of Economics and Business* (forthcoming).

Rao. B.B. and Singh, R., 2004. 'A consumption function for Fiji', *ICFAI Journal of Applied Economics*, 4(3):7–14.

——, 2005a. 'Cointegration and error correction approach to the demand for money in Fiji', *Pacific Economic Bulletin*, 20(2):72–86.

——, 2005b. 'Unit roots, cointegration and the demand for money in India', *Applied Economics*, 38(11):1,319–26.

Reddy, M., 1997. 'Devaluation and economic simulation: the Fiji economy post-coup', *Pacific Economic Bulletin*, 12(2):85–94.

Rose, A.K., 1999. *Does a currency union boost international trade?*, NBER Working Paper No. 7432, National Bureau of Economic Research, Cambridge, MA.

Singh, R., 2006a. *An investment equation for Fiji*, Staff Working Paper No. 01/2006, University of the South Pacific, Suva.

——, 2006b. *Cointegration tests on trade equations: is devaluation an option for Fiji?*, Staff Working Paper No. 13/2006, University of the South Pacific, Suva.

Singh, R. and Kumar, S., 2006a. *Cointegration and demand for money in selected Pacific island countries*, Staff Working Paper No. 03/2006, University of the South Pacific, Suva.

——, 2006b. *Demand for money in developing countries: alternative estimates and policy implications*, Staff Working Paper No. 05/2006, University of the South Pacific, Suva.

——, 2006c. *Private investment in selected Asian countries*, Staff Working Paper No. 14/2006, University of the South Pacific, Suva.

Siwatibau, S., 1993. 'Macroeconomic management of small island economies', in R. Cole and S. Tambunlertchai (eds), *The Future of Asia Pacific Economies: Pacific islands at the crossroads?*, National Centre for Development Studies, Research School of Pacific and Asian Studies, The Australian National University, Canberra.

Waqabaca, C. and Morling, S., 1999. *The conduct of monetary policy in Fiji*, Staff Working Paper No. 01/1999, Reserve Bank of Fiji, Suva.

Williams, G. and Morling, S., 2000. *Modeling output fluctuations in Fiji*, Staff Working Paper No. 01/2000, Reserve Bank of Fiji, Suva.

Zentler, R., 1986. 'Monetary policy and development in Fiji', *Pacific Economic Bulletin*, 1(2):18–21.

Acknowledgments

We are grateful to Professor Ron Duncan for his encouragement and suggestions for improvement and to the University of the South Pacific for a research grant (Vote Code: 6599-1421) which was partly used for this paper.