

Deficit bias, debt accumulation, and repeat economic crises in Papua New Guinea *

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Abstract

This paper shows that a strong policy bias towards deficits, leading to rapid accumulation of debt that periodically makes debt roll-over difficult, has been the principal reason for the three liquidity crises faced by Papua New Guinea in the decade commencing 1990. The deficit bias is argued to be the result of a lack of information amongst stakeholders, strategic debt accumulation by incumbents in government, and a common-pool problem. Recommendations for policy interventions to break out of the deficit-debt-crisis cycle and the role of aid in the above are highlighted.

Key words: Deficit, debt, and crisis; Papua New Guinea.

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1. Introduction

Papua New Guinea's development record since independence from Australia in 1975 has, at best, been lack lustre. Recent estimates by the World Bank suggests that some 37 percent of the population live below the poverty line; anywhere between 30 to 50 percent of rural children are malnourished; and pockets of severe malnutrition is emerging throughout the country. The PNG *Department of National Planning and Rural Development* (DPNRD) notes that social indicators of development with a life expectancy of 54 years, literacy rate of 64 percent, an infant mortality rate of 64 deaths for every 1000 live births, and a maternal mortality rate of 370 deaths for 100,000 births are amongst the worst in the Pacific region (DNPRD, 2003). Recent economic performance has been equally depressing: GDP fell by 1.2 percent in 2000 and another 3.4 percent in 2001 with a further decline of 0.5 percent estimated for 2002. The forecast for GDP growth for 2003 of a modest 1.8 percent implies that per-capita GDP will fall, albeit by a lesser magnitude than before, in 2003 as well given an annual population growth rate of 2.7 percent: a rate at which the population will double every 26 years.

Given its rich resources, this middle-income developing economy has performed well below expectations. The World Bank in its country assessment at independence e was highly complimentary on the developmental prospects for the economy, noting that

“In the four years after its elections, the Somare government showed an impressive ability to deal with the young country's financial, economic, and political problems. An effective set of institutions for economic and financial management has been created. These include a strong ministry of finance that has developed a tight system of budget controls, operating through a budget priorities committee; a planning office; and a central bank that, with International Monetary Fund assistance, has organised a set of international accounts.” (World Bank, 1978: 5)

The Bank went on to note the successful introduction of the Kina (the domestic currency), approval of a set of principles to govern development policy and foreign investment, and the publishing of investment priorities by the National Investment and Development Authority (NIDA). The Bank, however, qualified its highly favourable assessment by stating that “no one can say how sturdy or fragile Papua New Guinea’s policy or administration will prove to be, but the short-run record provides strong grounds for optimism and few for anxiety” (page 5). At independence, Australia accounted for between 40 and 45 percent of the local budget and some 45 to 50 percent of the foreign exchange requirements. The Bank then had “reasonable grounds” to believe that this dependence on Australian grant “might end entirely within the next 20 to 25 years” (page 6). With the benefit of hindsight some 27 years on, could the Bank have been more off the mark!

Over the past 27 years of independence, PNG has witnessed three liquidity crises and several changes in governments, Prime Ministers. Several reasons may be given for this poor performance: this paper argues that one of the major reasons has to do with poor macroeconomic management. The three liquidity crises faced in the 1990s, several near misses, and yet another impending crisis as of mid-2003 is evidence of such mismanagement. This paper argues that a strong deficit bias in fiscal policy has seen public debt rise from zero at independence to 45 percent by 1990 and 75 percent by 2002 – the most recent year for which published data is available. There is little hope of debt levels stabilising while the incentives driving this process remain. The high debt levels and rising cost of servicing such debt has raised the frequency of fiscal crises; an issue of increasing concern to policymakers and international financial institutions who carry the bulk of the responsibility for rescuing the

situation. Monetary policy, in contrast, has remained conservative and without an inflation bias. This contrast lends support to the view that differing incentives are present in fiscal vis-a-vis monetary policy; central bank independence is a core part of the explanation. Monetary policy, in any case, would have a secondary role in demand management given low degree of financial intermediation.¹ The onus for maintaining macroeconomic prudence, therefore, falls disproportionately on fiscal management.

The rest of the paper is organised as follows: Section 2 provides the contextual information. Section 3 presents a simple model of the deficit-debt dynamics leading to a crisis. Section 4 suggests reasons for the persistence of deficits. Section 5 discusses the impact of crises. Conclusions and implications for policy bring the paper to a close.

2. The PNG context

With a per-capita income of US\$756 (in 1998) and an average life expectancy of 54 years (data for 1996, the most recent available), Papua New Guinea is a middle income developing country according to the World Bank classification (see data on basic indicators provided in Table 1). The main stay of the economy is mining and agriculture; principal export commodities as of 2001 being logs (1.5 million tons), palm oil (515,000 tons), copra (71,000 tons), coffee (66,000 tons) cocoa (48,600 tons), gold (57.7 tonnes), copper (158,300 tons), and crude oil (19,400 barrels) (data drawn from Duncan 2001). The bulk of the population is young with children under the age of 15 years comprising some 45 percent of the population. Formal sector

¹ Financial depth as quantified by the currency in circulation together with demand deposits as a proportion of GDP at 27 percent is comparable to those for very poor countries, ie those with a per-

employment accounts for less than 10 percent of working-age population with the bulk of the remainder engaged in subsistence production.² Crime and lawlessness in urban PNG has been worsening over time with adverse implications for investment and job creation (see Chand and Levantis 2000). Duncan and Lawson (1997), based on business-survey data, conclude that law and order is the single biggest impediment to growth of private enterprise. The labour market was deregulated in 1992, but job growth has continued to lag expansion of the workforce, adding to the growing problems of urbanisation and crime.

Growth in GDP at 3 percent per annum for the 1980s was marginally ahead of the 2.2 percent rate of population growth, implying a close to stagnant per-capita income.

This changed in the next decade with growth of output increasing to approximately 5 percent per annum with an increase in the rate of population growth to 2.7 percent, per-capita income rose on average by 1.3 percent annually.³ While per-capita GDP rose slowly over the 1990s, the level of annual production gyrated wildly (see Figure 1). The entire post-independence period, with the sole exception of 1996 and 1997, has been characterised by persistent budget deficits (Figure 2).⁴ These deficits have caused a steep rise in public debt,⁵ with ramifications for domestic interest rates, inflation, and the exchange rate. This is not a sustainable situation, particularly when interest payments on debt in 2001 amounted to approximately 18 percent of recurrent expenditure or 54 percent of the development budget. At the current rate of 10

capita income of less than \$391 at 1981 prices (see Chand 2002).

² Data on formal private-sector employment is not available, but Levantis (2000) estimates the 1994 figure to be 152,000.

³ Data, particularly on population, is of questionable quality and hence these numbers should be interpreted with caution.

⁴ A similar picture emerges for current account deficits as shown by Figure A1.

⁵ Some 70 percent of this debt are external and in bulk denominated in US dollars. The most serious effect of this debt is on domestic interest rates from the potential of default; the last is a function of total debt.

percent increase in debt each year since 1990, and with GDP growing at less than half this rate, debt levels would reach 100 percent of GDP by 2008. Alternatively, bringing debt to GDP ratio to the developing country average of 40 percent by 2010 would require raising the rate of growth of GDP to five percentage points above the rate of growth of debt; this is indeed a formidable task under the prevailing circumstances.

Each of the three liquidity crises – in 1990-1, 1994-5, and 1999 – arose out of the government's inability to roll over debt. These liquidity crises in turn, led to sharp spikes in domestic interest rates. As shown in Figures 3 and 4, the magnitude of these interest rate spikes increased with each crisis, peaking at 28 percent on treasury bills as of August 1999. In sharp contrast to the persistent deficits and rising public sector debt, inflation – except for periods associated with the liquidity crises – has remained low and relatively stable in the post-independence era. As shown in Figure 5, annual rate of CPI-inflation spiked at 12 percent in 1980, but otherwise remained within single digits from 1975 until 1994. Since then, it has jumped to double digits, with a low of 4 percent in 1997 as the result of a sharp contraction in demand due to the severe drought of that year. The discrete jump in inflation since the mid-1990s is not a coincidence: the kina was floated in late 1994 as foreign exchange reserves ran low. The jump in inflation was brought about by the sharp depreciation of the currency. The float of the kina was inevitable given falling reserves, which as of October 1994 had reached 33 million Kina – equivalent to one week of import cover (see Figure 6). The Kina has since continued to depreciate while foreign reserves have taken the brunt of movements on the capital account.

3. Deficit bias and debt accumulation leading to crisis

The source of the three crises of the 1990s can be traced to persistent budget deficits that led to rising public sector debt. The debt has culminated in crisis on occasions when the state has had problems rolling over its debt. The ensuing macroeconomic instability has been fuelled by an accommodating monetary stance; that is, revenue shortfalls for the budget have been monetised leading to high inflation, high interest rates, low domestic savings, and a volatile Kina. Public debt as of 2003 is nudging 80 percent of GDP: the highest in the country's history and high by developing country standards. Some 30 percent of total public debt is domestically financed: through sale of Treasury Bills and by the Bank of Papua New Guinea. The former creates upward pressure on the interest rate while the latter does the same for inflation. The high interest rates have raised the cost of credit to the private sector, stifled investment and consequently growth of employment opportunities and income with direct consequences for poverty. As shown in Figure 2, over the 25 years of independence the state has run budget deficits in all but two years. The deficit reached a maximum of approximately 6 percent of GDP while the surpluses of 1996 and 1997 were small and equal to 0.54 and 0.22 percent of GDP, respectively. Persistent deficits translate into rising debt with accompanying inflationary consequences, as shown next.

Letting D denote debt, G government expenditure, T tax receipts, r the interest rate on public debt, a dot over D its time derivative, and t indexing time with all variables expressed in real terms, this relationship between budget deficits and public debt may be stated as follows.

$$\dot{D}(t) = [G(t) - T(t)] + r(t)D(t) \quad (1)$$

Equation (1) states that the rate of change in the stock of debt equals the difference between government purchases and revenues (the primary deficit), plus the real interest on existing debt. Letting B denote the nominal deficit and P the price level, with the rest of the notations as before, equation (1) can be translated into conventional measures of budget deficits as follows.

$$B(t) = P(t)[G(t) - T(t)] + i(t)P(t)D(t) \quad (2)$$

where i denotes the nominal interest rate. Simple manipulation of (2) after noting (the Fischer identity) that $i = r + \pi$ gives

$$\frac{B(t)}{P(t)Y(t)} = [\hat{D} + \pi(t)] \frac{D(t)}{Y(t)} \quad (3)$$

where π denotes the rate of inflation (which is defined as being equal to the difference between the nominal and real interest rate), Y denotes real GDP, and a hat over D denotes its growth rate.⁶ Equation (3) shows two important relationships: first, a positive linear relationship between budget deficits as a share of GDP and debt as a share of GDP; and second, the deficit and inflation link. This latter relationship is most evident under steady-state assumptions when a given stock of debt is rolled over indefinitely at a constant interest rate such that equation 3 simplifies to

$$\frac{B}{PD} = [r + \pi] \quad (3a).$$

The treatment so far have been on flows and ignores decisions to smooth taxing and expenditure decisions of governments across time periods. Translating equation (1) into its stock equivalent gives the government's budget constraint,

$$\int_{t=0}^{\infty} e^{-R(t)} [T(t) - G(t)] dt \geq D(0) \quad (4)$$

where $R(t)$ denotes the discount rate applicable at time t to convert values to time 0. The budget constraint in (4) simply states that primary surpluses have to be large enough to offset the initial debt such that the possibility of the state rolling over its debt indefinitely as depicted in equation (3a) is disallowed.⁷ We now confront PNG data with the above identities to make inferences about the sources of the crises of the 1990s.

Empirics

Table 2 decomposes the total deficit into the primary deficit and that due to interest payments as shown in equation (1), all expressed as shares of GDP. Two measures of the primary deficit are provided: one that includes foreign grants and the other without foreign grants. This distinction is important for two reasons. First, foreign grants are large, having averaged 4.36 percent of GDP in the decade with a peak of 8.65 percent in 1991 and a low of 1.46 percent in 1998. Second, such grants cannot constitute a sustainable source of revenue; hence they have a limited impact on the government's inter-temporal budget constraint given in equation (3).

⁶ See Romer (2002) chapter 11 for further details on the identities discussed here.

⁷ Romer (2002) claims this to be a lot more realistic assumption.

Table 2: Composition of budget surplus (+)/deficit (-) as percent of GDP, 1999-2000.

Year	Primary surplus		Interest payments	Total surplus ^c	Total debt ^d
	With foreign grants ^a	Without foreign grants ^b			
1990	0.27	-6.95	3.53	-3.26	45.75
1991	1.44	-7.21	3.23	-1.79	43.45
1992	-2.06	-6.71	3.42	-5.48	46.06
1993	-2.35	-6.13	3.26	-5.60	47.66
1994	1.12	-1.92	3.44	-2.32	54.59
1995	4.07	0.05	4.64	-0.57	56.45
1996	4.27	1.80	3.74	0.54	54.94
1997	4.43	2.55	4.21	0.22	62.55
1998	2.56	1.11	4.33	-1.76	66.48
1999	1.81	-3.62	4.46	-2.65	66.44
2000	2.39	-2.93	4.42	-2.02	

Notes: total deficit = primary deficit - interest payments; foreign grants = a - b.

Figures in the table calculated using the following data sources: BPNG (various issues), for current GDP - Table 10.7; for constant price GDP - Table 10.8; Public debt outstanding - Table 8.3; Fiscal operations - Table 8.1.

The previous government that took office in July of 1999 was concerned about the rapidly rising debt and the stress it was creating on cash-flow management and the drag it was imposing on the growth of output. The punitive effects of rising debt on interest rates, inflation, and the kina were already being felt when the new

administration took office. Privatisation comprised the core strategy arguing for sale of poorly performing state owned enterprises to liquidate debt, thus improving the net worth of the state whilst reducing pressure on inflation, interest rates, and the Kina. This strategy, despite the best of intentions, was stalled by other competing considerations; hence, much of what was articulated in this policy did not eventuate.

The considerations outlined under the privatisation strategy, involving sale of public assets to retire debt so as to improve the balance sheet of the state, have been part of public policy since 1990. Improving the net worth of the state via privatisation involves transactions on the balance sheet; this entails reducing non-performing assets to reduce liabilities so as to satisfy the inter-temporal budget constraint given as equation (4). We illustrate the mechanics of such a transaction next.

Privatisation improves net worth under some strong assumptions that are considered next. Asset sales (privatisation) amounting to $S(0)$ improves the stock of primary surplus as reflected in the left hand inequality in (4) by $A(0)$, the magnitude by which the sale proceeds exceed the revenue stream from keeping the enterprise; ie,

$$A(0) = S(0) - \int_{t=0}^{\infty} e^{R(t)} \Pi(t) dt \quad (5)$$

where $\Pi(t)$ denotes net profits from the enterprise at time t . Some degree of capital market imperfection or managerial inefficiency has to exist to guarantee A to be strictly positive, otherwise an asset sale to reduce the current deficit does not affect the government's budget constraint as depicted in equation (4) above. The latter was the prime consideration behind the proposed privatisation strategy. Moreover,

efficiency considerations may still support privatisation even when $A(0)$ is equal to zero. The criterion in (5) is a purely financial one. In the case of several state-owned enterprises in Papua New Guinea, net losses were a permanent feature; offloading these even at zero-price would improve net worth. From a social perspective, the risk of privatisation is in transferring monopolies from the state to the private sector without adequate safeguards against abuse of such market power.

Does the public sector have to reduce debt? That is, can the government roll over its debt indefinitely? This is only possible if the debt to GDP ratio does not blow out; allowing the steady state of this ratio to be a constant implies that GDP growth has to at least equal the rate of interest. That is, for D/Y to approach a constant, the economy has to grow at a rate (g) that is at least equal to the rate of interest, r . Meeting this constraint, as pointed out above, requires GDP to grow by at least 5 percent per annum for the decade to 2010: an unlikely proposition given present circumstances.

The analysis above suggests that public debt cannot rise indefinitely and that options for containing the rising debt of the public sector, such as privatisation, will have to be seriously considered in the not too distant future. The question as to why did the current levels of debt materialise in the first place still has to be addressed. The answer lies in reasons for a deficit bias in fiscal policy.

4. Why persistent and large deficits?

Fiscal policy is an indispensable tool for macroeconomic management; together with monetary policy, it provides the mechanisms for active stabilisation. Deficits may be

optimally chosen so as to minimise distortions arising from ad-valorem income taxes. This argument, due to Barro (1979), provides a rationale for tax smoothing which, when combined with consumption smoothing, leaves deficits and surpluses as a natural outcome from simultaneous consumption and tax smoothing. In the context of a young developing economy, it is reasonable to expect deficits initially, particularly when debt levels are low, so as to build productive capacity. The unforeseen rise in expenditure from the Bougainville conflict in 1989 and the recession that followed the severe drought in 1997-98 would result in deficits. The above-mentioned reasons for deficits, however, are temporary and therefore cannot form the basis for the persistence of primary deficits as evidenced in Figure 2. The persistence of deficits suggests a bias in fiscal policy towards deficits; reasons for which are explored next. We turn to political economy explanations for the deficit-bias where the budget is viewed as a mechanism for resolving conflicts amongst competing interests.

Political economy theory assumes that voters and politicians maximise their objective functions given resource and information constraints. This literature also considers how existing political processes can produce inefficient outcomes. An obvious finding from this research is that incomplete knowledge of the effects of alternative policies by one or a combination of players lead to inefficient outcomes. For example, individuals see the immediate effects of lower taxes and increased government spending but the costs of such policies in terms of lower future government expenditures and higher future taxes may not be that obvious to all participants in the political process.⁸ This may lead to a deficit bias, but such bias can only be sustained so long as some players remain less than fully informed about the

true costs of the policies. This suggests a crucial role for information intermediaries, including the media and parliament in information dissemination. No doubt, incomplete information may be a candidate for inefficient social outcomes resulting from the existing political processes; but it cannot be the sole or even the principal cause of the deficit bias given the robust mass media⁹ and parliamentary system of government in Papua New Guinea. We therefore consider alternative explanations for the deficit bias.

There is some anecdotal support for the proposition that the deficit bias of past administrations leading to debt accumulation was driven by strategic considerations. Several trust funds, including the recent privatisation trust fund, were created solely to quarantine funds from future parliaments so as to prevent ‘waste’ of such resources.¹⁰ Incumbent governments may also run large deficits and accumulate debt in the process so as to prevent future governments from engaging in activities inconsistent with the priorities of the administration in power. The incentives for such over-expenditures are particularly strong when there is a high degree of churning of political parties and individuals in power and when enforceable agreements cannot be reached about the long-term objectives of policy. In the case where half of the sitting members of parliament fail to retain their seats in subsequent elections and where Prime Ministers change as frequently as they have in the 1990s, the strategic motivations for a deficit bias must be strong. This explanation, however, is likely to

⁸ Corruption and nepotism may be interpreted in same light in that the beneficiaries experience immediate gains while the masses do not fully comprehend the negative and mostly the dynamic consequences of such action.

⁹ The daily news media in PNG is active and has exposed several incidences of corruption and abuse of public office. Several foreign correspondents are based in Port Moresby and provide regular reports to their press; these reports often get reported locally as well.

¹⁰ Siphoning off of proceeds from sale of state assets into private accounts would be ‘waste’ in that it reduces the net worth of the state (re equation (3)) while rewarding and thus encouraging more graft.

be only a (small) part of the story. We turn to a third and perhaps the most important reason for the deficit bias.

There is some empirical support from cross-country analysis for the proposition that weak governments, defined as those comprising multiparty coalitions and having short lives, tend to have larger deficits than single-party governments.¹¹ The theoretical underpinning of the causal link from weak governments to a deficit bias is part of ongoing research but one candidate that stands out in the current context draws on the “common pool” problem. Briefly, the common pool problem arises when several players, each of whom represents non-overlapping constituencies (interest group), comprising a coalition bargain over the allocation of overall state revenues (the common pool) so as to maximise their own support base. This is a classic ‘collective action’ problem where each group prefers to maximise appropriation whilst leaving the onus of maintaining fiscal prudence on the other groups. In the absence of a strong leader and with each group behaving symmetrically, deficit bias is the natural outcome.¹² This problem is magnified when state revenues rise as for example from new resource discoveries; now each group feels able to increase its share of appropriation with the deficit now rising more than proportionately. Indeed, the coming on-stream of new resource projects such as the Ok Tedi mine saw rise in public outlays that more than compensated for the rise in resource rents to the state.¹³

¹¹ The initial work highlighting this observation was that of Roubini and Sachs (1989), but subsequent work including that of Edin and Ohlsson (1991) questioned the robustness of this finding.

¹² This is akin to people lunching together where the total bill is to be equally divided amongst the attendees. The outcome in such a case is that each attendee over-spends, realising that others will share in their extravagance; by everyone acting in the same way the lunch-bill blows out (see Easterly 2001)!

¹³ The perverse impact of a favourable revenue shock on the budget from this mechanism is what Tornell and Lane (1999) refer to as the ‘voracity’ effect.

Anecdotal evidence over the 25-year history of PNG provides considerable support for a strong deficit bias and consequent rapid accumulation of debt due to the last-mentioned explanation. That is, the combination of weak governments and the common pool problem has been the prime reason for the strong deficit bias leading to accelerating debt accumulation and contributing to repeated crises. Tornell and Lane (1999) note “that the budgetary process is a convenient mechanism by which powerful groups can appropriate resources from the rest of society” (page 39) – this is particularly the case in the absence of countervailing institutions. Weak governments resulting from elections won on narrow and non-over-lapping constituencies deliver political leadership with strong incentives to reward their support base with public resources. This then via the common pool problem and in the absence of strong institutions leads to a deficit bias. A hard landing for the economy is inevitable once the public sector is unable to roll over its debt or can do so only with considerable penalty. Figure 4 shows a surprising regularity in this sequence of events with the length of the cycle being approximately 3 years and with September being the most likely month for the hard landing. The amplitude of the crises, particularly as shown by the uncovered interest parity condition, has increased with each crisis suggesting a rising toll from such hard landings.

5. The Economic impact of crises and crisis relief

Economic crises usually play out in the familiar sequence of four steps. First, the exchange rate collapses and domestic interest rates surge. Second, there is surge in bank failures and company bankruptcies as their capacity to service debt falters. Third, a domestic recession follows as domestic demand slumps. Fourth, there is a

political reaction to the slump including civil unrest and anti-foreign sentiments.¹⁴ During the period of PNG's hard kina policy, foreign reserves fell during periods of fiscal stress. Following the float of the kina in 1994, both foreign reserves and the exchange rate have fallen during spells of fiscal stress. Interest rates rose sharply in each episode with bankruptcies being the most severe during the 1999 episode when interest rates on 180-day treasury bills reached 28 percent. There was no banking crisis in any of the crises because the majority of commercial banks are foreign owned. The economic slump and anti-foreign sentiments have been felt following each crisis as suggested by the sequence above.

Budget deficits financed via debt redistribute income from future generations to present generation as shown by the government's budget constraint in equation (3) above. Such financing places upward pressure on interest rates (see Figure 4) that in turn lowers the capital stock of the economy and depresses wages, thus redistributing income from workers to owners of capital. When deficits build to unsustainable levels, a crisis eventuates and the economy is suddenly forced to make difficult decisions. The extreme action is to default on the debt. Unlike households, governments cannot be threatened with bankruptcy or their assets repossessed when such default takes place. This is not to suggest that default on public debt is costless to the government since it significantly raises the cost of selling any future debt – who would purchase paper promises of future repayment to a government that has not kept such a promise in the past? Notwithstanding the above, default on domestic debt amounts to a transfer from bondholders (generally, institutional investors) to individual taxpayers who, on average, have lower incomes; implying that such

¹⁴ See Wade (1998) on how this sequence of steps played out during the Asian financial crisis of 1997.

transfers may be equity enhancing. Default on foreign debt is a transfer from foreign to domestic residents with attendant costs of a sharp rise in sovereign risk that, in turn, is reflected in domestic interest rates. A debt default by the incumbent administration will drastically reduce the ability of any future government to raise funds from this source. This threat constitutes a significant discipline on fiscal policy, provided central bank independence is maintained. Otherwise, the state may still monetise the debt, leading to inflation.¹⁵

The failure of economic policy in the lead up to each of the crisis is clear. In the pre-float period, the hard Kina strategy was used to target price stability while fiscal policy was used to target external balance, and flexible prices used to ensure internal balance. Wage rigidities combined with full indexation meant that internal imbalance increased in severity over time; loss of fiscal discipline since the late 1980s saw loss of foreign reserves/external balance; while price stability was lost as the hard Kina could no longer be supported given dwindling reserves. The float of the Kina in 1994 and subsequent jump in inflation, in hindsight, is of no surprise. The post-float era realigned the policies with the targets by letting monetary policy target price stability, fiscal policy target internal balance, while the floating exchange rate was to guarantee external balance. This more conventional method of macroeconomic management failed again leading to further crises as fiscal indiscipline continued while the central bank propped up the exchange rate to contain inflationary pressures but at a cost of loss of reserves and high domestic interest rates.

¹⁵ The deficit for 2002 was financed only by BPNG and through asset sales while private lenders were withdrawing from the treasury bill market.

The most pronounced economic effects of a fiscal crisis, as seen by the public, are via the disruption of markets, particularly for capital. The experience in each of the crises in PNG attests to these predictions. In the period prior to the float of the kina, interest rates soared to unprecedented levels. In the aftermath of a crisis, several businesses were sent to the wall while those that survived did so by cutting deep into their profits and through high-grading (that is, shifting their activities to areas with the highest returns). In the process workers lost jobs; capital controls put in place to protect foreign reserves hampered international trade; while fiscal austerity measures forced onto the state saw a sharp decline in provision of public services, including basic services of primary healthcare and education. The fall in the Kina following its float relieved some of the pressure on foreign reserves but now with a cost of higher inflation.

Interest rates on treasury bills skyrocketed prior to each crisis. This is rational since bondholders suffer the greatest losses following a debt-default and as such have strong incentives to exit the market before the crisis eventuates. Such expectations generate dynamics that hold the potential to catch policymakers by surprise.

Imperfect information, together with the self-fulfilling nature of crisis, induces herd behaviour such that speculation and otherwise innocuous information may lead to a sudden dumping of government bonds and/or refusal to repurchase any that may fall due. Hence, little forewarning is received prior to the eventuation of a crisis: all that the government can do to minimise the chance of such a speculative attack is to lower its vulnerability to crisis.¹⁶ The most obvious means of doing so are by maintaining an adequate stock of reserves to counter-balance the stock of mobile capital. This in

¹⁶ Athukorala and Warr (2002) offer measures of vulnerability to such crisis.

turn means that the inter-temporal budget constraint given in equation (4) has to hold at all times. PNG has not witnessed an exodus of foreign capital since most of it is in the form of foreign direct investment (FDI) and mostly in the extractive and banking sectors where returns have been commensurate with the risks. But even here, new FDI are falling rapidly.

Given that the current fiscal position is untenable, the PNG government must plan develop strategies to steer itself out of another crisis. Having done so, the economy should be placed on a sustainable growth path. This calls for a well-planned and efficiently executed reform program. How this may be done is discussed next.

6. Managing reforms

Successful reforms in developing countries offer several lessons for PNG while repeat failures at home suggest what to avoid. In the successful cases, a small team within the executive is often charged with the responsibility of identifying the problems, analysing their causes, and drawing up recommendations. This design team is often led by a high profile local commanding community-wide respect and comprises technically competent experts. The team is appointed by the political leadership that in turn insulates them from political pressures, while giving them latitude to think through the issues and discuss solutions and trade offs with stakeholders and the wider community. Such a process addresses several of the initial concerns of stakeholders and is able to mitigate some of the extreme opposition to change. This model delivered major and wide-ranging reforms in Argentina, Bolivia, Chile, Indonesia, and Venezuela (see Grindle 2000).¹⁷ An inclusive approach to

¹⁷ These were the so called Chicago Boys and the Berkley mafia in reforms undertaken in Latin America and East Asia.

stakeholders, making them an active part in reform design rather than reactive bystanders to reforms, while allowing an independent and credible design team to run the process, is a proven model of success.¹⁸

Major reforms are costly to undertake and hence often materialise only in a crisis situation. Much akin to the common pool problem, collective inaction is delayed when each interest group relies on another to incur the cost of reform while wishing to share in the benefits. With each group thinking the same, deferment of reforms follows until a crisis develops such that potential losses to the individual leader or interest group from inaction is larger than the cost of action. The development of a crisis to galvanise support for reform is neither necessary nor sufficient; the Australian experience over the 1980s and 1990s suggests that reforms can be undertaken without a crisis, while the PNG experience over the same period suggests crisis are not sufficient to trigger long-term reforms. Reform during a crisis inevitably requires financial assistance, the most amenable sources for which are international financial institutions (IFIs). This is for two reasons. First, in a crisis private lenders may not have the capacity to provide an adjustment loan; and second, the loans from the private sector are likely to be more expensive than those from IFIs given donor subsidies attached to the latter.

The selling and implementation of reforms after their design is left to political masters. PNG has perhaps reached such a juncture. The political leadership could be induced to on the tasks of reform in response to an impending budgetary crisis. IFIs such as the World Bank and the International Monetary Fund have a role only in so

¹⁸ See Khan and Sharma, 2001.

far as their support is necessary to the design and implementation of the reforms. Prior to committing funds for reform, a responsible lender should ensure that the borrower has the capacity to repay the debt. Problems of moral hazard imply that loan conditions need to be stringent and closely monitored. In the specific case of an IFI lender, ex-post adherence to lending conditions is less than fully credible given that the borrower is a shareholder in the IFI.

Ownership of reforms by the local leadership aligns the incentives of the borrower with those of the lender, and hence is likely to be critical for success of future reform. Such alignment is also likely to reduce any information asymmetry between the two parties. When they borrow, private firms pledge collateral and some minimal level of equity to secure funds for investment; such commitments provide the lender with avenues to recover the loan in the event of default, but more importantly the collateral provides incentives to the borrower to minimise the possibility of default. In the case of sovereign debt, domestic collateral is of little value in securing credit. When such debt is taken from an institution where the borrower is also a shareholder of the institution,¹⁹ structural adjustment loans take on new dimensions over and above those relating to private debt. As an example, “the IMF is mandated by its Articles of Agreement to extend temporary financial assistance to member countries facing balance of payments difficulties under adequate safeguards” (Khan and Sharma, 2001: 6).

In the absence of access to internationally acceptable collateral, the lender introduces conditions in the loan contract to prohibit the borrower from taking actions that could

reduce the probability of repayment.²⁰ The PNG government used some of its tax income from mineral exports to raise revenues during the fiscal stress of 1994 and 1999, but the revenues raised from this mechanism were small relative to the total. Conditionality is relevant in securing credit from IFIs but their effectiveness in preventing non-performance are weak “since the borrowing country is always more valuable as a going concern” to the IFI (Khan and Sharma 2001: 9). Given the above, recipient countries know that in the event of non-performance, the program will be renegotiated, thereby seriously limiting the credibility of any penalties for non-performance built into the loan agreement. Consequently, conditions imposed by lenders that are in conflict with local interests are unlikely to be implemented, making the alignment of interests of the lender with those of the borrower all the more important. These considerations will need to be taken into account in the design of any reform initiatives for PNG; the chances that such an agreement would succeed *ex-post* are greater when the negotiations are done before rather than during a crisis.

7. Role of foreign aid

Crisis sometimes spurs reform (as in the case of Korea in the 1997-8 Asian Financial Crisis and that for Mauritius in 1964) and particularly so when maintaining the *status quo* could be most damaging to the economy. Failure to reform and the consequent punitive consequences of non-action has the potential to create incentives to induce cooperation amongst diverse and disparate interests, thereby raising the chances of reform. A corollary of this argument is that foreign aid that effectively stalls a crisis,

¹⁹ Khan and Sharma (2001) describe the IMF as a cooperative with little recourse to mechanisms in the case of loan default except moral suasion, threat of lowering the borrower’s credit rating, peer pressure, and the threat of being shut out of international capital markets.

²⁰ Wade (1998) suggests that in the rescue following the Asian financial crisis of 1997, the IMF placed conditions on Indonesia that were well beyond those necessary to protect against default on the extended credit.

as may be the result of well-intentioned bilateral and multilateral aid, will leave the underlying causes to be addressed. Reforms that are delayed in anticipation that some other interest group, a donor for example, will bear the costs of reform also results in critically needed reforms being put off indefinitely. By securing bail-outs in the aftermath of each of its fiscal crises, Australia may have contributed to repeat of crises in PNG. Indeed the voracity effect from aid may have rewarded corruption and rent seeking, all to the detriment of growth of the economy. PNG could have been forced to default on its debt had Australia and IFIs not come to its rescue in each case of the hard landing.²¹

8. Conclusion

The current fiscal position of PNG is not sustainable, and a crisis is inevitable unless drastic action is taken. A new government early in office with the view to remaining in office for the full term has strong incentives to take action to avert a fiscal crisis.

The deficit bias of the past quarter century has led to debt nudging 80 percent of GDP, with interest costs amounting to 18 percent of recurrent expenditure or more than half of the development budget. These figures suggest that room for continued fiscal excesses no longer exist; this, indeed, could have been part of a deliberate strategy, and a rational response given the incentives of past governments.

The current reality may not necessarily be all bad news. Given that there is little option other than to embark upon structural reforms in order to raise long-term economic growth prospects may in fact be a promising beginning. Such reforms often require significant investment in infrastructure and the removal of structural

²¹ See Krueger and Rajapatirna (1999) on conditional lending.

impediments to efficient allocation of resources. The costs of such investments are often met from IFIs who in turn need to ensure that the loans are repaid on maturity. The risk, as adequately demonstrated by past efforts at reform, is that the reforms efforts are temporary and last only until the symptoms of crisis disappear. Expectations of external support in a crisis may be deferred action before a crisis and stalled action in the recovery phase; hence, external support even with the best of intentions could have been counter-productive.

Microeconomic reforms sometime are intrusive in nature and become politicised when seen as being imposed from abroad. Outcome-based conditionality is one possible route to follow, but principal-agent problems will be encountered. This has been the approach taken with all of the IFI-supported reforms in PNG. An alternative route would be to have the reforms designed at home with any needed funding being sought after the design. No doubt, the most competitive funding for such reforms is likely to come from IFIs rather than commercial sources, but this approach is more likely to achieve the desired outcomes than the approaches used in the past. Policymakers in PNG must begin working on structural reforms before it is too late. The same incentives exist for donors, IFIs, and “Friends of PNG” to support the policymakers in their efforts to position the economy on a path of sustainable growth.

References

- Athukorala, Prema-chandra and Peter G Warr 2002. “Vulnerability to a currency crisis”, *The World Economy* 25(1): 33-57.
- Balassone, Fabrizio and Raffaella Giordano 2001. “Budget deficits and coalition governments”, *Public Choice* 106: 327-349.

- Barro, Robert 1979 “On the determination of public debt”, *Journal of Political Economy* 87: 940-971.
- Bank of PNG (various issues) *Quarterly Economic Bulletin*, Port Moresby.
- Chand, Satish and Theodore Levantis 2000. “Crime and dutch disease effects of a mineral boom in PNG”, *Australian Journal of Agricultural and Resource Economics* 44(1): 129-146.
- Chand, Satish and Charles Yala 2002. “Economic policy making in Papua New Guinea”, paper presented at State Society and Governance Workshop, 21-22 February, The Australian National University.
- Duncan, Ron 2001. “PNG economic survey: a scorecard for the Morouta administration”, *Pacific Economic Bulletin* 16(2): 1-14.
- Duncan, Ron and Tony Lawson 1997. “Cost structures in Papua New Guinea”, Discussion Paper No. 69, Institute of National Affairs, Port Moresby.
- Department of National Planning and Rural Development, 2003. “Medium Term Development Strategy (MTDS) 2003-2007”, Draft Technical Paper, May 2003, Port Moresby.
- Easterly, William 2001. “Growth implosions, debt explosions, and my Aunt Marilyn: Do growth slowdowns cause public debt crises?”, The World Bank.
- Edin, Per-Anders and Henry Ohlsson 1991. “Political developments of budget deficits: Coalition effects versus minority effects”, *European Economic Review* 35: 1597-1603.
- Grindle, Merilee 2000. “Designing reforms: Problems, solutions, and politics”, John F Kennedy School of Government Faculty Research Working Paper Series (November), Havard University.

- Khan, Mohsin and Sunil Sharma 2001. "IMF conditionality and country ownership of programs", IMF Working Paper WP/01/142.
- Krueger, Anne O and Sarath Rajapatirana 1999. "The World Bank policies towards trade and trade policy reform", *The World Economy* 717-40.
- Romer, David 2002. *Advanced Macroeconomics*, Second Edition, McGraw-Hill.
- Roubini, Nouriel and Jeffrey Sachs 1989. "Political and economic determinants of budget deficits in the industrial democracies", *European Economic Review* 33: 903-33.
- Tornell, Aaron and Philip Lane 1999. "The Voracity effect", *The American Economic Review* 89(1): 22-46.
- Wade, Robert 1998. "The Asian debt-and-development crisis of 1997-?: Causes and consequences", *World Development* 26(8): 1535-53.
- World Bank, 1978. *Papua New Guinea: Its economic situation and prospects for development*, World Bank Country Economic Report, Washington, DC.
- World Bank 1999. *Papua New Guinea: Improving governance and performance*, Report No. 19388-PNG.

Table 1: Basic economic indicators for Papua New Guinea

	PNG
Endowments	
Population (m)	5
Labour force	2
Land area (km ²)	453
Population density (people per km ²)	9
Fresh water (m ³ per capita for 1996)	181,993 (annual harvest 0.1%)
Income, level & distribution	
GDP (US\$b, for 1997)	5.165
GNP per capita in \$1997 (PPP adjusted)	970 (2390)
Gini index	50.9 (for 1996)
Expenditure share of top 10 percent of population	40.5 (for 1996)
Factor prices	
Minimum wages	Yes
Interest rate for loans (2001) ^a	17.3
Indicators of Quality of life	
Life expectancy at birth	54
Adult illiteracy	37
Structure of production (% of GDP) (data for 1997)	
Share of Agriculture	26
Share of Industry	40
Share of Services	33

Notes: ^a this is the weighted average rate as reported by BPNG, 2002; for rest of data, the source is World Bank Tables, 1999.

Figure 1: GDP levels and debt as a share of GDP

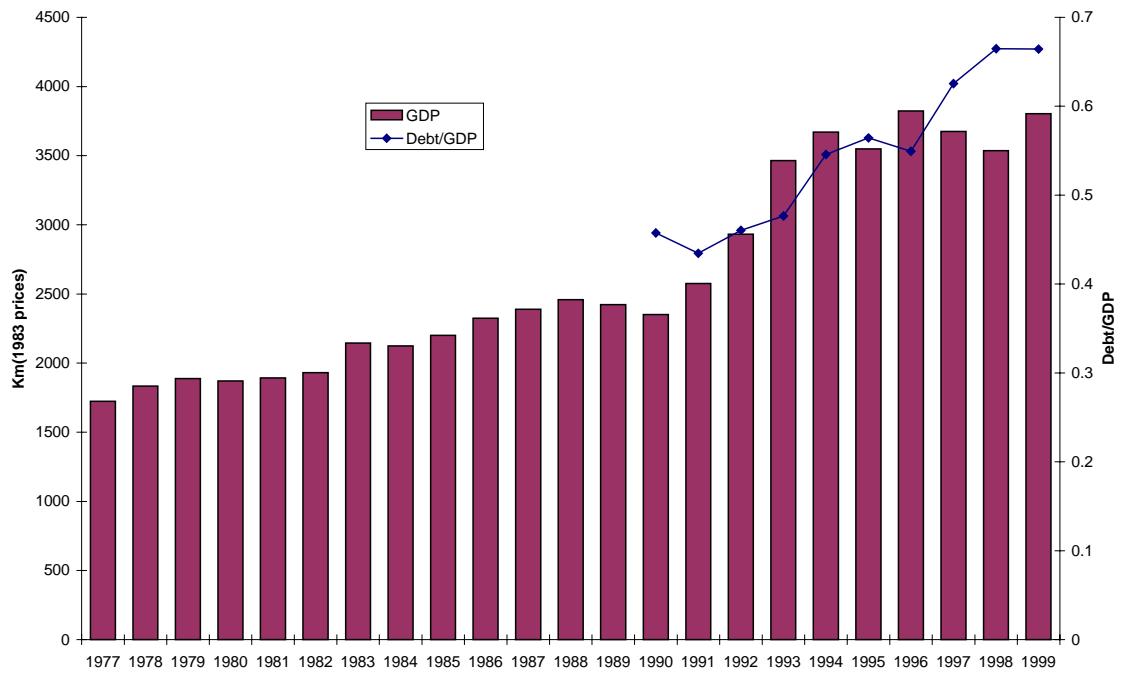


Figure 2: Budget deficits (percent of GDP)

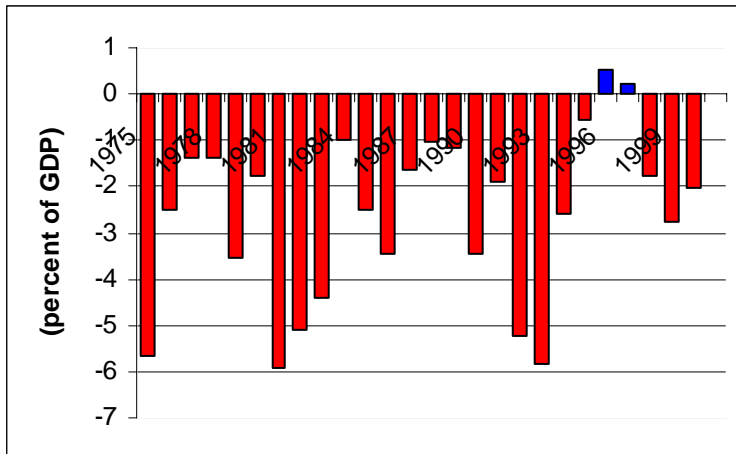


Figure 3: Interest rates on PNG and Australian treasury bills

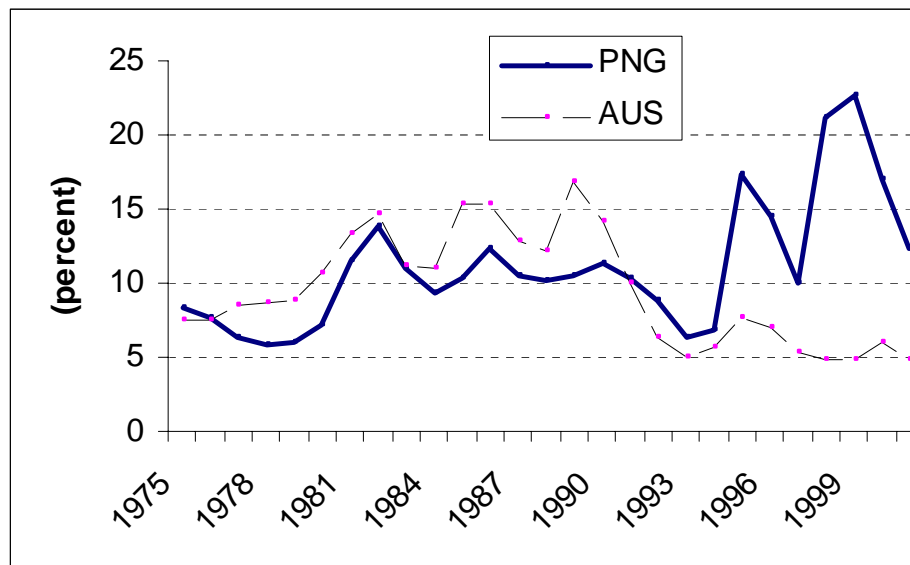


Figure 4: Interest rates, monthly from 1990 to 2001.

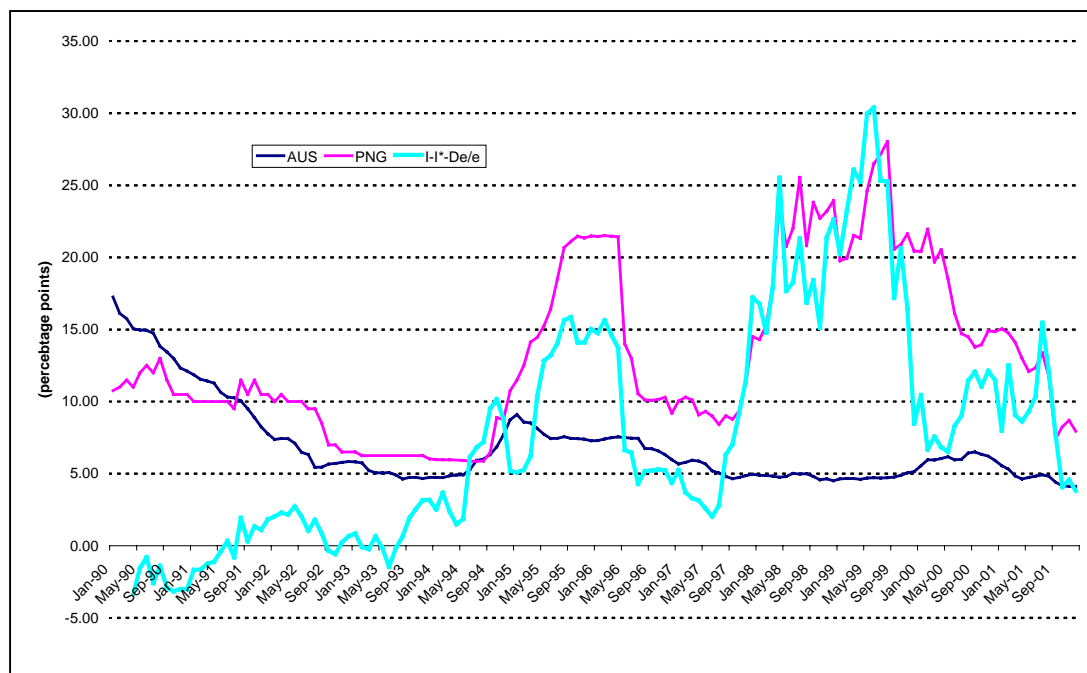


Figure 5: CPI inflation, 1975 to 2001

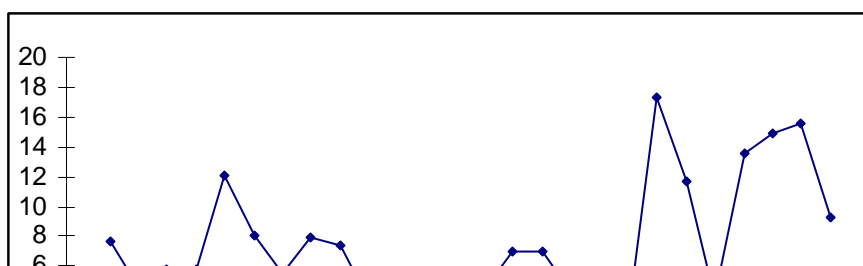


Figure 6: Foreign reserves and exchange rate (monthly from 1990 to 2001)

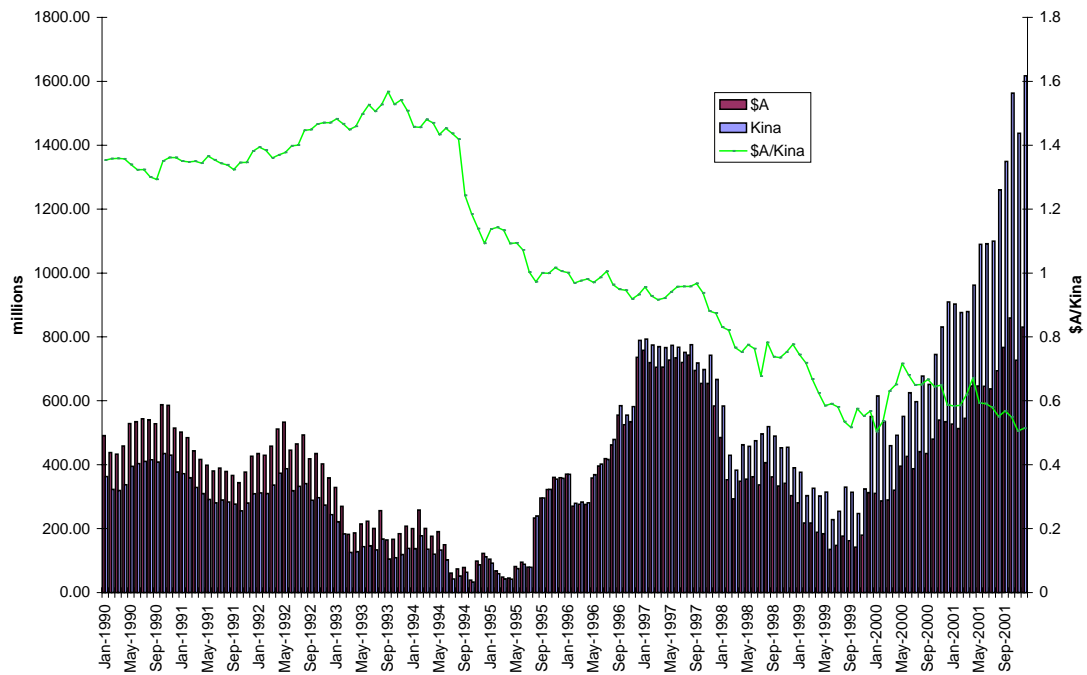
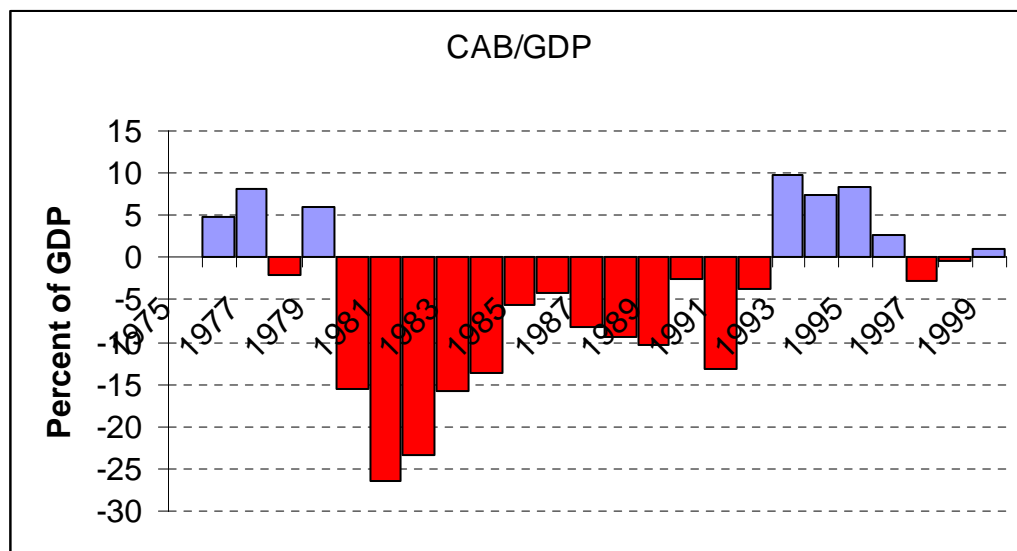


Figure A1: Current Account Balance, 1975 to 1999.



Note: Based on data drawn from the International Economic Databank (IEDB), The Australian national University.