AN ECONOMETRIC ANALYSIS OF GROWTH PERFORMANCE AND ADJUSTMENT UNDER POLICIES INSPIRED BY THE IMF IN THE PACIFIC ISLAND ECONOMIES

BY

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ABSTRACT

This study, utilising a region-country-specific approach, examines the experience of four Pacific island economies (Fiji, Papua New Guinea, the Solomon Islands and Western Samoa) under policies inspired by the International Monetary Fund's (IMF) during 1980-92. To achieve this, the study examines the nature and the causes of economic crises in these countries and IMF's policy response. An empirical analysis of this study starts with a formulation of a growth model within the new endogenous theory of growth, examining the significance of a range of factors thought to have influenced growth performance. The theoretical arguments of IMF-inspired policies and an empirical analysis testing the arguments are also examined. The central concern is how far IMF-inspired macro policies produced desired objectives. This is investigated through an econometric analysis of the relationship between the objective variables of sustained growth, a viable balance of payments and low inflation, and a number of its instrumental tools, and examines the contribution of IMF-inspired policies on the socio-economic development of these countries.

The results show the economic crises during 1980-92 were a product of a combination of internal economic and non-economic and external factors causing sluggish growth, large deficits in current account, deteriorating balance of trade and inflationary pressures. The investigation of the crises revealed that some factors were common in all four countries while others were country specific. Empirical results show high inflation, low levels of outward orientation, high government consumption, exchange rate variability and vulnerability to the vagaries of natural disasters and the international economic environment adversely affected growth performance. Empirical results provide weak evidence of political instability

adversely affecting economic growth while investments in human and physical capital did not contribute to growth.

In evaluating IMF-inspired policies, the developing South Pacific country case studies indicate that such policies have satisfactorily shown most of the desired effects of policy variables on the stated macroeconomic objective of a viable balance of payments in all four countries. However, while some effects of the policy changes on the objective variable are as expected and desirable, their impacts are insignificant in most cases. The growth objective was most effectively met in Western Samoa, balance of payments in Fiji and price stability in PNG.

The theoretical arguments of the study also reveal that IMF-inspired policies have been rigid, inclined to the monetary approach to the balance of payments, but generally failed to take into account the preferences of people in a country and the impact on them. This analysis largely complements this theoretical contention, revealing slowing and sometimes reversing progress in incomes, real wages, food prices, employment creation, provision of health services and nutrition levels, and showing that IMF-inspired policies did not make a significant contribution towards enhancing the standard of living.

The study concludes that solving the development problem of South Pacific countries requires more than simply targeting macroeconomic variables. IMF-inspired policies that take into account the macroeconomic as well as socio-economic variables are a first step in enhancing the growth and development of the developing countries in the South Pacific and providing long-term betterment for the people.

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CHAPTER ONE

INTRODUCTION

1.1 STATEMENT OF THE PROBLEM

The 1980s was a difficult period for many developing countries in the South Pacific region. The countries experienced external imbalances due to a combination of external and internal events on an unprecedented scale. These events included the deterioration of terms of trade; substantial increases in the energy prices; sluggish growth of major trading partners; high interest payments on growing debts; a reduction in demand for their exports; inappropriate domestic policies; and natural disasters. While the severity and the nature of these events varied from country to country, their persistence found expression in rising balance of payments (BOP) deficits, increased inflation, deteriorating balance of trade (BOT), and declining real *per capita* incomes, thereby hindering overall development prospects. The effects were so severe that the countries could not cope without the assistance of international financial institutions such as the International Monetary Fund (IMF), providing financial assistance conditional upon major adjustments in economic policies and the recipient countries satisfying IMF's desired policy objectives.

In response to their deteriorating economic environment a number of developing South Pacific countries implemented IMF-inspired policies, measures designed to achieve an improvement in the BOP, long-term growth performance and low inflation, thus enhancing the overall growth and development. This took the form of monetary tightness, fiscal austerity, currency devaluation, wage restraint and interest rate and trade liberalisation, standard measures prescribed by the IMF to its member countries, supported by stand-by arrangements and compensatory financing, among others.

Despite such measures, developing South Pacific countries, as with developing countries elsewhere, have continued to experience growing external imbalances with declining economic performance and worsening social conditions. Similar outcomes elsewhere have led some critics such as Krugman and Taylor (1978), Taylor (1983), Diaz-Alejandro (1981), Killick (1984), Loxley (1984), Zulu and Nsouli (1985), Helleiner (1986), Khan (1990), Killick *et al.* (1992) and Killick (1995) to argue that IMF-inspired policies are inappropriate to a nation's overall development. As such, this problem needs investigation, questioning the extent to which IMF-inspired measures produce their desired objectives. Therefore, the next section outlines how this issue is addressed.

1.2 OBJECTIVE OF THE STUDY

The objective is to examine the experience of developing South Pacific economies, Fiji, Papua New Guinea (PNG), the Solomon Islands and Western Samoa, in the implementation of IMF-inspired adjustment policies, and show to what extent

such policies produce their stated objectives. More specifically, two central concerns are to examine econometrically how far prescribed macro policies produced the desired objectives: a viable balance of payments, a low rate of inflation and a sustained real growth of gross domestic product (GDP); and to quantitatively examine the contribution of the IMF-inspired policies on the socio-economic development of these countries. The choice of countries is based on the fact that IMF has been closely involved with their economic adjustment efforts since the 1970s. The experience of the implementation of IMF-inspired policies is examined over the 1980-92 period because these countries made a number of purchases under the stand-by and compensatory financing facilities and the availability of data for empirical work.

The methodology adopted is unique in a number of ways from the existing studies on IMF-inspired policies elsewhere. The econometric model utilises a region-country-specific approach. Existing studies such as Reichmann and Stillson (1978), Pastor (1987), Khan (1988), Nunnenkamp and Schweickert (1990) and Doroodian (1993) concentrate on larger developing countries with one feature in common: investigations based on cross-sectional data involving a number of countries from different or similar regions. The validity of such studies can be questioned on the grounds that there is a variation in economic, social and political parameters from country to country and region to region. As such, the empirical methodology adopted here uses a region-country-specific approach, where a number of macroeconomic parameters are analyzed on a country-by-country basis in a specific region.

Further, existing approaches to model estimation are questionable and heavily criticised in the literature on the grounds that there are essential methodological shortcomings (see section 5.2 in chapter five), these limitations, force the adoption of a reduced form equation utilising a region-country-specific approach, to explain the effect of IMF inspired policies.

Finally, this study concentrates on small developing countries of a specific region. A number of existing, mainly cross-sectional studies, for example, Reichmann and Stillson (1978), Pastor (1987), Khan (1988) and Doroodian (1993), concentrate on larger developing economies particularly in Africa and Latin America. Detailed econometric modelling of growth and IMF inspired policies in small developing economies of the South Pacific do not exist.

Given these objective and the methodological features, the next section presents an outline of the entire study, incorporating these features.

1.3. OUTLINE OF THE STUDY

This study is divided into seven chapters and proceeds as follows. In chapter two, an exploratory analysis of the economic crises during the period 1980-92 for Fiji, PNG, the Solomon Islands and Western Samoa is given. Specifically, the chapter provides an analysis of trends in key macroeconomic variables such as GDP, BOP and the rate of

inflation followed by an outline of adjustment policies implemented in response to the crises. This chapter is written as a background to succeeding chapters enhancing the understanding of the issues raised.

Chapter three estimates a growth model for the developing South Pacific economies examining the significance of various economic and non-economic factors identified by the recent new endogenous growth theory, and complements the qualitative analysis of chapter two, the theoretical arguments raised in chapter four, and some of the empirical work in chapter five.

Chapter four provides a review of the standard policies commonly supported by the IMF and the academic debates associated with it. The aim is to present a review of the policies in a theoretical and an empirical context. This chapter complements chapter five where a range of theoretical arguments discussed are empirically investigated in the context of the selected South Pacific economies.

Chapter five is the main focus of the research. It provides a brief review of the existing approaches to model estimation, develops an econometric model and estimates the model generating estimates for a set of parameters that are considered important policy instruments. The chapter also presents the results of the relationship between IMF's objective variables and instrumental variables through econometric estimations. The effects of policy changes on the objective variable are determined from the values of the estimated coefficients.

Chapter six provides a quantitative analysis of the progress in socio-economic development as a result of the implementation of IMF inspired measures in the 1980s. The chapter assesses socio-economic development by examining aggregate incomes, real wages, food prices, employment, provision of social services, particularly health and education, nutrition and overall standard of living. The intention here is for a more straightforward assessment, since interest is in actual socio-economic progress in adjusting countries, not whether it was better or worse than some counterfactual situation.

Chapter seven presents a conclusion focused around the issue of how far IMF inspired policies have been successful in meeting their desired objectives, conclusions derived from the outcomes of the various chapters.

CHAPTER 2

THE ECONOMIC CRISES AND IMF INSPIRED POLICIES

2.1 INTRODUCTION

This chapter provides an analysis of the nature of the economic crises in Fiji, PNG, the Solomon Islands, and Western Samoa during 1980-92 by examining the trends in a number of macroeconomic variables, and outlines the nature of IMF policies implemented in response to deteriorating individual economic positions. Thus, this chapter is written as background to the chapters which follow, thereby enhancing an understanding of the IMF inspired policies and the analysis of their impact on key economic and social variables discussed in chapters three, five and six.

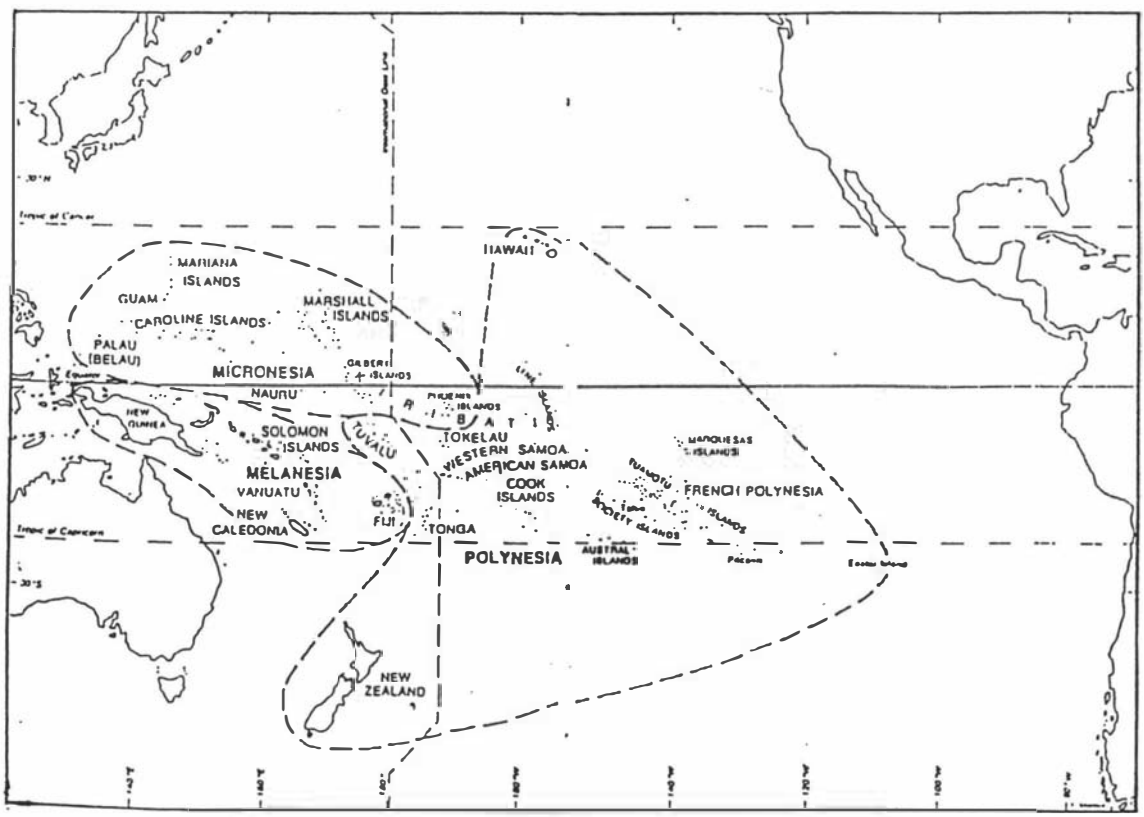
This chapter is organised into five sections. Section 2.2 provides a review of the economies of Fiji, PNG, the Solomon Islands and Western Samoa, and a discussion of the factors leading to economic crises. Section 2.3 investigates the nature of the crises while section 2.4 outlines the nature of IMF inspired policies implemented in each country in response to the crises. A conclusion to the chapter

is presented in section 2.5.

2.2 A REVIEW OF THE ECONOMIES OF FIJI, PNG, THE SOLOMON ISLANDS AND WESTERN SAMOA

The small island countries of the South Pacific region are scattered widely over the Pacific ocean (map 1). The region stretches from the Northern Mariana Islands in the North West, through Micronesia and PNG to New Caledonia and Tonga in the South and French Polynesia in the East.

Map 1. *The Pacific Islands Setting*



There are 22 countries in the region, with a total population of approximately 6,884,000 in mid-1995 (Pacific Report, November 1995), 550,652 square kilometres of land and 29,523 square kilometres of sea (South Pacific Commission, 1993).[1] PNG is the largest economy with a population of approximately 4,042,400 (mid-1995 estimate) and a land area of 872,350 square kilometres. At the other end of the spectrum is Pitcairn with a population of 53 (mid-1995 estimate) and a land area of 5 square kilometres. By international standards the countries in the region range from small to very small.[2]

Smallness in size has also meant low levels of land based resource endowments in a number of countries except for some deposits of gold (PNG and Fiji), copper (PNG), nickel (New Caledonia) and oil reserves (PNG). Nevertheless, one thing common in terms of resources is that each country in the region claims a 200 mile Exclusive Economic Zone (EEZ), giving them control of the largest potential marine resource in the world. As will be discussed later, the EEZ does not offer a basis of rapid development of South Pacific island countries in the short to medium term. In addition, some countries are endowed with exploitable forests and human resources (as seen in acceptable health, literacy and income measures).

Although the levels of resource endowment vary from country to country,

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[1] Appendix 1 lists the countries in the region and provides some basic physical and demographic information.

[2] In terms of defining size, Chenery and Syrquin (1975) and Srinivasan (1986) suggest that a country's population is the primary measure of size with gross national product (GNP) the secondary measure. The cutoff point for smallness is between 1.5 million and 5 million people.

their exploitation in some countries has allowed domestic economic expansion and created a link with the global economy. This form of link with the world capitalist system dates to the pre-colonial era, exposed by the sixteenth-century explorers from Spain and Portugal, seventeenth-century explorers from the Netherlands and eighteenth century explorers from the United Kingdom (Brookfield, 1972; Lal, 1992; Lockwood *et al.*, 1993; and Harding and Wallace, 1993).[3] Westerners began by engaging in trading food and fresh water, then, later, sandalwood, beche-de-mer and copra. This facilitated the involvement of the islands in the world economy, a form of international exposure integrating the region with international trade, thus allowing the expansion of economic activity especially in plantation agriculture: copra and cotton (for a short duration in Fiji) followed by sugar in Fiji, oil palm, coffee and cocoa in PNG and cocoa in Western Samoa. As time went by, other forms of economic activity, such as extraction of gold in Fiji and PNG and copra and plantation agriculture in the Solomon Islands and Western Samoa, progressed, led to the development of agriculture as well as manufacturing, retail and wholesale business. Thus, capitalism gradually became the dominant mode of production in the South Pacific.

As development progressed, pressures for increased state ownership and control of economic activity grew among Western colonies worldwide. Growing pressures of decolonisation elsewhere seemed to have worked in favour of the South Pacific countries as some gained their independence. Western Samoa was first to gain

[3] Histories of the Pacific islands are also given by Smith, Bedford and Latham (1988) and Howe, Kiste and Lal (1994).

independence from New Zealand in 1962. United Kingdom followed by returning full sovereignty to Fiji in 1970 and the Solomon Islands in 1978. Australia granted independence to PNG in 1975. A comprehensive review of decolonisation of countries in the South Pacific is provided by Macdonald (1994), Wesley-Smith (1994), Kiste (1994) and Deckker (1994).

A number of features characterised the four economies at the time of independence: real *per capita* gross national product (GNP) was above the world average for all lower middle income economies, plantation was the predominant economic activity, export led production and import led consumption, dependence on their colonial powers for markets, aid and administrative support, and few forward and backward linkages evolved as a result of developments in the pre-independent era. Thus, there was little development of predominantly small scale industries.

It can be argued that these countries, at independence, would have expected a higher rate of development in the years following independence as they gained control of resources and economic activity and the opportunity to capitalise on developments in the pre-independence era. This was true for some countries. For example, in Fiji the years following independence were marked by impressive growth in GDP averaging 4 percent in the 1970s (Elek *et al.*, 1993), and living standards began to rise with an increase in GDP (Cole, 1989). This was supported by an expansion of tourism and sugar industries and public investment in hydroelectricity and water services (Browne and Scott, 1989 and Knapman, 1990). In PNG, real GDP growth averaged 1-2 percent during 1976-79 (Browne and Scott, 1989), a low

growth due to the customary ownership of land which did not give a clear guarantee of tenure thus depressing agricultural output (Fairbairn *et al.*, 1993). In addition, low ore grades at the Bougainville Copper Mine generated less income. The Solomon Islands showed an impressive economic performance with real GDP growth averaging 7-8 percent annually in the 1970s, a result of strong growth in external grants and donations from a wide range of donors (Browne and Scott, 1989). Western Samoan economic performance was not impressive following independence, as investment and growth were constrained by shortage of foreign exchange and stagnant exports from plantation agriculture.

The present socio-economic conditions of the four countries (discussed in detail in chapter 6) vary from country to country. One aggregate indicator is *per capita* income and, on the basis of this, Fiji, PNG and Western Samoa fall in the lower-middle-income category and the Solomon Islands in the low-income category (The World Bank, 1995). In 1994, Fiji's GNP *per capita* was US$2130 followed by PNG (US$980), Western Samoa (US$950) and the Solomon Islands (US$740) (The World Bank, 1995).

It can be argued that these countries' present economic state is a result of a number of factors constraining development, factors whose severity are probably much greater than those experienced by many other developing economies. For the South Pacific islands, these factors are thoroughly enumerated in Siwatibau (1991), Kasper (1991), Fairbairn *et al.* (1993) and Knapman (1994). There are factors common across the four countries and include remote trading partners resulting in

huge transportation costs; natural disasters; small open economies, subjected to the vagaries of world market forces; narrow agriculture dominated export base; shortage of a skilled workforce; growing population pressures on resources; cultural constraints; physical resource constraint; and poor administrative and infrastructural facilities.

The severity of factors mentioned above can be best explained by analysing each of these in detail. For example, high internal and external transport costs are a constraint to the development of domestic markets and export opportunities, while modernisation of sea and air transports favour bulk goods and marginalise outer islands and even entire countries (Proctor, 1980; Brookfield, 1980; and Forsyth, 1986). In relation to distance from the world markets, the South Pacific Commission (1984) estimates that nineteen countries of the Pacific are on average 2,900 kilometres away from a population centre of 500,000 people or more, compared with 700 and 1,800 for the Caribbean and the Indian Ocean, respectively. On the other hand, dispersion is found, by the United Nations Council on Trade and Development (UNCTAD) Secretariat (1985), to be particularly acute in the Pacific even by comparison to other island regions. As noted earlier by Ward (1967), dispersion in itself distinguishes the South Pacific islands from the general body of small nations. It can be argued that remoteness, as a major constraint, may not be applicable in all countries across the South Pacific. Remoteness is quickly vanishing as a result of the growing involvement of investors from the South East and East Asian countries. However, their investment activity is questionable so far as the island's development is concerned as they are multinational companies who are more bent towards the

exploitation of precious South Pacific island mining, fisheries and forestry resources. Therefore, remoteness does not matter much when lucrative resources can be exploited at below market prices. In support of this argument, Jackson (1989) suggests that there is no longer any place so remote as to be beyond the range of miner, forester or fisherman.

Although the countries are endowed with some physical resources their supply is limited, with the exception of PNG, thus severely constraining production and trading possibilities and dictating a pattern of specialisation that makes for vulnerability to external forces.[4] Low resource endowment also implies a high import content in relation to GDP making an economy dependent on foreign exchange earnings. A contrary line of argument maintains the EEZ offers a vast expanse of marine resources, capable of revolutionising the island economies. Yet there is no proven marine resource beyond the currently known fish stock of which 90 per cent is presently commercially exploited (Knapman, 1994). Knapman (1994) argues that the countries in the region are not necessarily in a position to exploit the EEZ themselves due to the lack of capital and technological requirements of distant water fishing. EEZ resources are likely to remain either unexploited or prove empty for many countries.

The dependence on trade creates a problem of its own. All four countries' exports are primary products for example cocoa, coffee and copper (PNG), root crops

[4] Briguglio (1995) provides a thorough discussion of the major vulnerabilities of small island developing states and also quantifies an index of vulnerability, never quantified before.

and copra (Western Samoa), sugar (Fiji) and copra and palm oil (the Solomon Islands). The prices of these products depend upon the world market which results in considerable instability contributing to wide fluctuations in export earnings.

Many South Pacific island countries experience natural disasters such as cyclones, drought and flooding. Although such disasters occur in non-island countries as well, their impact on these South Pacific island economies is relatively large in terms of damage per unit area and costs *per capita*, due to their small size. The effects such as the devastation of the agriculture sector, eradication of village settlements, disruption of transport and communication systems and death has severe long-term effects on growth and development of these countries

The problem of public administration is a result of large governments (Fairbairn *et al.*, 1993). Governance tends to be very expensive *per capita* when the population is small. In addition to this, Briguglio (1995) argues that within the public administration is the problem of people knowing each other well and often related to each other which works against impartiality and efficiency within the civil service, and a merit based recruitment and promotions policy. This line of argument is highly applicable in the South Pacific countries, both because of their small population and also because of the importance of subnational community forms (e.g. tribes, clans, wantoks) in social life.

There are also factors constraining development which are more country-specific. For example, these economies are highly burdened with growing social

problems such as rural to urban migration (all countries), emigration (Fiji and Western Samoa), unemployment (all countries), low literacy levels (PNG and the Solomon Islands), instability of governments (Fiji and PNG), uneven income distribution (all countries), poor health (PNG and the Solomon Islands) and urban crimes (all countries). Siwatibau (1990) suggests, that aside from PNG, where records are abysmal, health and literacy indicators are quite good for the region. This is not the case, or at least debateable. There are large variations in human resource endowments across the countries in the region. For example, the Solomon Islands has the highest population growth rate in the region, with low literacy levels and high infant mortality rates. Life expectancies in PNG, the Solomon Islands and Western Samoa are low, as a result of poor health and health care services. In addition to this, the population per physician is very high in all four countries. According to the World Bank (1994), PNG's 48 percent of the population above 15 years of age are illiterate, compounded by poor health giving an average life expectancy of 56 years.

The economic consequences of factors constraining development, some of which are almost inescapable, offer little chance for rapid economic development of these economies. In spite of varying levels of problems, the fundamental development constraint confronting Pacific island countries is closely associated with Mishan's (1967) contention of a widening margin of discontent. Mishan (1967) argues that, in a situation where wants were static, growth in aggregate annual income would have to be 2 percent or more in order to maintain the average standards of living for the growing population. This certainly is not the case in the four countries. For example, growth in real *per capita* incomes are less than 2 percent (Table 26 in chapter six),

thus suggesting a below average standard of living. Therefore, the four countries are constrained in terms of expanded development in that the desire of the people of these countries for higher standards of living is constrained by the low levels of production.

Given the constraints to development, and despite the independence and control of most economic activities, dependence of the four South Pacific countries on the economies of the Western metropolitan capitalist system remains very strong. This causes vulnerability to the business cycle of their trading partners. As such, it can be said that, in the midst of a growing deterioration of domestic economic conditions, economic and social crises seem to have emerged. These crises seems to be entrenched and dominates South Pacific economic and social development. Hence, it is important to understand the nature and the causes of these crises. Accordingly, the next section addresses this issue.

2.3 NATURE OF CRISES

This section investigates, country by country, the nature of crises on the basis of the changes taking place on a number of macroeconomic variables during 1980-1992.

2.3.1 Fiji

Background

Fiji is the most developed of the island countries. It has a relatively high standard of living and incomes, a skilled workforce, a good level of services and infrastructure and a good resource base: fertile soils, forestry, minerals and fisheries (Cole, 1993). It is an agriculture based country where sugar export since the 1880's (Ali and Narayan, 1989) has been a major contributor to the GDP along with, more recently, tourism, gold and light manufactures. Fiji's long-term development is basically a result of, firstly, the export of sugar followed by exports of gold from 1932 and earnings from tourism from the mid-1960s (Knapman and Schiavo-Campo, 1983). In spite of its comparatively good resource base and living standards, development has been constrained by a number of factors. The World Bank (1994) suggests that factors constraining development (discussed earlier) are not as severe in Fiji as in case of other South Pacific island countries. This is debatable. For example, as will be seen in this section, adverse weather conditions (droughts, tropical cyclones and flooding) have been, probably, harsher in Fiji than in most other South Pacific island countries. Fiji has also faced the vagaries of world market conditions and a severe brain drain. Despite these problems, Fiji's central location and a well developed social and economic infrastructure in transport, communication and education, as a result of developments in the past two decades, makes it a regional centre for the South Pacific island states.

With regard to Fiji's long-term performance (referring to period 1970-92 for all four countries), GDP grew at an annual average rate of 4 percent per annum during 1956-73 (Elek *et al.*, 1993) owing to high sugar price, construction boom and strong tourism expansion during 1970-73 (Browne and Scott, 1989 and Knapman, 1990) as well as sound macroeconomic management (Luckett, 1987). Growth halted during 1974-75 due to world recession, then averaged 3.5 percent annually during 1976-80 due to increased sugar yields (Knapman, 1990). Over the period 1965-89, growth in GNP *per capita* has been disappointing, averaging 1.8 percent per annum (Elek *et al.*, 1990). One contributing factor is Fiji's inheritance of a very paternalistic and interventionist approach to microeconomic management (Elek *et al.*, 1993). This failed to generate growth and diversification, distorted market signals and reinforced rent seeking rather than promoting productivity. At the same time, other regions in a similar position, such as in the Caribbean and South East Asia, followed a vastly different direction of promoting exports, some of which are now in a better economic and social position. Nevertheless, Fiji, over the same time, has shown impressive social performance including near nationwide primary school enrolment (Gannicott, 1990), high levels of adult literacy and life expectancy, good standards of public health and an absence of major tropical diseases such as malaria. The performance in the 1980s has again been disappointing and the next section investigates this in detail.

Nature of Crises in Fiji, 1980-92

Like most developing economies, the impact of the second oil shock was

evident in Fiji by 1981, indicated by the rising value of oil imports, lower growth in overall exports, and a rise in BOP deficits (Figure 1), leading to a decline in total reserves, increased inflation and debts (Table 1). Overall growth was 4.6 percent in 1981 due to an increase in production of sugar cane and fisheries (Appendix 2). In 1982, however, growth declined substantially due to a decline in export prices of major primary commodities, with greatest declines registered by rice (36 percent) and sugar (44 percent), causing the current account balance (CAB) and overall BOP to remain in deficit for all of 1982 (Asian Development Bank (ADB), 1982). In addition, this lower availability of external resources reduced the capacity to import, causing a decline in the share of imports to GDP from 57 percent in 1981 to 50 percent in 1982 (Table 2). Consequently, Fiji adopted special measures to reduce its imports including high import duties, mainly on luxury items (see section 2.4).

Fiji's growth was significantly influenced by international market conditions and weather patterns, both of which were unfavourable in 1983. During that year, the prices of Fiji's major exports remained depressed. Two cyclones in the early part of the year, and then prolonged drought nearly halved sugar production from 405,700 tons in 1982 to 220,300 tons in 1983, as well as reducing output of other agricultural crops (Appendix 2). Given the adverse impact of unfavourable weather, export receipts were reduced (Table 3) but were largely offset by the inflow of insurance payments thereby cushioning the balance of trade (BOT), CAB and overall BOP figures (Figure 1). However, the external reserves position deteriorated as a result of a drop in the volume of sugar exports and earnings.

Figure 1. *Trends in BOP, CAB and BOT in Fiji*

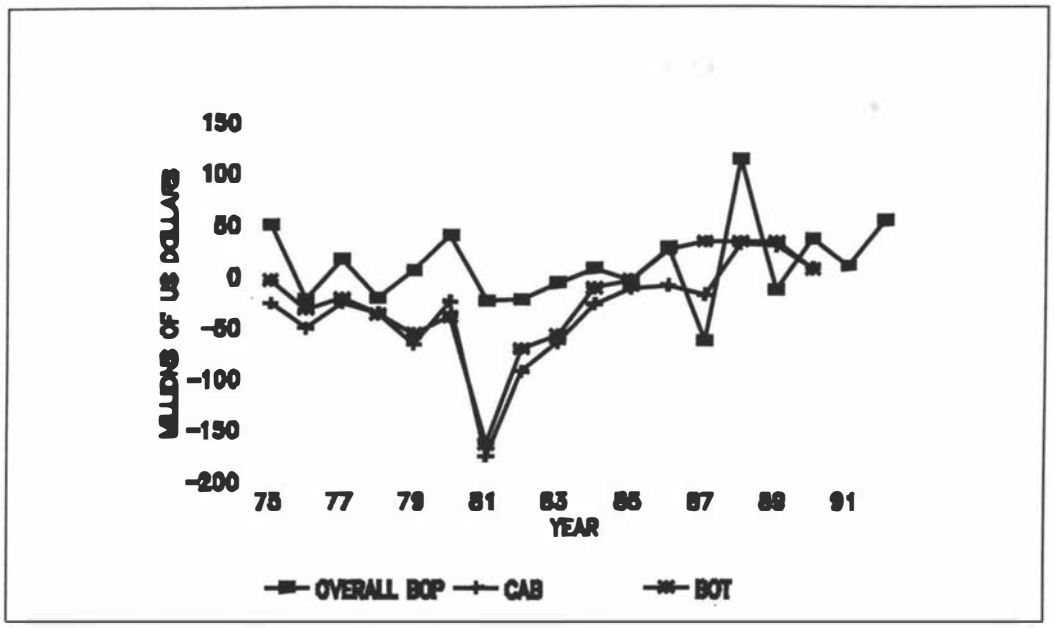

Table 1. *Fiji - Macroeconomic Indicators, 1980-92*

Year	Real GDP Growth (Percent)	Reserves (Millions of US Dollars)	Inflation (Percent)	Debt (Percent Change) *Domestic*	*External*	*Total*
1980	-7.5	166	14.57	21.13	24.20	13.28
1981	4.6	135	11.18	6.95	26.91	21.64
1982	-1.2	127	6.93	21.83	13.22	15.80
1983	-3.8	116	6.81	3.90	4.22	18.41
1984	8.2	117	5.16	13.33	5.70	10.03
1985	-4.8	131	4.47	9.28	0.01	10.57
1986	8.7	171	1.80	18.07	0.07	6.21
1987	-6.3	132	5.70	-	-	-
1988	0.8	233	11.68	-	-	-
1989	11.7	212	6.21	-	-	-
1990	5.4	261	8.23	-	-	-
1991	0.6	271	6.50	-	-	-
1992	3.1	-	4.88	-	-	-

Sources: GDP growth figures are taken from the Asian Development Bank. various issues: *Annual Report* (Manila) while the rest of the data are calculated from the International Monetary Fund. 1994: *Financial Statistics Yearbook* (Washington, D.C.).
- indicates data unavailable.

Table 2. *Fiji - Imports, 1980-1992*

Year	Percent of GDP	Value (Millions of US Dollars)	Percent Spent Out of Total by Major Category		
			Non-fuel Primary Product	*Fuel*	*Manufactures*
1980	52	598	17.53	23.07	59.40
1981	57	651	17.75	25.67	56.58
1982	50	543	18.36	28.56	53.08
1983	49	517	19.95	23.22	56.83
1984	44	485	16.54	23.39	59.44
1985	45	520	15.92	23.35	60.73
1986	39	464	16.64	12.96	71.40
1987	42	431	13.10	15.90	71.00
1988	51	548	20.60	18.70	60.70
1989	57	718	20.60	18.70	60.70
1990	64	901	20.60	18.70	60.70
1991	52	-	20.60	18.70	60.70
1992	48	-	-	-	-

Sources: International Monetary Fund. 1994: *Financial Statistics Yearbook* (Washington, D.C.) and The World Bank. 1994: *World Tables* (Washington, D.C.).
- indicates data unavailable.
Author's calculations

Table 3. *Fiji - Exports, 1980-1992*

Year	Percent of GDP	Value (Millions of US Dollars)	Export of Principal Commodities			
			Sugar (000 tons)	*Gold (kg)*	*Fish (000 tons)*	*Timber (000 tons)*
1980	49	559	441	-	-	12741
1981	43	487	407	-	-	3931
1982	43	473	411	1426	2686	9045
1983	44	460	343	1237	5079	10310
1984	43	473	379	1650	4492	15527
1985	44	515	410	1863	3089	12627
1986	42	490	324	2899	4570	12370
1987	45	464	429	2992	5907	19275
1988	54	581	409	4129	8468	36003
1989	60	751	398	4244	8287	49518
1990	64	907	394	4160	7932	37987
1991	60	860	357	2706	5851	23870
1992	-	-	365	3694	6724	28559

Sources: International Monetary Fund. 1994: *Financial Statistics Yearbook* (Washington, D.C.) and United Nations Economic and Social Commission for Asia and the Pacific. 1980 and 1994: *Statistical Yearbook* (Bangkok).
- indicates data unavailable.
Author's calculation.

Following the unfavourable weather conditions and growth performance in 1983, a significant increase in GDP growth of 8.2 percent was registered in 1984 while growth declined to -4.8 percent in 1985 (Table 1), due to the low price for sugar, which averaged 12 percent lower in 1985, and two cyclones during the first quarter of 1985 causing considerable damage to the sugar industry and tourism (ADB, 1985). Although adverse weather conditions and commodity prices had significant impact, external balances were reduced (Figure 1) by additional factors such as increase in export volume of sugar in 1985 (Table 3), large inflows of insurance monies and net private official transfers (ADB, 1985). As a result, the deficit on the current account improved and the reserve position improved while the growth of total debt increased slightly. Over the period 1980-85, another marked improvement was the declining trend in the rate of inflation since 1980, reflecting a decline in imported inflation as a share of imports to GDP dropped (Tables 1 and 2).

The growth in real GDP improved in 1986 as the economy recovered from the decline in 1985. By the beginning of 1987, the economy showed signs of steady growth with a strong BOP position and increasing foreign reserves and inflation stabilising to 2 percent (Siwatibau, 1989). During 1987, internal development rather than external factors governed economic performance. The buoyant economic conditions were abruptly changed by the military coups of 1987, leading to a reduction in foreign reserves, deterioration in business and consumer confidence, a fall in tourist numbers, interruption in flow of foreign aid, pronounced rises in the

emigration of skilled labour mainly of ethnic Indian origin, and capital flight.[5] The uncertainty about economic prospects was compounded by severe drought, which considerably reduced the projected size of the sugar crop (Appendix 2). Apart from the drought, other factors such as political protests led to burning of cane, delays in harvesting and temporary closure of mills and indirect effects of devaluation and cuts in subsidies of agricultural inputs led the industry into chaos (Ali and Overton, 1989). As a result, inflation soared to almost 12 percent in 1988; reserves declined due to capital flight, and export receipts fell (Table 1).

Following political instability, Fiji's economic policy was redirected towards promoting investment and stimulating economic activity (see section 2.4). Despite an unstable political and social environment, positive low growth of output was registered in 1988, with the BOT remaining in surplus over the 1986-88 period. Overall BOP improved, while the CAB remained in deficit (Figure 1).

In view of the events of 1987, a tax free zone scheme was established in 1988

[5] Fiji became independent from the United Kingdom in 1970. Until 1987, the Alliance Party, dominated by indigenous Fijians, won all general elections and the National Federation Party dominated by people of Indian decent constituted the opposition (see for example Lal, 1988 and Overton and Ward, 1989). In the April 1987 general election, a coalition of opposition parties defeated the ruling Alliance Party. The newly-formed government was overtaken through a military *coup* in May of 1987 and this was followed by another *coup* in September of 1987. The motive being that Fijian land rights were under threat, the ultimate justification for the first *coup*. According to Spate (1989), the issue of Fijian land rights being under threat was far from the truth. The 1970 Fijian constitution guarded Fijian land rights not with a belt of cast iron but of steel. In the 1970 constitution, Fijian land rights could not be changed without two-thirds majority in both houses of Parliament, Senate and House of Representatives, in which Indian members could not be a majority (Bain, 1989). While control has been handed back to a civilian government, a changed constitution now ensures indigenous Fijian dominance.

in order to attract foreign investment. This scheme led to exceptionally marked improvement in the reserve position (Table 1), supported by increased sugar cane production (Appendix 2) and increased incomes following major devaluation.

The tax free zone scheme was extended in 1989 allowing for the rapid development of garment, footwear and furniture manufacturing. Although the manufacturing sector output was significantly reduced following the coups of 1987 (Chandra, 1989), it increased in 1988 and 1989. Further, in the same year, the price of sugar increased by nearly 20 percent as world sugar stocks reached their lowest levels in nearly a decade causing an increase in the export share of GDP (Table 3) with surplus in CAB and BOT (World Bank, 1990). These improvements were also aided by the export of manufactured goods. The economic achievements of 1989 suggest that the full effects of reforms began to show results in 1989, particularly with, solid export growth in the garment industry and other light manufactures such as agro-based products (Chandra, 1989).

The effects from the 1988 policy reforms continued until 1990 with a growth of 5.4 percent in GDP, due mainly to competitiveness and a greater outward orientation. Another contributing factor was Fiji's privileged market access position, where many of garment exports took advantage of the duty free entry positions of the South Pacific Regional Trade and Economic Cooperation Agreement (SPARTECA) with Australia and New Zealand (1981).[6] However, Chandra (1989) shows that

[6] Robertson (1986) provides a detailed explanation of the SPARTECA arrangements.

(Table III in Chandra, 1989) garment exports were on the increase even before the tax free system was introduced. According to the World Bank (1994) double digit growth rates were recorded in manufacturing and tourism, while advances in agriculture and services were steady. In addition, the continued high prices for sugar more than offset a fall in the price of gold. This significantly contributed to the robust growth, with improvements in the reserve position and export share of GDP (Table 3), while inflation remained high at approximately 8.23 percent (Table 1 and ADB, 1990).

The reforms of 1988 led to a strong export growth in the light manufactures. The Fijian government has been focusing on export orientation of the manufacturing sector since 1970 (Chandra, 1989). The objectives of this seems to be achieved in 1989. Garment exports in particular, surged from negligible quantities in 1985 to almost 20 percent of merchandise exports in 1990 (Elek *et al.*, 1993). The robust growth performance after 1987, slowed significantly in 1991 (Table 1), a result of industrial disputes in the sugar and gold mining industries (The World Bank, 1994). ADB (1991) argues that while industry performed modestly, the service sector declined by 0.9 percent, the result of adverse performance in tourism and the wholesale and retail sectors, while the output from the mining sector declined by 39 percent due to prolonged industrial strikes and a fall in gold prices.[7] As a result, both exports and imports lost their momentum in 1991 (Tables 2 and 3). The BOT, as well as the CAB position deteriorated (Figure 1). Fiji's economic problems in 1991 were

[7] Tourist arrivals declined by 7 percent in 1991, due to the recession in major source markets, the gulf war and competition from other tourist destinations (The World Bank, 1994).

directly attributable to the events of 1987; however, as discussed earlier and argued by Cole and Hughes (1988), there were indications that the Fijian economy was not performing adequately even prior to 1987.

The economic picture in 1992 seemed more promising with an exceptional performance due to a substantial decline in imports (Table 2) and increased exports of gold, fish and timber (Table 3). Output in non-sugar manufacturing declined due to a drop in garment sector output following restrictions in the preferential access to the Australian and New Zealand markets (World Bank, 1993). It is disappointing to note that the SPARTECA agreement had little effect on the promotion of trade between the Pacific island countries and Australia and New Zealand. In fact, Cole (1993) notes, that, to a large extent, SPARTECA has been trade diverting, thus not achieving its objectives of trade promotion. Closely allied to this is the development of closer economic relations (CER) between Australia and New Zealand and the reduction in Australian import tariffs against Asian goods. This eroded the benefits of SPARTECA, and forced Fiji to compete with East Asian countries producing cheaper textile products preferred in the Australian and the New Zealand markets. In addition, the Australian demand was re-directed to New Zealand as it become more competitive in garment manufacturing following the relocation of some operations from Fiji. As a result, economic growth reached only 1.7 percent in 1993, further compounded by a severe cyclone which hit Fiji in January 1993.

In summary, the analysis shows that Fiji went through a number of crises in its macroeconomic performance during 1980-92, influenced by a number of internal

and external factors. The second oil shock, felt in 1981-82, contributed to the deterioration in economic performance in 1982 in addition to the decline in the export price of sugar. Fiji went into another crisis in 1983 as the unfavourable market conditions and cyclones had a severe effect on the its economy. While performance recovered in 1984, 1985 became a subject of another crisis resulting from low sugar prices and cyclones. The effects of this crisis continued through to 1986 leading to a much worse crisis in 1987. Two military coups, compounded by a severe drought, lowered sugar production had a devastating effect on the economy. The policy reforms of 1988 resulted in healthy performance in 1988-90. A crisis in 1989, resulting from industrial disputes and decline in tourism affected growth performance. An exceptional performance was achieved in 1992, while 1993 experienced another trough as garment output declined as a result of competition from cheap Asian exports.

2.3.2 Papua New Guinea

Background

PNG is the largest Pacific island country by land area and population with abundant natural resources: minerals (copper and gold), large oil and natural gas reserves, vast expanses of agricultural land and extensive areas of forest and maritime fisheries. Subsistence agriculture is the source of livelihood for almost 85 percent of

the population (The World Bank, 1994). Commercial agriculture accounts for one third of GDP and mineral resources for two thirds of total exports (Browne and Scott, 1989). A low adult literacy rate as well as educational attainment with social and administrative fragmentation is a result of cultural and ethnic diversity (Fairbairn *et al.*, 1993). This is also due to low levels of human capital investment (see chapter six). This country's developmental prospects are constrained by a number of factors, thoroughly reviewed in Australian International Development Assistance Bureau (1994). Briefly, these include *Wantok* (a broad unit of kin and regional affiliation which emphasises the distribution of income and wealth rather than production), a serious law and order problem, poor workforce skills, insecurity of land tenure, inadequate infrastructure, ineffective government administration and small markets.

Long-term socio-economic progress has been disappointing in spite of PNG's abundant resources. For example, economic growth during 1975-85 averaged about 2 percent per annum, somewhat less than the 2.3 percent rate of population growth (The World Bank,1994) while per capita real GDP growth from 1975-90 has been essentially stagnant (Lodewijks *et al.*, 1990). Economic performance has been impressive in some periods, for example, GDP growth averaged 4 percent annually during the first half of the 1970s (Browne and Scott, 1989). During this period agricultural expansion (diversification into palm oil) and mineral extraction absorbed the adverse impact of the first oil price increase and provided impetus to growth. Economic performance deteriorated during 1975-76 as a result of drop in demand for copper and worldwide economic decline leading to an average annual growth of 1-2 percent (Browne and Scott, 1989). PNG experienced a marked improvement in

economic activity in the second half of the 1980s as a result of the development of the mining sector and the recovery of agriculture. However, the economy went through a series of crises in the 1980s and the next section examines this in detail.

Nature of Crises in PNG, 1980-92

Like Fiji, the impact of the second oil shock is evident on PNG's economy. It recorded negative growth and high inflation in 1980 (Table 4). In 1981, PNG's two important export products, mineral concentrates (copper and gold) and coffee resulted in a fall in value by 22 percent followed by another 10 percent reduction in 1982 (Browne and Scott, 1989). In response to this, the share of exports as a proportion of GDP fell considerably in 1982 while the share of imports as a proportion of GDP increased (Tables 5 and 6). The net result was a deterioration in the BOP position (Figure 2). A huge deficit in the BOT, the highest since 1975, was also registered (Figure 2), placing serious strains on overall development since export earnings were the primary source of income and government revenue.

The poor performance in 1980-82 was followed by a positive growth of around 1 percent in 1983 (Table 4). It is argued that this was a result of increased investments particularly in the OK Tedi mining project (see for example The World Bank, 1984). However, increased investments through foreign borrowing also increased external debt substantially (Table 4). At this time, PNG continued to be the subject of fluctuating and depressed commodity prices, particularly for copper.

Despite improvement in the quantity of coffee and copper exports in 1983 (Table 5), their prices remained low. Nevertheless, this, together with a fall in imports (Table 6) to some extent, improved the BOT position. This caused the trade deficit to decline turning overall BOP into surplus.

Table 4. *PNG - Macroeconomic Indicators, 1980-92*

Year	Real GDP Growth (Percent)	Reserves (Millions US Dollars)	Inflation (Percent)	Debt (Percent Change)		
				Domestic	*External*	*Total*
1980	-2.3	423	12.03	20.07	11.25	2.6
1981	0.4	396	8.10	-14.71	15.82	17.13
1982	-0.2	453	5.54	4.09	19.05	10.95
1983	1.0	440	7.87	-10.18	27.99	23.41
1984	5.0	435	7.44	19.80	9.64	6.42
1985	4.6	443	3.73	6.73	13.21	14.37
1986	5.0	425	5.39	4.50	10.42	9.80
1987	6.0	437	3.41	22.36	8.01	7.43
1988	2.9	393	5.42	9.50	-17.36	-8.32
1989	-1.4	384	4.47	23.32	-0.73	21.79
1990	-3.7	403	6.95	9.30	19.95	20.81
1991	9.5	323	7.00	26.93	2.03	3.99
1992	8.7	-	4.30	-	-	-

Sources: GDP growth data are taken from the Asian Development Bank. various issues: *Annual Report* (Manila) while the rest of the data are calculated from the International Monetary Fund. 1994: *Financial Statistics Yearbook* (Washington, D.C.)
- indicates data unavailable

Figure 2. *Trends in BOP, CAB and BOT in PNG*

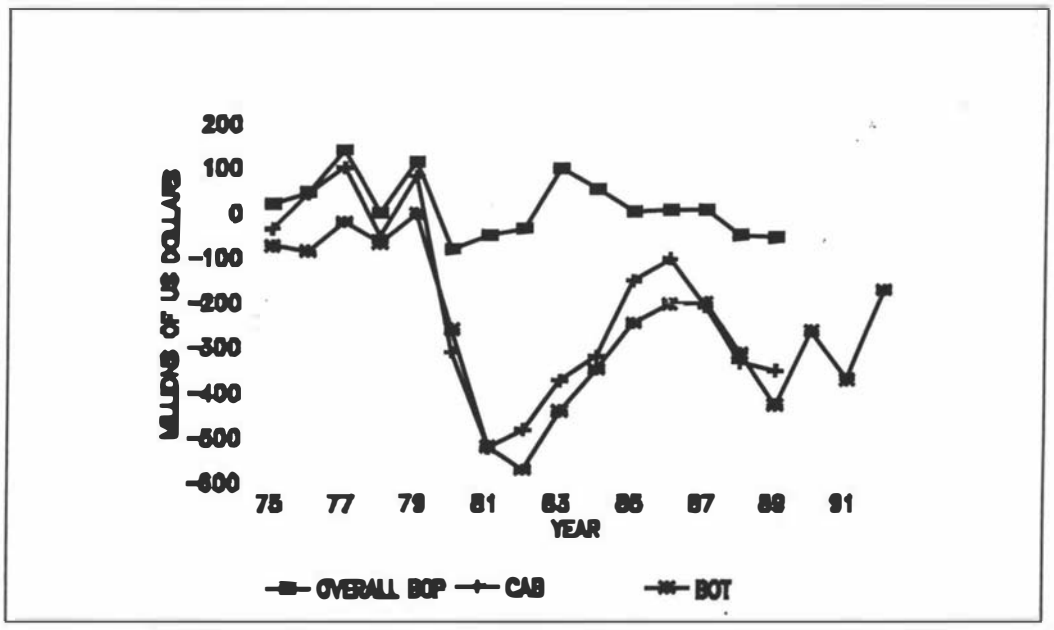

Table 5. *PNG - Exports, 1980-1992*

Year	Percent of GDP	Value (Millions of US Dollars)	Export of Principal Commodities			
			Coffee (000 tons)	*Cocoa (000 tons)*	*Copper (000 tons)*	*Timber (000 sq.m)*
1980	40	1114	51.01	28.79	494.00	661.30
1981	36	968	47.06	7.84	587.00	774.10
1982	37	884	41.10	28.59	608.81	1158.46
1983	36	930	52.52	26.34	636.05	1143.67
1984	40	1013	50.77	34.16	550.79	1340.71
1985	42	1021	40.61	30.13	559.34	1240.52
1986	44	1154	53.07	30.93	589.39	1387.34
1987	43	1357	64.84	34.39	650.64	1617.32
1988	43	1582	44.78	37.71	752.35	1487.76
1989	41	1447	84.31	46.62	645.90	1509.12
1990	41	1308	63.46	35.91	471.93	1004.66
1991	-	1601	47.20	36.61	576.04	1050.04
1992	-	1938	-	-	-	-

Sources: International Monetary Fund. 1994: *Financial Statistics Yearbook* (Washington, D.C.) and United Nations Economic and Social Commission for Asia and the Pacific. 1980 and 1994: *Statistical Yearbook* (Bangkok).
- indicates data unavailable.
Author's calculation.

Table 6. *PNG - Imports, 1980-1992*

Year	Percent of GDP	Value (Millions of US Dollars)	Percent Spent Out of Total by Major Category		
			Non-fuel Primary Products	*Fuel*	*Manufactures*
1980	50	1377	21.59	18.91	59.50
1981	55	1489	19.86	23.23	56.91
1982	61	1455	19.94	21.28	58.78
1983	53	1373	20.04	21.61	58.35
1984	44	1363	20.26	19.19	60.55
1985	55	1271	19.17	17.86	62.97
1986	39	1360	20.50	10.28	69.22
1987	42	1562	18.67	10.66	70.67
1988	51	1899	18.37	8.40	73.23
1989	57	1878	18.51	9.46	72.03
1990	64	1576	18.51	9.46	72.03
1991	52	1976	18.51	9.46	72.03
1992	48	2115	-	-	-

Sources: International Monetary Fund. 1994: *Financial Statistics Yearbook* (Washington, D.C.) and The World Bank. 1994: *The World Tables* (Washington, D.C.).
- indicates data unavailable.
Authors calculations.

A significant improvement in the growth of output (5 percent) was recorded in 1984. In the following year, however, growth was 4.6 percent due to a robust export performance in the mining sector. The 1985 mining improvement was the result of demonstrated effect of increased mining investment in 1983. In 1985, despite declining world prices for its mineral exports, higher prices for agricultural commodities, with higher levels of production, increased the value of total merchandise exports, increasing the export share of GDP, thus narrowing the BOT, the CAB and inflation (Figure 2).

The years 1986-88 witnessed a revival of growth, averaging 4.6 percent annually. Most of this improvement, however, was due to increases in the output of the enclave mineral sector (World Bank, 1989). Although impressive performance was noted in the mining sector, Cole *et al.*, (1990) argue that as an enclave activity, mining has little direct impact on important domestic economic variables such as employment and wages. However, it has a direct impact on the BOP. Exports continued to improve from 1986 till 1988 (Table 5). The BOT deficits improved until 1987, as did the CAB. It has been suggested that these improvements were also augmented by the encouragement of import substitution and export oriented industries in which the country had comparative advantage, over those with large, value added components (The World Bank, 1989).

The performance in 1989 was quite different from the three previous years. Exports plummeted as a result of the mining suspension at the Bougainville Copper mine (Table 5) causing a loss of earnings and fiscal revenues.[8] PNG's growth declined to -1.4 percent, the overall BOP ended in deficit (Figure 2), the reserve position deteriorated and domestic debt increased substantially (Table 4). The worsening economic environment was further compounded by a 10-15 percent decline in coffee, cocoa, palm oil, coconut and copra prices (The World Bank, 1990).

[8] In 1988 violence erupted at two major mining projects - OK Tedi in the Western Province and the Bougainville Copper mine in North Solomon province. In the former, mine workers were given suitable compensation. In the latter claims were lodged for billions of dollars in compensation for landowners. Both cases resulted in rioting, looting and sabotage leading to the closure of the mines and capital losses of millions of dollars. The Bougainville Copper mine remains closed whereas the OK Tedi reopened.

Since May 1989, PNG has continued to suffer from closure of the Bougainville Copper mine, having a disastrous effect on its debt position as export incomes declined. Output growth from new mining projects were insufficient to keep value-added, in the mining sector, from dropping sharply (Browne and Scott, 1989). While the outbreak of terrorism continued on Bougainville, the government failed to recognise its effects in the short-term assuming that violence would subside and the mine would re-open shortly (Cole *et al.*, 1990). This did not happen, and growth declined further in 1990 to approximately -3.7 percent. Following the implementation of financial stabilisation and structural adjustment programmes (see section 2.4), the BOT position improved slightly in 1990. However, the continuing decline in the prices of major agricultural products had an adverse impact on export earnings and BOP.

Following the disappointing economic performance in 1990, the economy recovered significantly to record an estimated growth of about 9.5 percent in 1991. There was a 25 percent expansion in industrial output, as the production of gold increased substantially (Appendix 3) from the newly commissioned Misama and Porgera mines, the latter the largest gold mine in the world outside South Africa. This caused a marked increase in total export values (Table 5) as well as easing the country's debt position. ADB (1991) argues that gold sales contributed to PNG's 30.7 percent export growth. However, imports grew at an even higher rate, about 42 percent, mainly to support mineral development, causing a large BOT deficit.

In summary, PNG also went through a number of crises in its macroeconomic

performance. The crises in 1981-82 period were mainly from the impact of the second oil shock and fall in prices of coffee, copper and gold. Following a sound performance in 1983 as a result of investment in the OK Tedi mine, another crisis struck in 1984 when export prices of coffee and cocoa plummeted. Growth performance revived over the 1985-88 period resulting in an increase in output of the mineral sector. However, the economy remained in crisis as increased output from the mineral sector did not have much effect on domestic economy variables. The period 1989-91 had the worst of all crises, as closure of the Bougainville mine led to reduced output and incomes.

2.3.3 The Solomon Islands

Background

The Solomon Islands is small by population and land area (Appendix 1) where economic activity is dominated by commercial fishing, logging, public services sector and subsistence agriculture. Its main export items are fish, timber, copra, palm oil and cocoa. The Solomon Islands has the highest rate of population growth in the region, currently exceeding 3 percent per annum (The World Bank, 1993) and does not have a tradition of overseas migration like Fiji and Western Samoa to relieve the effects of population pressures. Social and economic progress is hindered by lack of skilled

manpower, poor health and educational status, and a narrow export base.

The long-term economic performance of the Solomon Islands has been impressive only in the 1970s where real GDP averaged 7-8 percent annually (Browne and Scott, 1989). This achievement was due to high public and private investment, establishment of the palm oil industry in the second half of the 1970s and large scale rice production. Prior to its independence, Great Britain financed the administrative costs while, after independence, external grants from a wide range of donors helped finance the expansion of the public sector (Browne and Scott, 1989).

Nature of Crises in the Solomon Islands, 1980-92

After its independence in 1978, the Solomon Islands experienced robust growth, but it gradually declined in 1981 and 1982 (Table 7) due to the impact of the second oil price rise, reduced domestic production as well as low demand for its exports. Fish, one of the major export items, suffered a substantial decline while exports of timber and palm oil increased but could not offset the loss (Table 8). Overall, imports of fuel, machinery and transport vehicles were substantially reduced, turning the BOP into surplus (Figure 3). The BOT continued to remain in surplus, following a continuous trend since 1975, while inflation increased substantially, and debt and reserves deteriorated (Table 7).

Figure 3. *Trends in BOP, CAB and BOT in the Solomon Island's*

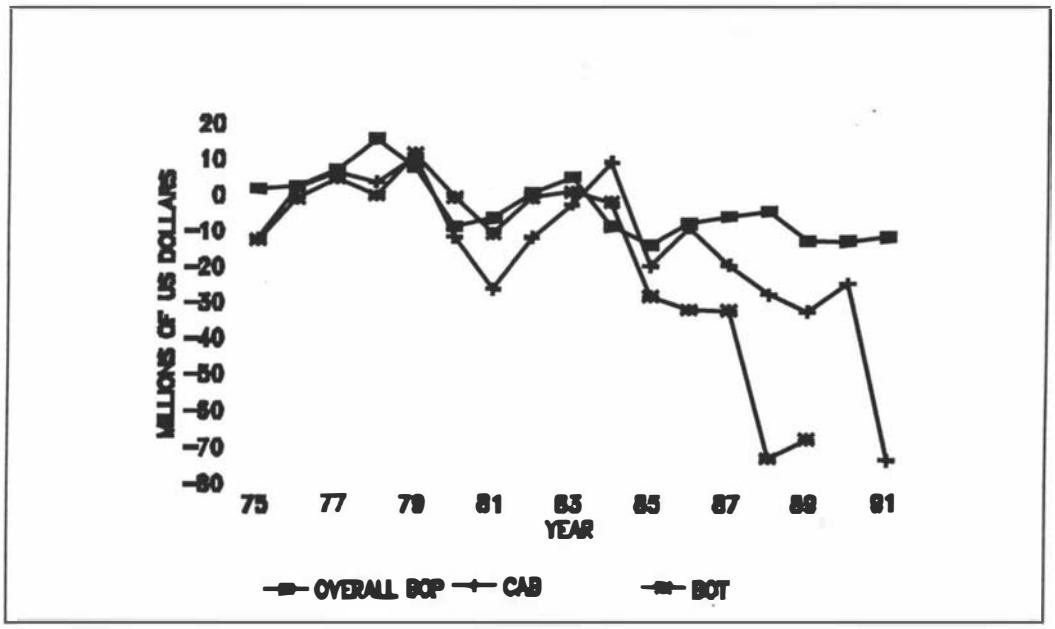

Table 7. *The Solomon Islands - Macroeconomic Indicators, 1980-92*

Year	Real GDP Growth (Percent)	Reserves (Millions of US Dollars)	Inflation (Percent)	Debt (Percent Change)		
				Domestic	*External*	*Total*
1980	8.6	30	13.07	68.12	52.83	67.31
1981	1.6	22	16.25	21.66	35.76	51.60
1982	-0.4	37	13.17	30.63	17.09	19.38
1983	6.7	47	6.18	18.22	50.66	42.29
1984	11.0	4	10.96	39.86	18.24	18.23
1985	-9.0	36	9.68	-	-	-
1986	-2.2	30	13.60	-	-	-
1987	2.1	37	10.84	-	-	-
1988	5.4	40	16.79	-	-	-
1989	7.0	26	15.00	-	-	-
1990	4.2	18	8.70	-	-	-
1991	3.9	9	15.10	-	-	-
1992	8.2	-	2.78	-	-	-

Sources: GDP growth figures for 1985-92 are taken from the Asian Development Bank. various issues: *Annual Reports* (Manila) while the rest of the data are calculated from International Monetary Fund. 1994: *Financial Statistics Yearbook* (Washington, D.C.)
- indicates data unavailable.

Table 8. *The Solomon Islands - Exports, 1980-92*

Year	Percent of GDP	Value (Millions of US Dollars)	Export of Principal Commodities			
			Fish	*Copra*	*Timber*	*Palm Oil*
1980	51	73	22303	31679	258	15655
1981	47	76	24472	31810	315	16914
1982	37	60	16472	33946	333	18566
1983	34	54	32340	25519	337	19973
1984	61	106	34281	42042	393	21460
1985	51	82	28391	43557	330	18636
1986	53	76	40831	32431	434	14490
1987	56	82	27991	27903	280	11562
1988	62	109	37179	27228	287	13591
1989	-	109	29635	35134	261	20750
1990	-	-	20639	29585	393	23701
1991	-	-	-	27000	303	21753
1992	-	-	-	-	-	-

Sources: International Monetary Fund. 1994: *Financial Statistics Yearbook* (Washington, D.C.) and United Nations Economic and Social Commission for Asia and the Pacific. 1980 and 1994: *Statistical Yearbook* (Bangkok).
- indicates data unavailable.
Author's calculation.

Table 9. *The Solomon Islands - Imports, 1980-92*

Year	Percent of GDP	Value (Millions of US Dollars)	Percent Spent Out of Total by Major Category		
			Non-fuel Primary Products	*Fuel*	*Manufactures*
1980	52	58	20.0	16.1	63.9
1981	54	74	14.7	23.0	62.3
1982	37	87	19.4	25.1	55.5
1983	34	61	16.5	25.3	58.2
1984	62	54	21.1	22.7	55.3
1985	69	109	20.9	20.3	58.8
1986	75	111	21.4	18.9	59.7
1987	78	109	22.2	14.7	63.1
1988	77	145	22.2	14.7	63.1
1989	76	183	-	-	-
1990	78	177	-	-	-
1991	-	-	-	-	-
1992	-	-	-	-	-

Sources: International Monetary Fund. 1994: *Financial Statistics Yearbook* (Washington, D.C.) and The World Bank. 1994: *World Tables* (Washington, D.C.).
- indicates data unavailable.
Author's calculations.

A strong recovery in 1983-84 was followed by slower economic performance in 1985. The rise in the exports and the import share of GDP in 1983-84 did not change the BOT position as it remained in surplus. The poor performance in 1985 was attributable to an unfavourable demand for exports with falls in palm oil and kernel earnings.

A significant deterioration in economic performance in 1986 was due to extensive devastation caused by cyclone *Namu* in May, with a lasting effect on the economy. The prospect of any economic recovery in 1986 was not promising, as a further deterioration in growth of output occurred. Cyclone *Namu* also contributed to a decline in exports of major commodities (Table 8) and a consequent fall in export output and earnings. The country relied heavily on imported products, raising the import share of GDP and inflation, thereby deteriorating BOP and BOT position (Figure 3).

An aftermath of the 1986 cyclone, was the planned termination of large scale logging in New Georgia, and the cessation of rice production in Guadalcanal Plains (World Bank, 1987). The effects continued through to 1987. Following the effects of cyclone *Namu*, the Solomon Islands made efforts towards creating a stable economic environment, while at the same time accelerating the structural transformation of its economy. This caused a slight improvement in the overall BOP position.

The government also adopted various tax and monetary incentives to promote foreign investment and to encourage the private sector (see section 2.4). However,

the trend for 1988 remained unchanged, with rises in exports as well as the import share of GDP (Table 8 and 9). Prices of fish, timber and palm oil remained high (ADB, 1988), enabling a strong growth in production (Appendix 4) as well as exports, thus resulting in a positive growth of 5.4 percent. Exports remained robust as shipments of copra, timber and fish products increased (Table 8). The BOP improved slightly, while the CAB and overall BOP remained in deficits (Figure 3).

The 1988 economic recovery from the 1986 cyclone damage did carry through to 1989. However, the terms of trade have deteriorated since 1988 and external aid was also declined (The World Bank, 1994). By 1990, strong growth of 4.2 percent was recorded (Table 7). This impressive result is partly due to an expansionary fiscal policy that contributed to continued pressures on domestic prices and the external position (see section 2.4).

Economic growth narrowed from 4.2 percent in 1990 to 3.9 percent in 1991, a result of slow growth in the industrial and service sectors (ADB, 1991). In the following year, however, performance was aided by a sharp improvement in the overall terms of trade, led by rising prices for timber, and there was a growth of 8.2 percent.

Exports of traditional commodities fell, but imports increased. Current account deficits fell due to the soaring volume of timber exports in 1992 (World Bank, 1994). Despite a continuation of favourable trends in the terms of trade, BOP worsened due to soaring imports in 1993.

In summary, the analysis shows that the Solomon Islands went through crises in its macroeconomic performance. A number of internal and external factors contributed to the crises. During 1981-82, the economy went through the impacts of oil shock together with decline in domestic production of fish and low overall export demand for its products. Performance was poor during 1984-87 due to unfavourable demand for its exports, reduction in export earnings and the impacts of a severe cyclone. Another crisis took place in 1987 as logging was terminated. Like the Solomon Islands, Western Samoa, also went through crises over the 1980-92 period.

2.3.4 Western Samoa

Background

Unlike Fiji, PNG and the Solomon Islands, people in Western Samoa are of Polynesian origin. It has a low population growth rate (largely due to high out migration) but better health and educational standards compared to the Solomon Islands and PNG. Emigration to New Zealand, Australia and the United States is common as a result of unemployment and slow growth of output. Agriculture is the mainstay of the economy, accounting for almost 50 percent of GDP and the bulk of exports. The largest source of receipts is from tourism and foreign aid while remittances from Western Samoans living abroad (60 percent of Western Samoans live abroad) finance consumption by relatives at home (Hayes, 1991). Bertram and Watters (1986) argue that aid inflows in small economies are viewed as incomes

rather than investment while remittances in cash provide major source of disposable income. Although their MIRAB argument emerged from the study of five very small South Pacific island countries (Cook Islands, Niue, Tokelau, Tuvalu and Kiribati) it is applicable to a large degree to Western Samoa. Here aid and remittances enter in exactly the same manner as in the five very small countries. Western Samoa has to rely on agriculture (copra, cocoa, vanilla and vegetables) as the major domestic source of employment and income.

The Western Samoan economy has not shown an impressive performance since its independence. This is because Western Samoa has been affected by MIRAB features among other factors discussed in section 2.2.[9] According to Shankman's (1976) analysis of the Western Samoan economy, it seems that even some of the MIRAB features (increased migration to New Zealand and inflow of government budgetary support and diversion of resources from local export production) were notable since at least the 1950s. Expanded investment and growth has been constrained by shortages of foreign exchange. Good economic performance in the early 1970s was due to expansionary expenditure policies (Browne and Scott, 1989). It was also compounded by the first round of oil price increases and stagnant international recessions. A series of economic adjustment programmes supported by the IMF were adopted in the second half of the 1970s but generally fell short of their

[9] MIRAB is the combined effect of migration (Mi), remittances (R), aid (A) and bureaucracy (B) on the five small South Pacific island economies: the Cook Islands, Niue, Tokelau, Tuvalu and Kiribati. This MIRAB model has been pioneered by Bertram and Watters (1986). The main prediction of the MIRAB model is summarised in Bertram (1986): the model predicts that any natural increase in total population will tend to be exported so long as outlets are open.

objectives (Browne and Scott, 1989). Economic performance in the 1980s has not been any better than the years following independence.

Nature of Crises in Western Samoa, 1980-92

For Western Samoa, BOP difficulties emerged during the second half of the 1970s caused by depressed exports and increases in prices of imports, and compounded by the first round of oil price increases (Figure 4). The depreciation of the currency also contributed to rising domestic prices for imports, not adequately supported by demand management policies. All these events continued to have an effect on the overall performance of the Western Samoan economy in the 1980s.

The country's deteriorating economic performance in the early 1980s, resulted in negative real growth and very high rates of inflation 1980-81 (Table 10), mainly due to the second round of oil price increases and the profound impact of the world economic recession. Adverse weather and a fall in copra prices also compounded this effect.

Figure 4. *Trends in Western Samoa's BOP, CAB and BOT*

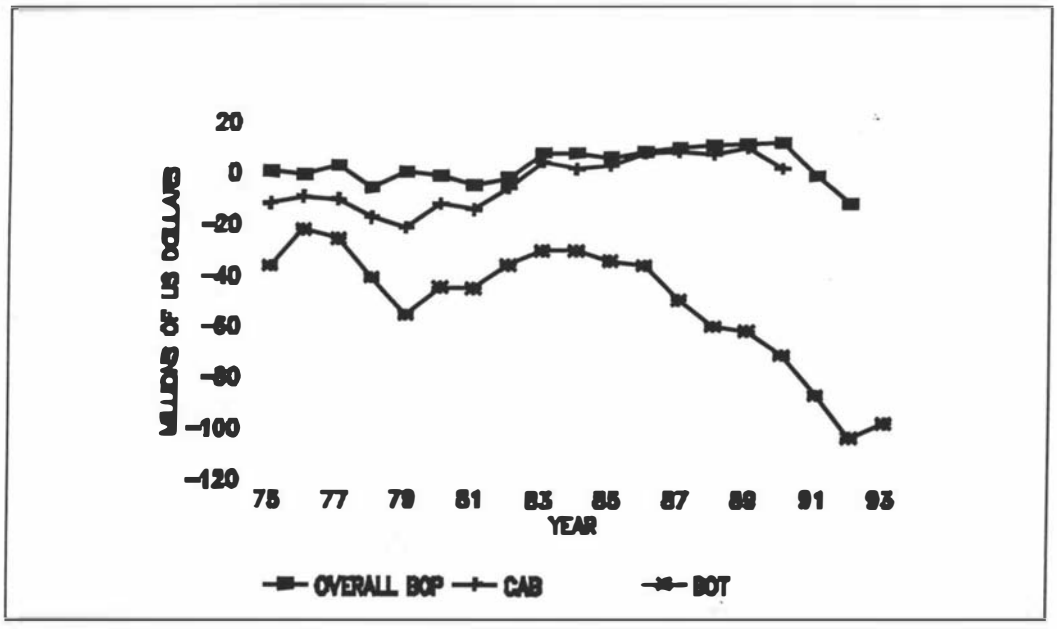

Table 10. *Western Samoa - Macroeconomic Indicators, 1980-92*

Year	Real GDP Growth (Percent)	Reserves (Millions US Dollars)	Inflation (Percent)	Debt (Percent Change) *Domestic*	*External*	*Total*
1980	-13.9	3	32.94	1.93	15.93	16.15
1981	-12.3	3	20.60	26.90	42.57	26.33
1982	1.2	4	18.32	6.26	9.31	8.10
1983	1.6	7	16.53	11.96	6.93	9.01
1984	4.9	11	11.85	9.73	1.32	4.98
1985	2.5	14	8.99	-13.86	-15.67	-14.89
1986	0.5	24	5.74	-4.70	-6.67	-5.79
1987	0.8	37	4.60	5.57	-1.48	1.78
1988	-0.2	49	8.52	-	-	-
1989	1.3	55	6.50	-	-	-
1990	-4.0	69	15.21	-	-	-
1991	-1.6	68	4.00	-	-	-
1992	-4.2	-	2.88	-	-	-

Sources: GDP growth data for 1985-92 are taken from the Asian Development Bank. various issues: *Annual Report* (Manila) while the rest of the data are calculated from the International Monetary Fund. 1994: *Financial Statistics Yearbook* (Washington, D.C.) and Browne and Scott (1989).
- indicates data unavailable.

Table 11. *Western Samoa - Imports, 1980-1992*

Year	Percent of GDP	Value (Millions of US Dollars)	Percent Spent Out of Total by Major Category		
			Non-fuel Primary Products	*Fuel*	*Manufactures*
1980	56	62	24.6	16.7	58.7
1981	54	56	21.4	18.1	60.5
1982	46	50	27.7	15.3	57.0
1983	49	49	24.6	18.4	57.0
1984	51	51	23.5	17.6	58.9
1985	60	51	23.5	17.6	58.9
1986	52	47	23.5	17.3	58.9
1987	62	62	23.5	17.6	58.9
1988	63	76	23.5	17.6	58.9
1989	71	75	23.5	17.6	58.9
1990	73	81	-	-	-
1991	-	94	-	-	-
1992	-	110	-	-	-

Sources: International Monetary Fund. 1994: *Financial Statistics Yearbook* (Washington, D.C.) and The World Bank. 1994: *World Tables* (Washington, D.C.).

Table 12. *Western Samoa - Exports, 1980-92*

Year	Percent of GDP	Value (Millions of US Dollars)	Export of Principal Commodities		
			Coconuts (000 tons)	*Copra (000 tons)*	*Bananas (000 tons)*
1980	15	17	220	19	-
1981	10	11	200	19	-
1982	12	14	213	28	22
1983	18	18	177	23	22
1984	20	20	151	19	22
1985	19	16	178	25	22
1986	12	11	191	25	23
1987	12	12	170	18	23
1988	13	15	160	19	23
1989	08	13	159	20	24
1990	-	9	138	17	22
1991	-	6	95	10	23
1992	-	6	95	10	18

Source: International Monetary Fund. 1994: *Financial Statistics Yearbook* (Washington, D.C.).
Author's Calculation.

A remarkable change took place in the BOP position after 1982, when lack of foreign exchange severely reduced the availability of imports, thus improving the current account, and the overall BOP moved into surplus (Figure 4). By 1985-86, however, growth rates had again slowed as a result of sharp decline in the world price for coconut products, then Western Samoa's main export commodity.

During most of the 1980's, the CAB and overall BOP remained in surplus while the BOT position deteriorated (Figure 4). This improvement in CAB and BOP was due to a successful adjustment programme put in place in 1983-85 (see section 2.4). A number of events also accounted for the improvements in CAB and BOP: recovery in international commodity prices, worker remittances, improvement in world economy and the depreciation of the *Tala*, and foreign aid. The external current account continued to register surpluses in the late 1980s. Underlying this improvement was the result of lower petroleum prices, increased domestic production and restrained domestic demand.

In 1987, Western Samoa experienced a lower growth of 0.8 percent due to a decline in the production of tree crops and unfavourable trends in the export prices for major commodities, lowering export earnings (Table 12). This trend continued through to 1988 when growth of output declined further due to declining agricultural production (Appendix 5), resulting from severe drought and lower prices for major export commodities. The previous year's effect was further compounded in 1990 when the country suffered from cyclones which damaged infrastructure and sharply reduced coconut yields and copra production.

The CAB and the overall BOP for most of the 1970s and early 1980s is characterised by large deficits (Figure 4). Western Samoan exports fluctuated in a range of 10-15 percent of GDP, with coconut products representing half of the total, cocoa, taro and a range of agro-based manufactured items accounting for the other half (Table 12). The share of imports ranged within the 60-70 percent of GDP (Table 11). This trend has followed over the 1975-93 period giving a persistent BOT deficit (Figure 4).

Like Fiji, PNG and the Solomon Islands, Western Samoa also went through a number of crises during the 1980-92 period, a result of the second oil shock, recession in the world economy, adverse weather conditions and declining production of agricultural commodities.

This investigation of the nature of crises in the four South Pacific island countries showed a number of common factors responsible for the deterioration in macroeconomic performance. Some of these include the second oil price rise, natural disasters, lower prices of export items and reduced demand for domestic export products. While the economies went through crises in their macroeconomic performance, the governments of each country also adopted a number of adjustment measures supported by the IMF. Therefore, the next section outlines the types of adjustment measures adopted in each of the four country's during the 1980-92 period.

2.4 IMF INVOLVEMENT AND ECONOMIC POLICIES IN THE SOUTH PACIFIC

IMF's involvement with the island countries of the South Pacific dates from May 1971 when Fiji became a member, then Western Samoa, PNG and the Solomon Islands in the years that followed (Smith, 1987). IMF provided large amounts of technical assistance and the services of experts in fiscal and central banking areas, and has been closely involved with economic adjustment efforts supported by financial resources under a number of its financing facilities (Appendix 6). Therefore, this section reviews the nature of IMF involvement in economic policy measures implemented by Fiji, PNG, the Solomon Islands and Western Samoa. Standard policy measures supported by the IMF in developing countries are, however, reviewed in detail in chapter four. It is noted that full details of adjustment policies supported by the IMF could not be obtained since the material is classified as confidential by the IMF.

Even though the countries studied here were not recipients of either Structural Adjustment loans or Enhanced Structural Adjustment loans from the IMF (see Appendix 6 and 8), I argue that the economic policies during the period studied were profoundly influenced by the IMF. This would appear strange because IMF conditionalities, bearing the hallmarks of adjustment programmes characteristics of IMF, are officially associated with only SAF loans and upper tranche loans. However, several features of the countries peculiar to their geopolitical situation led to the involvement of IMF in policy making in these countries in the eighties to a degree

disproportionate with their loan status. This is the reason for identifying the economic policy of this period as IMF adjustment policy throughout this study.

2.4.1. The Geo-Political Argument

The geo-political argument is centred around three specific issues: programme design, physical nature of small island countries and IMF conditionality.

Programme Design

According to Burton and Gilman (1991), both IMF staff, the design of programmes begins with the member countries notifying the IMF of their choice of macroeconomic adjustment. Following this, the IMF then conducts an analysis of a country's economic situation and policies and advises the government of the host country on policies to be adopted. Therefore, the economic adjustment programmes are, in the first place, formulated by the governments of the adjusting country, so is its implementation, but in between IMF is the central player and justifies its involvement on the grounds that it is the provider of loan under one of its financing facilities supporting the adjustment policies. Given this, IMF itself regards its programmes as "Fund Supported Programmes" implying that the programmes are the choice of the country which signs them (Killick *et al.* 1992). In this sense, "IMF adjustment programmes" are not IMF's but are created by the governments of

countries seeking economic adjustment.

In the Pacific island countries, the role of the IMF is more overt. The economic adjustment policies have been inspired by the IMF. This is because Pacific island countries, unlike large developing economies elsewhere, lack experts in fiscal and central banking areas (Smith, 1987, p.238) and IMF has been a major provider of services in these areas. Smith (1987, p.238) clearly points out that the IMF not only provided experts in fiscal and central banking areas but the IMF-financed experts were based in all of the countries studied and in some countries there were several experts. This led to a situation where economic adjustments were largely inspired and dominated by the IMF, as its staff were devoted to the island's economic adjustment.

Physical Nature of Small Island Countries

Unlike large developing countries elsewhere, who are frequent and large users of IMF's resources, the Pacific island countries have not been major users, specifically in regard to making large amounts of purchases under upper credit tranche facilities or the enhanced structural adjustment facility. This is because Pacific island countries are vastly different in their physical, economic and political structures than the large developing countries such as those in India, Latin America or Africa, that have made purchases under upper credit tranche and enhanced structural adjustment facilities.

Smallness is one feature characterising these economies, resulting in economic problems and unique challenges, as discussed earlier in this chapter. As a result, the magnitude of these problems creates severe disruptions. Therefore, the adoption of policies geared to the changing economic circumstances associated with cyclical forces has been the central task of economic adjustment in the Pacific island, so as to control adverse impact of disturbances. According to Smith (1987, p.244), the essential tools of adjustment in the Pacific islands have been same as those prescribed in other countries: fiscal policy, monetary policy, exchange rate policies and wages, the essential core policies around which comprehensive IMF programmes are built (see chapter four). Smith (1987, p. 244) also notes that these policies were not only sufficient for the Pacific islands, but other policies, such as the development of export diversification, financial market development and deepening, taxation and trade policies, were unique to each island but common in principle and vital in all. Although these are standard policy measures, they were supported by credits which would largely require limited adjustments in larger countries. Therefore, the small amounts of IMF resources reflects the smallness of these countries. Thus, the physical size as well as the size of the total output, are important criteria, among others, that allow the IMF to determine the level of credit for a particular country. Smith (1987, p. 238) states that the minimal use of IMF funds in no way implies that IMF has not been closely involved with the economic adjustment efforts in the Pacific island region.

IMF Conditionality

Duncan (1994) states experience has shown that IMF or the World Bank conditionality is a weak form of international obligation. Domestic pressure groups, supported by the international pressure groups, have found it fairly easy to reverse reforms undertaken. The IMF's official position is that it seeks to apply uniformity of treatment in its country programmes, which it has defined to mean that, for any given degree of need, the effect of economic adjustment sought in programmes be broadly equivalent among members (Killick *et al.* 1992). These authors argue that in practice IMF is sometimes prevented from applying this principle and provides softness or favouritism in negotiating programmes. They further note that in its more extreme forms, it amounts to an unconditional provision of finance for governments with records for macroeconomic mismanagement.

This line of approach has been extended to the Pacific island member countries. It is discussed below, that while IMF provided finance to a number of countries, the actual economic adjustment policies complied with those largely supported by the stand-by, upper credit tranche or the enhanced extended fund facility. Thus, IMF has largely taken a soft approach in the Pacific islands, where it was not too rigid and not too uniform in its approach to policy conditionality. Given the physical, demographic and social nature of the Pacific islands, policies here can be regarded as an exception, where IMF decisions about extending credit have been judgemental rather than somewhat more mechanistic approach based on observance of quantified performance criteria as it does with large countries. The IMF has also

taken a relatively soft approach in programme negotiations and execution in small countries like the Dominican Republic and Jamaica, as well as large countries like Philippines, Sudan and Mexico (Killick *et al.* 1992). The basic thrust of what the IMF seeks to achieve in the area of economic management is less contentious today than it was in the 1970s, hence the soft approach (Killick *et al*, 1992). Thus, with regard to the Pacific island countries, IMF has been flexible in terms of its loan and policy conditionality.

2.4.2. Some Existing Studies

In fact the influence and importance of IMF in policy making in these countries in spite of smaller loans has been noted fairly widely. Quite a few authors have included the Pacific islands in their study of IMF policy and their impacts. For example, a study by Khan and Knight (1982), both IMF staff, focuses on policy instruments and their effects on important macroeconomic variables such as output, prices and balance of payments in a cross-section of thirty-seven developing countries during 1973-80. In their study, Fiji and Western Samoa are the two Pacific island countries out of the sample of thirty-seven countries. Similarly, Khan (1988), an IMF staff member, provides cross-country empirical evidence of macroeconomic effects of IMF supported programmes for sixty-seven developing countries during 1973-86. The Pacific island country among the sample is Western Samoa. Doroodian (1993) examines the effects of IMF stabilisation programmes on economic growth, inflation rates and current account balance for a cross-section of forty-three countries during

1977-1983 including Fiji and PNG. Lodewijks *et al.* (1991) provides critical reflections on a number of aspects of IMF inspired policies in PNG in the 1980s. A very recent study is by Murinde and Rarawa (1996) who model the potency of stabilisation policies supported by the IMF in the Solomon Islands during 1978-1992.

In the present section we detail these policies as they were adopted in different countries and try to discuss the situation and context that led to each significant policy measure.

Fiji

Initially, Fiji was protected from the full impact of the second round of oil price increases by a dramatic rise in sugar prices triggered by a temporary shortage of world supplies (Browne and Scott, 1989). However, IMF adjustment policies were put in place during 1981-82, by the government, included restrictive demand management policies and expansionary financial policies. The government's adjustment programmes during 1981-82 were supported by IMF's compensatory financing facility amounting to 27.0 million SDRs (IMF Annual Report, 1982 and 1983).[10]

[10] SDR stands for special drawing rights, a unit of account for the IMF. It is determined daily by the IMF on the basis of a basket of currencies with each currency assigned a weight in the determination of that value. In the derivation of SDR value, the currencies of the basket are valued at their exchange rates for the U.S. dollar and the U.S. dollar equivalent for each of the currencies are summed to yield the rate in terms of the U.S. dollar.

During 1983-84, poor economic performance led to an implementation of a contractionary fiscal policy reflecting a low government budget deficit due to cutbacks in capital spending (ADB, 1984). IMF-inspired contractionary monetary policy was implemented in 1984 to prevent resurgence of imports.

Financial restraints of 1984 continued over 1985-86. The government, in the spirit of IMF measures, implemented a national wage freeze at the end of 1985 to reduce cost-price distortions and encourage private savings and investment in order to promote external equilibrium (Browne and Scott, 1989). IMF, at the same time, provided a compensatory financing facility worth 4.75 million SDR's (IMF Annual Report, 1986). In 1986, changes in productivity and terms of trade led to changes in setting wage guidelines, resulting in a restrictive recommendation for wage increases (Browne and Scott, 1989). IMF adjustments included the adoption of a flexible exchange rate system, and the exchange rate was gradually depreciated by 15 percent (Browne and Scott, 1989), all this supported by IMF's compensatory financing facility of 4.80 million SDR's (IMF Annual Report, 1987). With the economy recovering strongly in 1986, fiscal and monetary policies were slightly eased and direct tax concessions were implemented reducing the budget receipts to 24 percent of GDP (Browne and Scott, 1989).

The buoyant economic conditions were abruptly changed by the military coups of 1987, and a severe drought. As a result, the IMF recommended macroeconomic adjustments. IMF's fiscal measures included cuts in discretionary spending consisting of civil service wage and salary reductions of 15 percent and 25 percent in the

military, curtailment of undisbursed transfers and grants to public enterprises, and deferment of lower priority investment projects (Browne and Scott, 1989). Adjustments also included a change in monetary policies: abolishing the interest rate ceilings on bank lending, raised borrowing rates for commercial banks and penalties for using bank credit were stiffened, export credit facilities from foreign banks were withdrawn and direct credit controls were introduced as a precautionary measure (Browne and Scott, 1989). The main defence against foreign exchange outflows was the tightening of credit policies. However, additional measures were needed. Thus, the Fijian dollar was devalued by 18 percent in June 1987 and by a further 15 percent in October 1987, which proved effective in discouraging outflows through both current and capital transactions (Browne and Scott, 1989). Foreign exchange controls were also tightened on emigration transfers, remittances, overseas travel allowances, gifts, overseas investment by residents, and prepayment of foreign borrowing.

In 1989 the government embarked on a vigorous programme to stimulate the economy through deregulation: elimination of import prohibitions on non-agricultural imports, all duties in excess of 50 percent were lowered to 50 percent; a limit of 6 percent was imposed on wage and salary increases (Dorrance *et al.*, 1989).

PNG

The severe impact of oil price increases and the global recession on PNG during 1981-82 resulted in the implementation of a combination of fiscal and

monetary policy inspired by the IMF (Browne and Scott, 1989). As the BOP problem became increasingly severe, fiscal policy was tightened to contain imports, and expenditure cuts were made in the 1982 budget as export revenues declined (ADB, 1982). A tightening of monetary conditions occurred by raising interest rates to levels that were high by international standards. Flexibility of the monetary policy was also improved by the introduction of an auction system of treasury bills (ADB, 1982). In response to the second oil shock, IMF approved an oil facility worth 5.0 million SDR's to the government of PNG (IMF Annual Report, 1981). However, the combination of fiscal and monetary adjustments were supported by IMF's compensatory financing facility (IMF Annual Report, 1982).

During 1983-84, fiscal policy was employed as the chief instrument of external adjustment. A deteriorating current account in March 1983 led the IMF to recommend a 10 percent depreciation of the *Kina* in line with the Australian dollar (Browne and Scott, 1989). The government also streamlined administrative functions and retrenched 6 percent of the public sector workforce. The programme for the 1983-84 period were supported by IMF's compensatory financing facility of 34.90 million SDRs (IMF Annual Report, 1985). In 1985, additional expenditure cuts were implemented to limit the overall deficit to 2 percent of GDP. The result was monetary conditions easing abruptly from mid-1983 as the BOP improved, but private sector demand was slow to respond to the upturn in the economy. In view of the adjustments in the currency, the Reserve Bank of PNG controlled virtually all bank lending and deposit rates in the late 1983, and maintained an accommodative monetary stance throughout 1984, guided by a primary desire to support expansion

(Browne and Scott, 1989).

Due to a sharp rise in credit in 1985, bank liquidity was tightened by withdrawing access to discount facilities. An IMF adjustment measure depreciated the *Kina* by a further 5 percent against a basket of currencies (Browne and Scott, 1989). Following this, restrictive demand management policies were implemented in 1986 and 1987 supported by IMF's compensatory financing facility of 10.10 million SDR's (IMF Annual Report, 1987). This held external current deficits to 5 percent of GDP in 1986, and 7 percent in 1987 (Browne and Scott, 1989).

In May 1989 the closure of Bougainville Copper Mine led to a substantial reduction in economic activity. This brought to the fore the need to address not only immediate dis-equilibria, but also the medium-term requirements for diversifying the economy and promoting growth of the non-mining sector. Government's economic and financial programmes had two interrelated objectives: to establish financial conditions to avoid a sharp deterioration in external position and keep price pressures in check; and to promote structural adjustment measures leading to sustainable growth (IMF Press Release, 1990). The programmes included strong fiscal and monetary measures designed to narrow the imbalances in the economy, as well as measures to improve external competitiveness and assist the private sector to expand non-mining economic activity (IMF Press Release, 1990). This adjustment was supported by IMF's stand-by arrangement of 69.20 million SDR's and a compensatory financing facility of 42.84 million SDR's (IMF Press Release, 1990). The structural adjustment measures of the programme focused on strengthening public sector investment,

particularly in economic infrastructure, in the agriculture, health and education sectors, and rationalising the tax structure (IMF Press Release).

The government's adjustment measures in 1990 included the depreciation of the *Kina* by 10 percent and a severe limitation on increases in bank credit (Cole *et al.*, 1990). The monetary policy was eased (credit restriction was reduced) in mid-1990 to encourage private investment. This adjustment programme was supported by the World Bank.

During the first quarter of 1991, the fiscal position deteriorated because of a substantial shortfall in revenue and grants and new expenditure commitments to improve law and order (The World Bank, 1994). At the same time, world prices for agricultural exports remained depressed and the level of external reserves declined. The main objectives were to strengthen the external reserve position, hold down inflation and sustain an economic recovery, particularly in the non-mining private sector.

The authorities aimed to reduce the overall budget deficit to 2.5 percent of GDP in 1991 and 1.5 percent in 1992 by curtailing non-priority expenditures and introducing additional revenue measures (IMF Press Release). Monetary and credit policies were made consistent with inflation and BOP objectives, while wage increases were restrained through government consultation with minimum wages board and national tripartite council. Structural policies under the IMF inspired programme focused on improving the operations of the public sector, particularly

reforms in the civil service, the agricultural commodity stabilisation funds and privatisation (IMF Press Release, 1991). The programme also included measures to address the adverse impact of the adjustment effort on the most vulnerable segments of the population by implementing settlements and retraining programmes, projects to improve housing, health, small industrial development, roads and water supplies, and to continue with actions that would contain environmental degradation (IMF Press Release, 1992).

The Solomon Islands

In 1980 the economy of the Solomon Islands suffered a setback as exports declined and the terms of trade deteriorated. The government's economic programme was designed to promote the return to high economic growth. In addition to measures aimed at increasing the volume of exports, the governments adjustment policies included measures to increase the mobilisation of domestic resources and to moderate the growth of imports (Browne and Scott, 1989).

Following pronounced growth in domestic credit, reserve requirements were imposed by the government on commercial banks for the first time in 1981 at 5 percent of the deposit liabilities (Browne and Scott, 1989). Additional IMF supported measures were a 20 percent levy in import duties of non-oil products, wages and salaries restraint to contain current expenditure, the use of external commercial borrowing to expand investment, and a currency depreciation of 6 percent (Browne

and Scott, 1989). This adjustment programme was supported by IMF's stand-by arrangement of 1.6 million SDR's (IMF Press Release, 1981).

Due to the unfavourable external developments in 1982, the government adjusted its policies with the objectives of expanding exports, restraining less essential imports, and increasing domestic resource mobilisation (IMF Press Release, 1983). In August 1982, the IMF policy measures included a 10 percent depreciation of the Solomon Islands dollar and substantial increases in import duties and improvements in tax collection (IMF Press Release, 1983). These adjustments were supported by IMF's compensatory financing facility of 1.60 million SDR's (IMF Annual Report, 1983).

The government's economic and financial programme for 1983-84 sought to promote a recovery in economic activity, particularly through investment in export industries in order to strengthen the BOP over the medium term. The Solomon Islands government redirected policies in early 1983 in order to promote economic recovery through private investment in the export sector (ADB, 1983; Browne and Scott, 1989). It also increased public expenditure on infrastructure to promote private investment, introducing measures for public resource mobilisation and current expenditure restraint and raised bank deposits rates to encourage private savings (Browne and Scott, 1989). The government also introduced a liquid assets requirement of 15 percent of deposit liabilities to replace the 5 percent reserve requirement. The value of the Solomon Islands dollar was further depreciated on a trade-weighted basis to help shift resources toward the traded goods sector (Browne

and Scott, 1989).

The depreciation of the Solomon Island dollar was discontinued due to the marked recovery in exports in 1984 (Browne and Scott, 1989). Monetary policy continued to be guided by the aim of avoiding constraints on real growth. With acceleration in inflation, the government adopted a more restrictive monetary stance from late 1984. In order to tighten commercial bank liquidity, the copra board was required to transfer resources from commercial banks to the central bank and a rise in liquid assets ratio to 25 percent of deposit liabilities was announced (IMF Press Release, 1983). The economic and financial programmes for the 1983-84 period were supported by IMF's stand-by arrangement of 2.4 million SDR's (IMF Press Release, 1983).

Following the downturn in export prices in 1984, exchange rate flexibility was reintroduced. In real effective terms, the Solomon Islands dollar depreciated by about 30 percent between mid-1985 and the end of 1987 (Browne and Scott, 1989). This depreciation of the Solomon Island dollar helped to contain the deterioration in the external position and mitigate the impact on export profitability of low commodity prices.

The main aim of monetary policy was to reduce the pressure on domestic prices and underlying BOP, while providing adequate credit for development. The growth of domestic credit was high in 1985 because of the government financing needs, and private sector demand, while in 1986 domestic credit growth was

restricted due to the availability of external finance (Browne and Scott, 1989).

Nevertheless, fiscal imbalances increased during 1986 as a result of a severe cyclone. A preliminary assessment of the effects of the 1986 cyclone indicated that the total damage was in the order of 10 percent of GDP (IMF Press Release, 1986). In response to this, IMF approved an emergency financing facility worth 1.25 million SDR's to assist the country meet its foreign exchange needs (IMF Press Release, 1986). A measure taken by the Solomon Island government was providing relief to the fishing industry in the form of lower export taxes and reduced rates of import duties on imported fuels and other materials (Browne and Scott, 1989).

In 1987, in view of accelerated inflation, the liquidity ratio was increased to 27.5 percent of deposit liabilities and the central bank closed the facility through which banks had automatic access to central bank funding (Browne and Scott, 1989). Tighter monetary conditions were designed to help strengthen the BOP, when external grants declined from the usually high levels of 1986-87.

Adjustment measures in 1989, initiated by the government, included tight monetary policy in response to rising inflation and expanding government expenditures, while the dollar was depreciated. In the first half of 1990, the Solomon Island dollar depreciated against the pound sterling, Australian and US dollars (Cole *et al.*, 1990).

Western Samoa

During 1980-82, Western Samoa experienced a sizable fall in real income together with high rates of inflation and severe external financing problems, a result of the second oil shock. The adjustment of domestic policies, notably fiscal and exchange rates, to the sharp deterioration in the external environment was limited even in this period (IMF Press Release, 1983). However, in response to the deteriorating external environment, the IMF granted a first credit tranche and compensatory financing facility (IMF Annual Report, 1982). As such, the *tala* was held largely unchanged against the New Zealand dollar (Browne and Scott, 1989), resulting in a sizable appreciation in real effective terms, mainly because of the high rate of domestic inflation. In view of a continued weak export performance, price stabilisation schemes for cocoa and copra were instituted in early 1982 (Browne and Scott, 1989).

Until 1983, adjustment of domestic economic policies, notably fiscal and exchange rate policies, to the sharp deterioration in the external environment was limited, particularly with respect to the public sector (IMF Press Release, 1983). The IMF supported economic and financial programme for 1983 was the first stage of a medium-term adjustment plan to achieve a sustainable BOP position, moderate the rate of inflation, and promote economic growth (IMF Press Release, 1983). This programme was supported by IMF's stand-by arrangement of 3.38 million SDR's. Tight fiscal and monetary policies and wage restraint throughout 1983 were directed at curbing the growth in aggregate demand and controlling inflation (Browne and

Scott, 1989). Demand management policies were combined with exchange rate adjustments to foster a reallocation of resources to the export and import-competing sectors.

The economic and financial programmes adopted during 1983-85, which coincided with a change in the government, were the first stage of medium-term adjustment processes intended to achieve a sustainable BOP (Browne and Scott, 1989). Private and public consumption were curbed and actions taken to strengthen public finances, reduce the growth of credit, dismantle the foreign exchange allocation system, and pursue flexible interest and exchange rate policies (Browne and Scott, 1989). Revenue measures including import surcharge, increased excise duties, the collection of income tax arrears and higher government fees and charges. A change in the basis of assessment of customs duties facilitated collection, and revised rates provided more uniform levels of effective protection within the import competing sector. Public sector imports were made subject to duty, and almost all excise duties were converted from a specific to an *ad valorem* basis (Browne and Scott, 1989). Current expenditure in relation to GDP was reduced by curbs on the growth of public sector employment, wages, and salaries, the postponement of lower priority projects, and transfers of other projects to the private sector (ADB, 1985). Interest and exchange rate adjustments were implemented early in the adjustment process. The government raised bank deposit rates by 5-6 percent and lending rates by an average of 4 percent points, in early 1983 (Browne and Scott, 1989).

The IMF programme for 1984 represented the second phase of a medium-term

effort to promote growth in the context of a lower rate of inflation and a sustainable improved BOP position (IMF Press Release, 1984). The programme focused on correcting structural weaknesses, improving resource allocation, and promoting export led growth, while consolidating the gains achieved in 1983. The major economic targets for 1984 were to raise real GDP growth to 2 percent from 0.5 percent in 1983 from the negative growth rates in the three preceding years to slow inflation to 12 percent from 16.5 percent in 1983; and reduce current account deficit as a per cent of GDP to 12 percent from 14.3 percent in 1983 (IMF Press Release, 1984). These objectives were to be pursued through flexible exchange rate management, improvements in the trade and payments system, further rationalization of the tax system, and continued fiscal and monetary discipline (IMF Press Release, 1984). The programme for 1984 was supported by IMF's stand-by arrangement of 3.38 million SDR's (IMF Press Release, 1985).

During 1986-87, fiscal measures included lower corporate and personal income tax rates, some exemptions from excise taxes, and the temporary suspension of gift and estate duties (Browne and Scott, 1989). The government controlled current spending and limited development spending to the availability of external assistance. The central bank played an active role in containing the expansionary impact on BOP surpluses. Direct credit controls to limit bank lending were supplemented by the introduction of reserve requirements in early 1986 (Browne and Scott, 1989). High positive real interest rates were maintained, although nominal rates were reduced to reflect the lower rate of inflation. Banks were permitted to negotiate their own rates of deposit of 12 months and longer from late 1986. However, in order to encourage

competition for funds among banks to alleviate the rigidities inherent in credit ceilings, the permitted growth in each bank's lending was linked to their deposit growth from early 1987 (Browne and Scott, 1989).

In 1988, macroeconomic adjustment included a relaxation of monetary policy to encourage investments (Siwatibau, 1989). The central bank allowed increases in bank credit to encourage the promotion of long-term deposits by the banks and encourage banks to move cautiously into medium-term lending while avoiding mismatching of their assets (Siwatibau, 1989).

2.5 SUMMARY AND CONCLUSION

This chapter has reviewed the economies of Fiji, PNG, the Solomon Islands and Western Samoa from pre-colonial era through to 1992, analysing individual country's macroeconomic performance during 1980-92 and showing that each went through a number of crises. It also outlined the involvement of IMF in the making of economic policy during the period in response to these crisis.

Some general conclusions can be drawn. First, during the 1980-92 period a range of external economic and internal economic and non-economic conditions had an unprecedented effect that characterised the macroeconomic performance of the four South Pacific economies. The investigation clearly indicates that these countries experienced large and growing deficits in the balance of payments, deteriorating

balance of trade, high inflation and rising imports as a proportion of GDP.

Further, the effect of the second oil shock and the decline in prices of primary export commodities remain common factors which contributed to the crises. However, some factors were more country specific, for example the severity of unfavourable weather conditions in Fiji, the Solomon Islands and Western Samoa. Similarly Western Samoa and the Solomon Islands faced poor demand for their export items. It seems Fiji went through a more severe crisis than the others during 1980-92. Other major contributors to Fiji's crisis were the immediate effects the 1987 military coups and its continued effects in the years that followed; industrial disputes in main export sectors largely as a result of the coups; and competition from Asian manufactures. PNG was free from any severe impacts of weather but the closure of Bougainville mine hampered growth performance severely. The crises experienced by the four countries are also a result of a number of factors constraining development pertinent to the South Pacific region as well as the demonstrated effects of developments following independence.

The countries in the region initiated steps to increase and often change their array of monetary and fiscal instruments as prescribed by the IMF in response to their deteriorating economic positions as time passed by. The effects of this on a number macroeconomic and socio-economic variables is the subject of investigation in chapters five and six, respectively. Before we go there, in the next chapter we take a cross-country view of the development process of the countries under study. The general similarity across these countries in terms of their development trajectory,

encourages our cross-country examination of their growth in the eighties. The insights to be gained by such a study can be later used (see chapter 7) to conclude our work after we have examined the effect of IMF inspired policies in chapters five and six.

CHAPTER THREE

AN EMPIRICAL ANALYSIS OF GROWTH PERFORMANCE - A TEST OF NEW ENDOGENOUS THEORIES OF GROWTH

3.1. INTRODUCTION

The economic performance of Fiji, PNG, the Solomon Islands and Western Samoa, investigated in chapter two, was generally disappointing during 1980-92. Despite the independence and control of most aspects of economic activities, growth performance in these countries worsened in the 1980s. During 1980-89 period, all countries experienced a fall in *per capita* real GDP (Table 13) and sluggish growth in their real GDPs (Table 14).

A number of factors whose severity are probably much greater than those experienced by other world economies, have been identified as potential contributors to this effect and constraining overall development (chapter 2, p.8-17). Growth performance across the small developing economies in the South Pacific region has not received enough attention in terms of sound econometric modelling and empirical investigation

to substantiate policy arguments raised in the literature. Elsewhere, particularly in the semi-industrialised or large developing economies, a number of studies have examined the factors influencing economic growth. Recently, the interest in long-run growth has stimulated the documentation of new endogenous theories of economic growth, making significantly useful contributions towards understanding the various growth theories. Therefore, this study attempts to reduce this imbalance in the Pacific islands empirical literature and complementing existing literature on growth studies. Thus, the purpose of this chapter is to present empirical evidence by developing a growth model and testing a number of hypotheses within the framework of endogenous theories of economic growth. The chapter also provides an initial account of the impact of adjustment on a number of variables usually targeted by the IMF and complements the qualitative and theoretical arguments raised in chapters two and four, respectively.

Table 13. *Per Capita Real GDP in US Dollars*

Year	Fiji	PNG	The Solomon Islands	Western Samoa
1980	2947	1332	2157	1950
1981	2793	1317	1667	1888
1982	2494	1089	1442	1615
1983	2142	1056	1140	1402
1984	2092	953	995	1350
1985	2159	863	789	1089
1986	1924	918	783	838
1987	1667	989	824	736
1988	1670	1043	913	713
1989	1762	1021	754	588

Sources: International Monetary Fund. 1994: *Financial Statistics Yearbook* (Washington D.C.) and The World Bank. 1993: *World Tables* (Washington D.C.).
Author's calculation.

Table 14. *Real GDP Growth Rates in Percent*

Year	Fiji	PNG	The Solomon Islands	Western Samoa
1980	-7.5	-2.3	8.6	-13.9
1981	4.6	0.4	1.6	-12.3
1982	-1.2	-0.2	-0.4	1.2
1983	-3.8	1.0	6.9	1.6
1984	8.2	5.0	11.0	4.9
1985	-4.8	4.6	-9.0	2.5
1986	8.8	5.0	-2.2	0.5
1987	-6.3	6.0	2.1	0.8
1988	0.8	2.9	5.4	-0.2
1989	11.7	-1.4	7.0	1.3
Average 1980-89	2.6	2.2	2.0	-1.4

Sources: Asian Development Bank. various issues: *Annual Report* (Manila) and International Monetary Fund. 1994: *Financial Statistics Yearbook* (Washington D.C.).

Section 3.2 reviews Pacific islands growth literature followed by a general review of literature on growth theory in section 3.3. Section 3.4 develops the empirical model and outlines the hypotheses to be tested; section 3.5 discusses the data used in testing the model; section 3.6 discusses the estimation procedure followed by a discussion of empirical results in section 3.7. Section 3.8 summarises and concludes.

3.2. A REVIEW OF PACIFIC ISLANDS GROWTH LITERATURE

Some studies, concentrating on general economic trends and public policy debates have accounted for growth performances of the Pacific island economies. This line of inquiry includes Smith (1987), Browne and Scott (1989), The World Bank (1991), Kioa (1992), Siwatibau (1993 and 1994), Cole (1993), Fairbairn *et al.* (1993)

and Knapman (1994). These studies show that the growth performance of a number of Pacific island economies has been largely influenced by deficient microeconomic policies, shortage of skilled workforce, high government consumption, unstable trade policies, exchange rate variability, high inflation and adverse weather conditions.

Some studies have attempted to empirically account for these factors on a country specific basis. For example Vincent *et al.* (1991) account for PNG's economic growth by utilising an economy wide model. Similarly, Murphy (1992) and Jayaraman (1992) adopt a macro-econometric model to account for economic growth in Fiji. Jayaraman (1994) through determining the factors influencing fiscal and current account balances, accounts for growth in Western Samoa. More recently Murinde and Rarawa (1996) have provided empirical evidence on the potency of stabilisation policies in the Solomon Islands.

Although these studies are important in the issues they address, they have some serious limitations which makes it difficult to use them for comparisons with the issues dealt here or in chapter five. Firstly, none of these studies make a systematic investigation of the factors directly fostering or hindering economic growth in the Pacific islands. The empirical studies mentioned above are largely macroeconomic in nature and suffer from specification bias due to omission of relevant non-macroeconomic variables. Except for Murinde and Rarawa (1996), the other studies utilise annual time-series data for model estimation. In this chapter a pooled cross-sectional model is adopted which uses annual data for a number of countries in one regression while the model in chapter five utilises quarterly data. This does not allow a fair comparison of results when the

choice of data series, the countries and methodology are different.

Further all these empirical studies make strong policy recommendations, yet have serious econometric limitations. First of all the sample sizes are very small thus the models are constrained by the limited degrees of freedom. This aspect is acknowledged by Jayaraman (1994) in spite of strong policy recommendations. Secondly, the techniques of estimation of econometric models has advanced quite rapidly over the last ten years. Two advancements essential for any applied econometric work is the diagnostic testing of models and testing the time series properties of the data. None of these studies utilise either of these two approaches. Hendry (1987) contends that economic policy formulation depends ultimately on sound empirical analysis for its direction and sustenance. Therefore the empirical results generated by these studies cannot be regarded as an adequate representation of the economic phenomenon.

3.3. EXISTING GROWTH LITERATURE

This investigation begins by briefly reviewing selected existing studies making theoretical and empirical contributions towards understanding the role of various factors in economic growth.

Harrod (1939) makes one of the earliest contributions to growth theory, placing the Keynesian savings-investment equilibrium in a dynamic context by observing that the rate of growth in the labour force. On the other hand, Kuznets (1955, 1963)

pioneered the analysis of the historical growth patterns of contemporary developed countries suggesting that, in the early stages of economic growth, the distribution of income tends to worsen, while at later stages it improves.

The concern for building models incorporating long-run growth in output per head led to the inclusion of technical progress as a determinant of long-run growth. Kaldor (1957) pioneered this issue seeing experience as the basis of learning. He was followed by Arrow (1962), who incorporated 'learning by doing' in his model. Closely allied to this is a different class of model which explains endogenously the long-run rate of growth following in the tradition of Uzawa (1965), Shell (1973) and, recently, Lucas (1988) and Romer (1990). The argument here is that the amount of resources allocated to a sector produces ideas used at zero cost in that sector which ultimately produces goods that may be consumed or invested (Stern, 1991).

Subsequent contributions to growth have led to the establishment of some new theories. The recent work by Chenery *et al.* (1986), Barro (1989a,b), Otani and Villanueva (1990), Barro (1991) and Knight *et al.*, (1993) is stimulated by newer theories including contributions to literature on cross-country economic growth by Grier and Tullock (1989), Easterly *et al.* (1991), Renelt (1991), Levine and Renelt (1992), Savvides (1995) and Ghura (1995). Easterly *et al.* (1991), Renelt (1991) and Levine and Renelt (1992) have thoroughly enumerated the role of these new factors in economic growth. These studies identify a number a new potential determinants of the long-run rate of economic growth, and these factors are subjected to empirical investigation: the role of inflation, international trade, the size of the government sector, financial

development, the exchange rates and political instability.

While theoretical contributions to economic growth have grown, empirical analysis has also kept pace. One such comprehensive study is that of Kormendi and Meguire (1985). Additions to the empirical literature have continued, for example, Ram (1987), Looney (1989), Alexander (1990), Otani and Villanueva (1990), Bairam (1991), Barro (1991), Pourgerami and Assane (1992), (1992) and Knight *et al.* (1993). The most recent empirical investigations are from Savvides (1995) and Ghura (1995). Drawing on the recent endogenous growth methodology, Savvides (1995) and Ghura (1995) show that initial conditions, physical and human capital investments, population growth, trade orientation, inflation, financial development, growth in government sector and political freedom contributed significantly to economic growth across Africa.

Although the work on growth theory is expanding, a large number of these studies have focused on large developing countries. Given the scarcity of similar studies involving small to very small developing countries, the next section develops a growth model following the work on newer growth theories, but focusing on small developing economies of the South Pacific region.

3.4. EMPIRICAL MODEL AND HYPOTHESES

A simple model is formulated here to capture the basis of the relationship of interest. In evaluating factors contributing to the growth process, most researchers have

followed Solow's early work (Solow, 1956). The simplest formulation can be shown as:

$$Y = F(K, L) \tag{1}$$

Where K is capital and L is labour. The logarithmic differentiation of equation (1) produces equation (2).

$$\frac{\dot{Y}}{Y} = \alpha_1 \frac{\dot{K}}{K} + \alpha_2 \frac{\dot{L}}{L} \tag{2}$$

where, α_1 and α_2 are the elasticities of $F(.)$ with respect to capital and labour.

The formulation presented in equation (2) provides the basis of econometrically estimable relation explaining aggregate growth $(\dot{Y}/Y)$ in terms of the rates of growth in capital $(\dot{K}/K)$ and labour $(\dot{L}/L)$.

It is worthy to note that equations (1) and (2) carry two presumptions: that the economy under study is always on its production possibility frontier and that all factors are fully and efficiently utilised all the time. However, it is a seldom case that the economies actually meet these conditions while along actual development paths. Therefore, it is necessary to model the divergence between the efficient path and the actual historically observed path of the economy.

It is postulated that he divergence between the dependent and the explanatory variables in equation (2) are affected by economic factors that determine capacity utilisation and the level of economic activity. This means that in an econometric estimable models that analyses the growth process, the discrepancy between the

dependent and explanatory variables in equation (2) cannot be entirely attributed to random shocks but a part of it should be predictable by economic variables such as the rate of inflation, the involvement of government in an economy, the level of investment in physical capital, the extent of participation in international trade and the stability of exchange rate. Since social and political factors also contribute in a similar manner to the current activity level, it is worthwhile to control for these factors too.

In view of the above, equation (3) is formulated to describe the data generation process across the Pacific island countries. The model presented by equation (3) assumes linearity of the process with respect to all macroeconomic state variables. Finally, the empirical model has been specified in terms of per capita growth rate for reasons of expediency.

$$PCGDP_{it} = \beta_0 + \beta_1 IPCI_{it} + \beta_2 PC_{it} + \beta_3 HC_{it} + \beta_4 IFN_{it} + \beta_5 GC_{it} + \beta_6 IT_{it} + \beta_7 ERS_{it} + \beta_8 PL_{it} + \beta_9 ED_{it} + \upsilon_{it} \quad (9)$$

where:

PCGDP	=	growth rate of *per capita* GDP
IPCI	=	initial *per capita* income
PC	=	physical capital
HC	=	human capital
IFN	=	inflation
GC	=	government consumption
IT	=	International trade
ERS	=	exchange rate stability

PL	=	political instability
ED	=	external disturbance
i	=	country
t	=	time period
υ_j	=	error term assumed to be normally distributed with an expected mean value of zero.

The next section provides a discussion of the theoretical justification of the variables and their measures. The model specified above incorporates a number of variables thought to be influencing growth. It has to be noted that omission of relevant variables can constitute to specification bias.

3.4.1. Theoretical Justification and Variable Measures.

(a) Growth Rate of *Per Capita* GDP *(PCGDP)*

PCGDP is the average annual growth rate of real *per capita* gross domestic product, thus accounting for population growth as a determinant of growth. Some studies (Levine and Renelt, 1992, Savvides, 1995 and Ghura, 1995) have used growth rate of GDP as the dependent variable, while Alexander (1990) has used the specification formulated here. However, in the former case, population growth rate is entered as an explanatory variable while this variable is not used as an explanatory variable in this study because possible multicollinearity can arise.

(b) Initial *Per Capita* Income *(IPCI)*

The variable *IPCI* is the real initial per capita income at the beginning of each year, included to test the convergence hypothesis. The argument here is that, according to the standard neoclassical growth models such as Solow (1956), Cass (1965) and Koopmans (1965), a country's per capita growth rate tends to be inversely related to its initial level of per capita income. This means that if countries are similar with respect to structural parameters for performance and technology, less advanced countries tend to catch-up with the advanced countries. Barro (1991) suggests that the main element behind convergence is diminishing returns to reproducible capital because developing countries with low ratios of capital to labour have high marginal products of capital. Eventually, a system of convergence produces the same per capita GDP. As such, variable *IPCI* is included to measure this contention with an expected negative sign on its estimated coefficient.

(c) Physical Capital *(PC)*

According to the Harrod-Domar standard growth theory, investment is the main element that moves the economy. An increase in investments is hypothesised to increase the real per capita GDP. However, the Harrod-Domar model stands on a knife edge and is beset with numerous difficulties of instability and using highly simplified assumptions (Ghatak, 1995). According to Ghatak (1995), some simplified assumptions of the Harrod-Domar model include one product where commodity composition of the total product is disregarded, a fixed technological relationship between capital stock and

income flows, constance of saving ratio, absence of lags, absence of trade, no depreciation of capital and one factor of production. In spite of its shortcomings, it has been used as a theoretical argument in many empirical studies, the main attraction being perhaps of its simplicity. The variable *PC* is measured as percentage change in real annual investment as a proportion of real GDP with an expected positive sign on the estimated coefficient.

(d) Human Capital *(HC)*

Nelson and Phelps (1966) suggest that a larger stock of human capital makes it easier for a country to absorb new products or ideas that have been discovered elsewhere, thus allowing quicker rate of growth and higher output. In the Lucas (1988) and Becker *et al.* (1990) models, investments in human capital enhances the productivity of both the recipients of human capital and society at large. This may be due to government policies promoting investments in human capital such as education, health and nutrition thus allowing larger returns in terms of enhancing long-run growth and development. Closely allied to this is the model developed by Romer (1990). Here, human capital is the key input to the research sector, which generates new products or ideas that underlie progress. Thus, countries with greater levels of human capital are able to quickly introduce new ideas and goods and thereby tend to grow faster. The variable *HC* is proxied as percentage change in life expectancies at birth. The coefficient of *HC* is expected to be positive.

(e) Inflation *(IFN)*

There are two lines of argument in regard to the effects of inflation on growth based on the Tobin-Mundell and the cash-in-advance hypotheses. The Tobin-Mundell effect involves a shift away from real money balances towards real capital as a consequence of higher anticipated inflation, hence greater economic growth. Contrary to this is Stockman's (1981) cash-in-advance model which predicts that higher anticipated inflation reduces economic activity. Inflation also plays a significant role in allowing macroeconomic stability. Lucas (1973), Barro (1976), Fischer (1979) and Stockman (1981) explore the relationship between monetary policy and growth. The argument is that the existence of macroeconomic instability makes it difficult and costly to extract correct signals from relative price such as real returns to investment in different sectors and may cause inefficient allocation of resources (Barro, 1976). For example, the World Bank (1991) suggests that macroeconomic stability as a prerequisite for sustained economic growth. In addition, Savvides (1995) argues that conducive monetary policy is thought to allow a stable financial environment necessary for economic growth by keeping inflation rates low. The variable *IFN* is percentage change in consumer price index. The coefficient of *IFN* is expected to be negative.

(f) Government Consumption *(GC)*

The role of government involvement in developing countries is highly controversial. Bailey (1971), Buiter (1977) and Kormendi (1983) argue that government is the provider of valuable public goods such as education, health, infrastructure and

defining property rights, thus complementing private investment and is beneficial to growth. Another line of argument is that increased government consumption is usually accompanied by increasing taxes and increasing monetisation of the deficit, distorting allocation of resources and increasing the inefficiency, thus reducing growth (Barro, 1991). In general, countries with greater growth of government spending as a proportion of output are expected to experience slower output. The variable *GC* is measured by percentage change in real government consumption as a proportion of real GDP. *GC* is expected to have a negative sign on the estimated coefficient.

(g) International Trade *(IT)*

International trade is important for the less advanced economies which stand to gain a lot from the freeing of trade. Krueger (1974) and Balassa (1978) suggests that trade restrictions like tariffs and quotas adversely affect the efficiency of an economy through the failure to exploit comparative advantage and hence reduce aggregate output. Therefore, outward orientation fosters growth in terms of deriving benefits of comparative advantage, affording greater capacity utilisation, inducing more rapid technological change and increasing economies of scale due to increases in effective market size thus allowing higher growth. In the new endogenous growth models of Romer (1986 and 1990) and Grossman and Helpman (1989) openness to international trade accelerates technological advancements (and hence growth) from access to goods with embodied technology and knowledge spill-overs. The variable *IT* is measured by percentage change in real exports as a proportion of GDP. The variable *IT* is expected to have a positive sign on the estimated coefficient.

(h) Exchange Rate Stability *(ERS)*

One feature of stable macroeconomic policy is the maintenance of exchange rate stability. A high exchange rate variability has a depressing effect on economic growth. In particular, rigid exchange rate policy such as over-valuation of exchange rates hinders the ability of export oriented firms to be competitive in the international markets. Exchange rate policy has direct effect on the prices of internationally traded goods relative to those goods which are not traded internationally. The exchange rate stability is crucial for exporters as price received for their products depend on it, among other factors. Over-valuation of exchange rate may result in lower domestic price of tradeable relative to non-tradeable which could lower the prices received by exporters relative to costs. The variable *ERS* is measured as percentage change in weighted average of the real exchange rate of each country's main trading partners, determined on the basis of the average value of exports. The weights are calculated as each country's share of exports on total. The coefficient of *ERS* is expected to be negative.

(i) Political Instability *(PL)*

Hayek (1944) and Friedman (1962) have argued that freedom should facilitate economic performance and hence growth. This is because, as a result of political instability, investments in physical capital may be discouraged as risk of capital loss may increase as rules governing investments change with change of political regimes. Also, forms of political repercussions usually accompanying political instability results in skilled workers emigrating for better economic opportunities reducing the quantity and

quality of labour, thus reducing output, *ceteris paribus*, given positive marginal productivity of these factors of production. Alternatively, it may be argued that for a country to grow rapidly requires autocratic control and reduced freedom. This line of argument has substance in regard to recent robust growth performances experienced by China, Malaysia and Indonesia, countries having comparatively reduced freedom than their Western counterparts but high rates of growth. However, Lewis (1970) suggests that autocracy is not required for economic growth and that economic growth does not necessarily increase happiness and freedom. Alesina *et al.* (1992) show that political instability reduces growth unequivocally, but that lower economic growth does not contribute significantly to increased political turmoil. Due to lack of suitable measures of political instability, dummy variables are used as a proxy, taking a value of one for years of most freedom and zero for other years. The variable *PL* was allocated zero for years 1987-89 in Fiji and 81-83 and 86-89 in PNG.

(j) External Disturbance (*ED*)

According to Srinivasan (1986), many small economies are more vulnerable than large ones, in terms of the effects of the frequent natural disasters and changing international economic environment. Although natural calamities occur in larger economies, Briguglio (1995) argues that their impact on small island economies is relatively large in terms of damage per unit of area and costs *per capita* due to size. The effects of large scale destruction of the agricultural sector, eradication of village settlements and disruption to transport and communication systems severely slows long-term growth and development (Briguglio, 1995). Further, being more open and reliant

on fewer exports, they are greatly affected by the international economic environment: substantial fluctuations in the prices of primary goods, securing export markets, energy price hikes and increases in interest rates on foreign debts. Thus, the variable *ED* is included, measured by percentage change in real terms of trade with an expected positive coefficient.

3.5. DATA

Subject to their inherent data limitations, it was only possible to obtain reasonable annual data between twelve to twenty-two years for countries with respect to the variables specified above. The raw data is presented in appendices 7.1-7.4. While a sample of this size is certainly not large for estimation on a country-by-country basis, it appears large enough for a modest start towards obtaining relevant parameters for the South Pacific region on a cross-country basis. The data comes from the International Monetary Fund's, *Financial Statistics Yearbook* (1994), the Department of Statistics publications (various years) for each country; the United Nations, *Statistical Yearbook for Asia and the Pacific* (various years); The World Bank's, *World Tables* (1993); and the South Pacific Commission's, *Statistical Summary* (various years). The period covered is 1979-89.

3.6. ESTIMATION PROCEDURE

Since one of the concerns of our research is to provide analysis on a country-specific basis, the cross-section model of this chapter needs some justification. As mentioned in section 3.5, a number of countries have inherent data limitations. Western Samoa and the Solomon Islands have published annual data for thirteen and fourteen years respectively. The data collection and processing efforts in these two countries, among others in the region are of recent origin and long-term annual data on a number of variables are unavailable. One other option is to use quarterly data as utilised in chapter five below. Published quarterly data were not available on variables like per capita income, population and life expectancy in all four countries. The models in chapter five incorporate a narrower range of variables where quarterly data were available.

This inherent deficiency of data has forced the estimation procedure of this chapter to pool data for all countries in order to expand the sample size. This procedure has its own limitations. For example, Gupta (1986) and Levine and Zervos (1993) suggest that there are fundamental differences between the macroeconomic determinants of growth in different types of economies so that pooling data across a broad sample of countries is inappropriate. However, Levine and Zervos (1991) note that cross-country regressions can be useful in demonstrating that certain policy-growth relationships hold well across countries and will influence beliefs about policy and economic performance. Beliefs about policy and growth that are not supported by cross-country evidence should be viewed sceptically. We believe that a number of Pacific island economies are

subjected to external economic forces, the impact of which is similar across the region. There are also other aspects such as the export structures and the overall physical geography which are largely common across a number of Pacific island countries, and this lends some merit to putting them in one regression. However, the results below should be interpreted only as preliminary evidence regarding the countries under consideration.

The data are also transformed into the percentage changes. One reason is because the dependent variable measures the rate of growth as percentage change in per capita GDP. Therefore to be consistent, other variables are also transformed as per cent changes.

The model was estimated by Generalised Least Squares (GLS) procedure using the *SHAZAM* econometrics package. The results presented in Table 15 show the fit of the model to the data and signs, and the significance of the variable coefficients. In all reported regressions the *t*-statistics are in parentheses below their respective coefficient. A number of equations involving a combination of variables were successively estimated. The significance level of a number of the estimated coefficients remain robust across the specifications. When pooling data, the issue of heteroscedasticity in the error term must be addressed. In regard to this, the equations perform well exhibiting no problems of heteroscedasticity as revealed by the ARCH test. The model does not suffer from autocorrelation in residuals (DW), while the error terms are normal (JB). The overall explanatory power (*Buse* R^2), is high and highly satisfactory. Usually pooled cross-section of time-series model have low R^2. The goodness of fit of the model

appears to improve appreciably over specifications one to eight as *Buse* R^2 increases, thus signifying the importance of the inclusion of a number of variables and their ability to contribute to the explanatory power.

One important issue in choosing the right hand side variables is to ensure that they do not overlap one another, that is there is no collinearity or multi-collinearity. Broadly interpreted, multicollinearity refers to the situation where there is either an exact or approximately exact linear relationship among the explanatory variables. In the model adopted here, such a relationship is avoided through the choice of variables and their measures. Although there are no sure methods of detecting collinearity, the clearest sign of multicollinearity is when R^2 is very high but none of the regression coefficients is statistically significant on the basis of conventional *t* test (Gujarati, 1989). The results presented in Table 15 do not support this condition. All of the specifications show low R^2 and a number of coefficients are highly significant. This itself shows the absence of any overlapping effects among the variables chosen.

On the basis of *t*-ratio and the level of *Buse* R^2, models in specifications three to eight perform better that other specifications. The *F* value supports the variables included in the regression. It should be noted that the hypotheses tested here are only against simple hypotheses of no relations. There exists a number of hypotheses not considered here that may yield similar predictions to those tested in this study. Further research in testing more hypotheses and inclusion of more Pacific island countries is encouraged.

3.7. DISCUSSION OF EMPIRICAL RESULTS

The coefficient *IPCI* is positive in specifications one, four, six and eight, insignificant in all except specification six and inconsistent with the theoretical expectations. The results of specifications two, three, five and seven, although highly insignificant except in specification five, are consistent with theoretical expectations. The statistical significance of this effect is not strengthened after controlling for other factors in specifications seven and eight. As such the results do not provide any strong evidence of Pacific island countries catching up with the more advanced economies.

In general, econometric studies typically find no significant correlation between growth rates and initial incomes levels, and in many cases the coefficient on initial incomes turns out to be positive. Skott and Auerbach (1995) have given a possible explanation for this effect, arguing that a lack of convergence could be due to exogenous and destabilising shocks or, alternatively, it would reflect endogenous economic tendencies to instability. They further note that the absence of unbounded divergence could be explained either by the intrinsic stability of the economic system or by the influence of induced structural shifts in mitigating the destabilising effects of pure market forces.

Table 15. *Cross-country Regression Results.*

Variables	1	2	3	4	5	6	7	8
Constant	-0.35	3.53	3.42	3.68	12.38**	-5.11	3.49	2.64
	(-0.11)	(0.48)	(0.48)	(0.60)	(2.21)	(-0.77)	(0.84)	(0.39)
IPCI	0.004	-0.0002	-0.46	0.0003	-0.002**	0.003***	-0.0002	0.0008
	(0.27)	(-0.14)	(-0.27)	(0.20)	(-1.72)	(1.49)	(-0.099)	(0.039)
PC	-0.02*	-3.87*	-0.23*	-0.17*	-0.17*	-0.18*	-0.19*	-0.18*
	(-2.92)	(-2.92)	(-3.65)	(-3.57)	(-3.40)	(-3.24)	(-3.43)	(-3.42)
HC	...	-3.87	-1.53	-3.13	-8.11**	12.50**	3.08	4.17
		(-0.59)	(-0.24)	(-0.54)	(-1.77)	(1.84)	(0.48)	(0.62)
IFN	...	...	...	-0.49*	...	-0.67**	-0.53*	-0.56*
				(-2.92)		(-3.51)	(-2.76)	(-3.02)
GC	...	...	-0.033***	-0.044*	-0.049*	-0.037**	-0.042*	-0.040**
			(-1.36)	(-2.42)	(-2.58)	(-1.85)	(-2.05)	(-1.95)
IT	...	...	0.20*	...	(0.02)	0.23*	0.055	0.067
			(2.87)		(0.31)	(3.79)	(0.70)	(0.82)
ERS	...	...	-0.081	...	...	-0.25***	...	-0.096
			(-0.47)			(-1.58)		(-0.64)
PL	...	...	...	...	...	...	2.32	2.45
							(0.84)	(0.88)
ED	...	...	...	0.29*	0.31*	...	0.26*	0.25*
				(5.41)	(4.45)		(3.46)	(3.17)
Buse R^2	0.18	0.18	0.39	0.62	0.70	0.54	0.62	0.62
F	4.46	3.01	3.76	10.03	14.21	5.91	6.95	6.18
DW	1.75	1.76	1.82	2.03	1.86	1.77	1.78	1.73
JB	3.51	1.62	2.15	3.88	1.36	2.67	4.01	3.52
ARCH	2.34	1.68	3.21	1.94	0.93	1.66	1.67	2.13
N	44	44	44	44	44	44	44	44

* Significant at the 1 percent level.
** Significant at the 5 percent level.
*** Significant at the 10 percent level.

The coefficient PC is negative, highly significant across all the specifications, and inconsistent with the theoretical expectations. This suggests that physical capital accumulation did not contribute to economic growth of the Pacific island economies. For the countries in this study, gross domestic investment as a percent of GDP averaged 25.8 for the period 1979-89, thus suggesting that the high levels of domestic investment has not being translated into higher growth. One possible explanation is the limitations of the microeconomic policies in the Pacific island countries. For example, the World Bank (1991) argues that deficient microeconomic policies, such as the public sectors encouraging rent seeking behaviour and crowding of private investment and inward looking investment policies discouraging private investment, thus growth. On the other hand, the high ratio of investment to GDP is also influenced by foreign aid. For example, Pollard (1995) argues that aid donors have largely strengthened the Pacific islands infrastructure, transportation, communications, trade, skills, health, education and finance to support economic growth. However, Browne (1995) notes that despite all this assistance Pacific island economies have not grown robustly. Thus, it can be said that investments either in the form of aid or otherwise have lacked appropriate and supportive domestic policies to have the desired effect of increased growth. The results generally suggest that the supply-side policy advocated by the IMF to enhance physical capital accumulation has not produced the desired effect.

The coefficient HC is negative and insignificant in specifications two and three and negative and significant in specification five, thus inconsistent with theoretical expectations. The results clearly suggests that human capital accumulation has not allowed significant contribution to growth in the Pacific islands. The results are

consistent with Gannicott (1990) who notes that Pacific island countries have failed to provide appropriate quantity and type of workforce skills for economic development. Apart from Fiji and Western Samoa, literacy levels are very low in PNG and the Solomon Islands. For example, 48 percent of the population in PNG age 15 and above are illiterate (The World Bank, 1994). Cole (1993) suggests that in PNG and the Solomon Islands, low skill levels are compounded by inadequate education policies and have hampered growth in manufacturing and processing sectors. This itself reflects the failure of IMF inspired policies in regard to human capital development. The general lack of low skill levels is also compounded by emigration of skilled professionals in case of Fiji following the coups in 1987 (Gani and Ward, 1995). In addition, there has been a long-term trend in Western Samoa and Tonga of young people to travel to metropolitan centres in developed countries to fill the demand for young and unskilled workers. Again, the supply side policy advocated by the IMF to enhance the development of human capital has not produced the desired effect. However, IMF embarked on including policies which could improve the quality of life in 1986 (Gupta and Nashashibi, 1990). Since the sample period covers 1979-89, this policy effect may not be captured by the sample.

The coefficient *GC* is as expected, negative and highly significant in all specifications. This result provides enough evidence to support the hypothesis that a faster growing government sector is associated with slower economic growth in the Pacific island economies. This is consistent with Pollard (1995) who contends that operations of domestic economy in the Pacific islands have been distorted by expensive government and subsidisation of public utilities and enterprises. For instance, over the

period 1979-89 government consumption as a proportion of GDP averaged 18 percent in Western Samoa; 27 percent in the Solomon Islands; 24 percent in PNG and 17 percent in Fiji. Smith (1987) on the other hand notes that public finances are typically the source of much instability in the Pacific islands countries, both because of the size of government operations relative to the economy as a whole and the substantial involvement of the public sector in the export sector. The problem of public administration in the Pacific islands is a result of large government (Fairbairn *et al.* 1993). Thus, this tends to be very expensive *per capita* given very small populations in these countries. The results suggest that the adjustment policies focusing on reducing government consumption have not been effective.

The coefficient *IT* is negative in specification five, positive and significant in specifications three and six. However, when controlling for a number of other variables particularly in specifications seven and eight, the coefficient while being positive is highly insignificant. Thus results in specifications seven and eight do not provide strong support for the hypothesis that the trade sector significantly contributes towards economic growth in the Pacific island economies. The results reflect the trade structure of the island countries. For example, except for PNG and Fiji, a large number are endowed with narrow range of resources which has encouraged concentration in a few traded goods in which they have comparative advantage. PNG exports minerals, copper and cocoa; Fiji sugar, tourism and light manufactures; the Solomon Islands copra, timber and fish; while Western Samoa relies on copra, cocoa and vegetables. In addition, the import share of GDP exceeds the exports share of GDP in an number of countries, thus resulting in balance of trade deficits. For example, the average share of exports to GDP

during 1979-89 was 47 percent for Fiji; 51 percent for PNG; 50 percent for the Solomon Islands; and 14 percent for Western Samoa. At the same time, average share of imports to GDP was 49 percent for Fiji; 40 percent PNG; 61 percent for the Solomon Islands; and 56 percent for Western Samoa. There are high and variable trade barriers and policies generally are unstable, a great hinderance to export expansion (Duncan, 1994). Therefore, the trade structure of the Pacific islands economies does not allow the countries to reap the benefits of economies of scale, increasing returns and the resulting source of capital accumulation for economic development. The results suggest that IMF should heavily concentrate on promoting trade liberalisation in their adjustment policies in the Pacific island member countries

The coefficient *ERS* is negative in specifications three and six and positive and insignificant in specification eight. The results support the hypothesis that high, real exchange rate variability tends to strongly depress economic growth across the Pacific island economies. The results are consistent with Siwatibau (1993) who notes that persistent exchange rate over-valuation among the Pacific island countries destroys the capacity of export-oriented firms to compete in international markets. The results also suggest that IMF's targeting of the exchange rate stability has not been significantly effective.

The coefficient *IFN* is as expected, negative and highly significant in all specifications, suggesting that a high rate of inflation has been detrimental to economic growth in the Pacific island economies, providing evidence in favour of Stockman's (1981) hypothesis. The Pacific Islands Development Programme Research Report (1989)

shows that macroeconomic policies adopted by the island countries have generated a stable financial system, and fiscal and monetary policies have avoided inflationary pressures and hyper-inflation. Although none of the countries experienced hyper-inflation rates, the rate of inflation over the period 1979-89 was high, averaging 7.5 percent in Fiji; 5.8 percent in PNG; 12.6 percent in the Solomon Islands; and 13.5 percent in the Western Samoa. These figures suggest that Pacific island countries were subjected to rising inflationary pressures, thus deteriorating growth.

The coefficient *PL* is, as expected, positive but insignificant. Thus weak evidence exists to theorise that political instability has adversely affected economic growth across the Pacific island economies. Although the Solomon Islands and Western Samoa did not experience any political instability during 1979-89 (reflecting the weak effect on *PL*) Fiji and PNG did. The 1987 coups of Fiji disrupted sugar production, tourism and aid flows leading to capital flight and emigration of skilled people (Browne and Scott, 1989). The legacy of the coups still prevails given the instability of the interim government, the uncertainty surrounding the renewal of the land leases for sugar cane farmers and the inability to cope with loss of a skill base. This poses a major challenge to Fiji in terms of achieving higher levels of growth as well as limiting the insecure political environment ahead. In PNG, some years down the track, the Bougainvilleans show no signs of giving up. In March 1996, the PNG government finally lost patience with the Bougainvillean rebels and ordered the army to restore order. After costing the PNG government Australian $50 million per annum, PNG is struggling to implement a range of economic reforms requested by the World Bank (Smith, 1996). This is also frightening away potential foreign investors, already alarmed by PNG's mainland law

and order problem. Although assuring democracy is neither designed nor commissioned by IMF's articles of agreement (Cooper, 1993), IMF among other financing institutions could pressure the governments towards providing a blend of political environment conducive to all.

The coefficient *ED* is positive, and highly significant across all specifications, consistent with theoretical expectations. The results suggest that the Pacific island economies are vulnerable in terms of the changing international economic environment and natural disasters, and this has had a deflationary effect on economic activity. A number of countries experienced devastating cyclones over the 1985-90 period. For example, Fiji was hit by four cyclones and one major flood and the Solomon Islands and Western Samoa with two devastating cyclones each. According to Cole (1993), positive and substantial response from international donors off-set damage to public investment programmes resulting from cyclone damage. Such measures have not enhanced growth. The agriculture sector gets hard hit and international donor response does not heal the agricultural sector. Unfavourable weather has disastrous impact on domestic food supplies, which account for the bulk of value added to agriculture and its contribution to GDP. Oil price increases in 1979/80 also fuelled inflation and costs of manufacture and capital equipment imported by these countries. In the trade dependent industrialised countries, the early 1980s witnessed a considerable reduction in economic growth and persistence of stagflation. Pacific islands heavy reliance on their trade partners makes them vulnerable to foreign sector induced fluctuations in income and levels of economic activity. Wide fluctuations in the terms of trade take place because of the concentration of exports in a narrow range of agricultural and mineral exports. The study by Smith

(1987) shows that exports in the Pacific islands economies are subject to especially wide fluctuations compared to developing economies like Malaysia, Philippines, Thailand and Sri Lanka and a number of industrial countries (Table 1 in Smith, 1987). The combined effect of these shocks and other difficult circumstances have largely influenced the pace and pattern of economic growth and transformation in the Pacific island economies.

3.8. SUMMARY AND CONCLUSION

This chapter empirically accounts for growth in the Pacific island economies within the framework of new endogenous theory of economic growth. The results did not show any evidence of physical and human capital as significant predictors of growth. These effects are due to deficient microeconomic policies which has discouraged physical capital investment and insufficient educational policies which has failed to provide the right quantity and type of workforce skills for economic development. Similarly, the insignificant effect shown by the trade variable is a reflection of Pacific islands narrow range of resource endowments, high levels of imports and trade barriers. The insignificance of political instability suggests that the sample period has not fully captured this effect as political instability intensified in Fiji and PNG in the late eighties. In future research, extending the sample period beyond 1989 may fully capture this effect. The significant effect shown by the inflation variable suggests that all countries were subjected to rising inflationary pressures during 1979-89 reflecting imported inflation as import shares of GDP exceeded the export shares of GDP in all countries. The large size of Pacific island governments relative to their economies and the

substantial involvement of the public sector in the export sector reflects the significant effect of the government consumption variable. The significant effect of the exchange rate variable reflects the over-valued exchange rates during 1979-89. The significant effect of the external disturbance variable provides evidence that the Pacific islands are vulnerable to the changing international economic environment and natural disasters due to their location in disaster prone zone and their dependence on large economies for economic support.

Because the findings suggest that some variables have played a major role in these economies, accounting for substantial effects in the region's overall growth during the 1979-89 period, a number of policy implications may be drawn from these exercises, and can be further tested in future research works. For example, governments have played an important role in resource mobilisation where small internal market, geographical isolation, limited availability of entrepreneurship, and related financial instruments render governmental role unavoidable. Although such roles of government may temporarily enhance community welfare, but only at a cost to the private investment. Therefore, privatisation of some governmental operations may have potentials for enhancing long-term growth. There is a need for provision of stable macroeconomic policies particularly those dealing with exchange rate and inflation. Therefore, maintaining low inflation and devaluation of currencies may allow a more stable macroeconomic environment and enhance long-term growth. In regard to external disturbance, the countries could avoid severe impact of external shocks by diversifying their export base from the existing concentration of a few export commodities and services. In terms of protection against natural disasters, Srinivasan (1986) suggests

building of food stocks and foreign reserves. While both are valuable, the former may be very costly as these countries lack appropriate infrastructural facilities in terms of food preservation, storage, distribution and transportation. The extent of growth is strongly affected by external factors which is beyond the control of policy makers. However, it is clear from the results that a judicious combination of policies targeting a number of endogenous variables can stimulate growth in the Pacific island countries in spite of the vagaries of natural disaster and external environment.

This chapter has identified a number of variables influencing growth performance. In regard to this, the next chapter proceeds towards the central concern of this study by providing a literature review of IMF adjustment programmes discussing the standard policy measures prescribed to the developing countries. The empirical results of this chapter are also drawn in the next chapter to complement its theoretical arguments.

CHAPTER 4

LITERATURE REVIEW OF IMF ADJUSTMENT PROGRAMMES

4.1 INTRODUCTION

The purpose of this chapter is to provide a review of the IMF adjustment policies in a theoretical and an empirical context. In doing so, the chapter presents a review and an evaluation of the main features of IMF adjustment programmes: objectives, policies and criticisms.

The outline of the chapter is as follows. Section 4.2 outlines the objectives of adjustment programmes, describing the circumstances leading to the formulation of the core objectives. Section 4.3 discusses the IMF conditionality. Section 4.4 provides a review of standard policies within the theoretical and empirical context, focusing on the demand-side policies, monetary policy (domestic credit contraction) and fiscal policy (reduction in government consumption); supply-side policies (interest rates, trade and investment); exchange rates; poverty reduction; and external financing. Section 4.5 presents a review of some of the empirical studies of the effects of IMF

programmes on growth, BOP and inflation. Section 4.6 presents a critique of adjustment policies followed by section 4.7 which discusses possible policy alternatives. Finally, section 4.8 concludes the discussion.

4.2 OBJECTIVES OF THE IMF ADJUSTMENT PROGRAMMES

In the pursuit of their development objectives - growth, equity, poverty eradication, self-reliance, environmental protection, cultural values - countries are at times faced with major disruptions to which they have to adjust. Therefore, adjustment is adaption to sudden or large, often unexpected changes which may be favourable (exceptionally good harvest, improvement in terms of trade, a rise in export prices, unexpected flow of financial resources or drop in import prices) or unfavourable (domestic or external shocks that may have their origins in macroeconomic or in microeconomic factors) to the set of objectives pursued by a government (Streeten, 1995). The purpose of adjustment programmes is to enable a country to meet its goals of price stability, full employment, BOP equilibrium, a reduction in poverty and income inequality and to enhance overall growth prospects. Such a need arises when a country experiences an imbalance between aggregate domestic demand and supply, usually a result of a combination of internal and external shocks on an unprecedented severe scale.

External shocks such as two substantial increases in oil prices (1974 and 1979-80); a sharp increase in world interest rates (1980-82); the share market crash

of 1987 and a sustained period of stagflation and slow growth in industrial countries, has hindered the growth of developing countries during the 1970s and 1980s (Cooper, 1993).[1] Growth in the developing countries was further affected by internal shocks, such as inappropriate domestic policies expanding aggregate domestic demand too rapidly relative to the productive potential of the economy (thus distorting relative prices); natural disasters (drought, cyclones, hurricanes and floods); weak export bases and a reduction in demand for exports; and high population growth imposing pressures on resources.[2]

The effects of these shocks were so great that developing countries, particularly, could not cope without the assistance of international financial institutions such as the IMF and the World Bank. In response to the deteriorating economic position of the developing countries, a large number of adjustment programmes, supported by the IMF were extended over the past three decades. The programmes were based to a significant extent on the macroeconomic theory of open economies developed during the 1950s and 1960s (Khan and Knight, 1982). The fundamental aim of adjustment programmes in the early years of inception was to find a suitable relationship between resource availabilities and needs that caused minimum strain on the internal price level and produced a desired BOP result (Robichek, 1967). This formed the core aim of IMF adjustment programmes.

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[1] Empirical evidence of the deflationary effect on output of external shocks is supported by Khan and Knight (1985); Doroodian (1985 and 1993); Khan (1990) and Faini *et al* (1991).

[2] Empirical evidence showing the deflationary impact of domestic supply shock on output are supported by Khan and Knight (1985) and Ahmed and Park (1994).

Over the years, the scope and methods of adjustment programmes gradually evolved and expanded, so that programmes implemented today often differ markedly in structure and conception from those of earlier years. Khan and Knight (1981), Gupta and Nashashibi (1990) and Doroodian (1993) argue that the fundamental objectives of adjustment programmes, today, is to eliminate the disequilibrium between aggregate demand and supply, reflected in BOP deficits and rising prices. This objective according to Article 1 of IMF (IMF, 1994), more specifically refers to a programme of comprehensive economic measures designed to achieve broad macroeconomic goals: sustained improvement in the BOP; reductions in domestic inflation; expansion and balanced growth of international trade; exchange rate stability; high levels of employment and real income, or some combination of these.

Since their inception, adjustment programmes have been increasingly criticized for their adverse impact on the poor, because the implementation of most programmes was justified by the expectation that they would facilitate growth and, therefore, in the process reduce poverty. This expected effect was not realised. For example, in a widely publicized study, sponsored by the UNICEF, *Adjustment with a Human Face*, Cornia, Jolly and Stewart (1987) and some IMF studies (Ribe and Carvalho, 1990) criticize IMF policies on the grounds that they have led to severe deterioration in the living conditions of the world's poor. This view is now shared by the IMF.

A review of IMF policies was recommended by the UNICEF study, asking IMF to renew its attention on poverty reduction and to emphasise policies which

could improve the incomes and living standards of the poor during periods of limited growth. Although a change in IMF policy was recommended by the UNICEF study, however, the IMF has considered the poverty issues in its policies since 1986 (Gupta and Nashashibi, 1990). This suggests that the policy change in 1986 would not have shown its effects at the time of the UNICEF study. This could, probably, be because of the short duration between the IMF policy change and UNICEF study where significant effects fell short of being visible.

The IMF now prescribes a wide range of policies: demand management, supply management, exchange rate, external financing, and poverty and income inequality. This is consistent with Blackwell's (1978) suggestion that achievement of the complex set of economic objectives embodied in most adjustment programmes should typically involve the use of a variety of instruments in an eclectic and mutually reinforcing way.

The implementation of the IMF policies by the member countries is accompanied by loan finance conditional on a set of prescribed policies. Therefore, the next section presents an overview of the IMF conditionality.

4.3 IMF CONDITIONALITY

In response to the financial constraints faced by many developing countries, the IMF created a range of adjustment facilities: the tranche, extended fund,

systematic transformation, compensatory and contingency financing, buffer stock financing, emergency assistance, structural adjustment and enhanced structural adjustment facilities (IMF Annual Report, 1994). An outline of each of these facilities is presented in Appendix 8. According to Schadler (1995), these facilities present a channel for IMF's involvement in low-income countries tailored to their needs in two respects: they direct the IMF to encompass structural reforms essential to overcoming financial instability and excessive debts; and the concessional nature of resources enables countries that cannot afford to borrow on market terms to borrow from the IMF.

Assistance under the above facilities is generally conditional upon member countries agreeing to adjustment programmes that the IMF considers appropriate for correcting the deficits. The design of programmes begins with the member countries notifying the IMF of their choice of macroeconomic adjustment (Burton and Gilman, 1991). Following this, an analysis is carried out by the IMF executive board on the country's economic situation and policies. The board's views are then conveyed to the members's government advising on policies to be adopted. The choice of policies and their mix in a programme results from extensive negotiations between the country's authorities and the IMF, thus reflecting the particular economic situation of the country and the preferences of the government. The policies generally include fiscal austerity, tight monetary policies, wage restraint, trade liberalization and currency devaluation. To promote compliance, credit is made available in instalments as successive targets are satisfactorily met.

The adoption of policy advice by member countries is important for the achievement of IMF performance criteria. These requirements have to be met periodically (quarterly, semi-annually or annually) to provide continued access to IMF's resources, private loans and debt rescheduling (IMF Annual Report, 1994).

It is worth noting that, while IMF acknowledges its programmes may have negative effects on some sectors of the economy, it argues that an economy may fare worse without the conditions accompanying the financial aid (Gupta and Nashsahibi, 1990). The next section describes the policies usually supported by the IMF.

4.4 STANDARD IMF POLICIES FOR ADJUSTMENT PROGRAMMES

The IMF adjustment policy is framed around two basic accounting identities as follows:

$$GNDI - DA = CAB$$

$$CAB + NCI = NOIR$$

where, *GNDI* is the gross national disposable income; *DA* is the domestic absorption (residents' expenditure on domestic and foreign goods and services); *CAB* is the current account balance; *NCI* is net capital inflows; and *NOIR* is the net official international reserves.

The first accounting identity indicates that an improvement in the *CAB*

requires either an increase in a country's output or a reduction in its expenditure. The second identity, from the BOP, shows that any excess of expenditure over income, as reflected in current account deficit, must be financed either by capital inflows or reserves. From these basic accounting entities emerge various policy options.

Therefore, the adjustment programmes include a variety of policies designed to have an impact primarily on absorption (demand management policies), current and potential output (supply-side policies), capital flows (external financing policies); and social development (poverty and income inequality policies).

This section discusses how such policies can affect the targets to which they are directed and, thereby, achieve the goal of adjustment. This goal includes achieving a sustainable BOP position and a reduced rate of inflation thus enhancing overall growth and development.

4.4.1 Demand Management Policies

The primary objective of demand management policies is to narrow the external current account deficit and to lower inflationary pressures. Such policies include monetary, fiscal and exchange rates which lie in the traditional realm of macroeconomic policy. The exchange rate policy is discussed separately, as it affects both aggregate demand and supply.

Monetary Policy

IMF's approach to adjustment is characterised as monetarist. The common and most appropriate monetary policy prescribed for developing countries, is a ceiling on the rate of domestic credit expansion. It can be argued that this may not always be appropriate as developing countries are not able to pursue monetary objectives by relying solely on the kind of monetary policy instruments that are employed by central banks in countries with highly developed financial systems.

Monetary policies are formulated within the monetary approach to balance of payments (MABOP) framework. The theoretical development of this approach is pioneered by Polak (1957); Mundell (1971); Dornbusch (1973); and Mussa (1976). The argument behind MABOP is that an excess supply of money is the counterpart of an excess demand for goods, and results in BOP deficits and price increases. According to the MABOP, excess money flows abroad, through foreign purchases, requiring foreign currency, cause a decrease in foreign reserves held by the reserve bank. Given that a domestic economy is a part of the global economy, there is capital mobility, where prices and interest rates are exogenously determined. In particular, income level is determined by flexible wages and interest rates by arbitrage from the world market. If this holds, an increase in prices will increase the demand for money, hence increases in reserves will result in external balance surplus and vice-versa.

Khan and Knight (1985) argue that, according to the MABOP, in the long-term a small open economy operating under a fixed exchange rate regime, with a

reduction in domestic credit will be completely offset by international reserve flows that restore the money stock to the level desired by the public. Although Khan and Knight's (1985) argument suggests desired beneficial effects of MABOP approach, this can also produce undesired effects. For example, during the adjustment process a decline in the growth of domestic credit may be associated with a reduction in capacity utilization and a possible rise in unemployment.

In order to judge the effects of a contractionary monetary policy in developing countries, it is necessary to look at the empirical evidence. Results of empirical studies summarised in Khan and Knight (1985) show that, on average, a 10 percent reduction in the domestic credit growth would reduce the growth of output by less than 1 percent over one year. Contrary to this, Lucas (1972) and Sargent and Wallace (1973) in regard to overall economic growth, argue that changes in money supply have no effect on real economic variables. While Fischer (1977) and Phelps and Taylor (1977) argue that anticipated monetary policy has a strong impact on real economic variables in the short-term. Some empirical studies strongly support the deteriorating effects of increase in domestic credit. For example, Polak (1957) argues that, in an open economy with a given level of real income, domestic credit expansion by the banking system will generate a BOP deficit. Another example is from Doroodian (1993), who in a cross-section of 27 developing countries, showed that a 1 percent increase in money would decrease the real GDP by 0.037 percent and would deteriorate, *ceteris paribus*, the current account ratio by 16.71 percent. Velasco (1993), on the other hand, shows that under fully flexible exchange rates, the real interest does not rise in the short-term in response to a reduction in the rate of

money creation. But, under predetermined exchange rates, which prevent the price level from decreasing, the real rate displays a tendency to increase and remain above its steady state level in response to the analogous policy changes.

On the basis of these empirical results, it can be argued that there is no consistent theoretical prediction of the effects of the money growth rate on economic aggregates, nor is the empirical significance of these real effects agreed upon. One possible reason for the inconsistency of theoretical conclusions, as argued by Wang and Yip (1992), is due to the different ways in which money is introduced into the system. Nevertheless, since MABOP underlies the core adjustment programmes attempt to eliminate the BOP deficit, then it seems that quantitative control is probably necessary over credit since excess money supply is the counterpart to losses in international reserves.

Fiscal Policy

The fiscal structure of adjustment policies is aimed to end an emerging BOP crisis, strengthen public sector savings and/or reduce deficits, making resources available to develop the private sector by supporting productive public investment (Gupta and Nashashibi, 1990). The argument, in regard to fiscal adjustment, is that policies reducing the domestically financed overall government deficit and increasing private capital inflows to private sector will, *ceteris paribus*, have beneficial effects on overall growth, BOP and inflation. Ultimately, all adjustment policies focus on

reducing a government's primary budget deficit by reducing government consumption and raising profit from taxes.

In standard Keynesian models, a reduction in government expenditure or an increase in taxation is expected to have a multiplier effect on the level of real income (Khan and Knight, 1985). With regard to inflation, adjustment policies ultimately amount to reducing a government's primary budget deficit by reducing government consumption and bringing inflation under control. Recent evidence by Choudary and Parai (1991) shows that fiscal factors are important in determining the path of price levels, thus supporting the Keynesian theory of price determination.

Private spending can also be reduced if extra public expenditure increases the private sector's tax liability, either in the present, because of higher taxes now, or in future because of the need to retire public debt. This is the well-known 'Ricardian equivalence' proposition developed by Barro (1974). A test of any direct relationship between changes in government spending or taxes and economic growth in developing countries is quite scarce. Thus, a rational expectations model of public and private spending has yet to be tested for developing countries. The debate remains largely theoretical.

Few studies introduce fiscal variables directly into a growth model for developing countries with varying results. For example, Khan and Knight (1981) have not found that reduction in government expenditures to have a statistically significant effect on increasing overall growth. Empirical results obtained by Doroodian (1993)

show that a 1 percent reduction in government deficit, as a proportion of GDP, could decrease the rate of inflation by 0.001 percent and improve the current account balance by 0.22 percent. On the other hand, Saint-Paul (1992) argues that, contrary to the endogenous growth models popularized by Lucas (1988) and Romer (1986), there is no scope for public debt and social security to improve welfare because, although a decline in public debt increases the growth rate, it hurts some of the current generations and hence is not Pareto-improving.

In summary, the effects of fiscal policy on aggregate demand appear more complex than Keynesian theory suggests, and it is debatable whether a restrictive fiscal policy would reduce domestic demand. Ultimately, this policy requires more empirical testing.

4.4.2 Supply-side Policies

Supply side policies aim at raising the output supplied by the domestic productive sector at a given level of aggregate nominal domestic demand. The adjustment programmes support the deregulation of an economy by focusing on areas of trade, interest rates and investment. The argument behind this is that a government is a major source of inefficiency in the allocation of resources, while the market is a superior mechanism for the allocation of resources. Therefore, IMF emphasizes achieving the right prices through the market which can lead to balanced growth and economic stability.

The two categories of supply-side policies are: those that improve efficiency and those that raise capacity output. Common policy prescribed by the IMF to improve efficiency is trade liberalisation while those used to raise capacity output include interest rate liberalisation and investment.

Trade Liberalisation

In many developing countries, government policies that create distortions are usually intended to achieve objectives other than economic efficiency, such as job creation, consumer subsidies, price controls on basic commodities, and restrictions on certain types of imports (Khan, 1987). The distortion of macroeconomic significance are the artificial barriers to foreign trade such as tariffs, quotas and other restrictions. These types of barriers reduce the amount of trade and specialisation and encourage import-substituting industries that lack efficiency and flexibility of firms continuously exposed to international competition.

IMF argues that its policy of trade liberalisation promotes exports and growth by correcting the shortcomings of import substitution or inward strategies for development. Since the time of Adam Smith, free trade has been promoted as the ideal towards which trade policy should strive. The doctrine of comparative advantage, developed by David Ricardo and others in the early nineteenth century, stressed the gains from trade. At one level, theoretical contributions of Bhagwati (1977); Bhagwati and Srinivasan (1979); Cordon (1974); and Krueger (1984) suggest

that free trade will avoid efficiency losses associated with protection. On the other hand, it is also argued that free trade is less than a perfect policy.

Perhaps the most distinctive difference between trade policy in advanced countries and in developing countries is that, in the latter, trade policy is more consistently preoccupied with the encouragement of manufacturing. Manufacturing has symbolic importance, as it is considered a sign of national development. Such a stance is influenced by the oldest existing theoretical infant industry argument for temporary protection of the manufacturing sector against import competition, forwarded in the 1840s by Friedrich List (Soderston, 1980).

Empirical evidence supports the fact that outward orientation promotes growth and development. For example, Balassa (1982) and Krueger (1981) argue that countries with outward-looking strategies have fared better in terms of growth, employment, and adjustment to external shocks than those in an inward-looking approach. In addition to this, Ram (1987) reports individual estimates of growth models for 88 developing economies, and shows exports playing predominantly positive roles in growth, while Osada (1994) shows that import liberalisation in the Indonesian economy improved the efficiency of the manufacturing sector. The outward orientation has come under further investigation by Dollar (1992). In his sample of 95 developing countries, the results strongly imply that trade liberalization, and devaluation of the real exchange rate could dramatically improve growth performance in many poor countries. The outward orientation measure is highly

correlated with *per capita* GDP growth rates in a large sample of 95 developing countries. The success of outward oriented policies has prompted considerable efforts to encourage developing countries to liberalise their trade.

Closely allied to the issue of trade liberalisation is another source of inefficiency in some developing countries: the distortion associated with price controls, where governments often fix the prices of agricultural commodities at levels different from those in world markets (Khan and Knight, 1985). Such policies have a powerful effect on the level and allocation of agricultural production and on consumption. For example, in many developing countries state marketing boards buy most of the agricultural output. If a marketing board tries to increase its revenue, or reduce its loss, by holding prices below world levels, it is effectively taxing output. This creates disincentives to both domestic production and exports, and can increase imports and cause budgetary problems for the government.

With regard to distortions in agricultural commodities prices, Jones and Kiguel (1994) suggest less taxing of agriculture, putting exporters first and simplifying tariff structure. This line of argument suggests that in agriculture, the possible policy reform task would be to reduce taxation of farmers by reducing the bias against tradeable crops created by overvalued exchange rates and by liberalizing pricing and marketing of agricultural commodities. Thus, this would enable farmers to reap full benefits of the exchange rate depreciations. Because exports are so beneficial for growth, countries should seek to remove unnecessary policy impediments hindering export competition, providing exporters with automatic access to imported foreign

exchange, eliminating export monopolies, and facilitating access to intermediate inputs and capital goods would reduce bias against exporters.

On balance, given the above discussion, it seems that IMF's promotion of trade liberalisation policy is relevant and appropriate to the developing countries in their adjustment process. Empirical work involving a large number of developing countries also provides sufficient evidence to support this policy.

Interest Rate Liberalisation

An expansion of overall aggregate supply depends, *ceteris paribus*, on current investments producing capital. The IMF argues that, in terms of expanding an economy's output, an appropriate supply-side policy would be one that encourages private savings and increases the attractiveness of private capital formation. Therefore, an appropriate policy to focus on is one which increases the return to savings, hence adjusting interest rates to more realistic levels by removing ceilings. A number of developing countries impose ceiling, and other restrictions, on nominal interest rates offered on saving deposits by the banking system. Khan and Knight (1985) argue that under inflationary conditions, these ceilings may lead to low and negative real interest rates on savings.

Frenkel and Johnson (1976), in the MABOP framework, argue that interest rates are the transmission mechanism between monetary policy and aggregate

demand. An increase in money supply lowers market interest rates and stimulates those components of demand that are sensitive to interest rates. On the other hand, McKinnon (1973) and Shaw (1973) argue that low interest rates lead to a distortion in the allocation of resources between present and future consumption, which lowers the savings rate, resulting in reduced capital formation, thus impairing the rate of growth of aggregate supply.

Although targeting domestic interest rates is not a common policy in controlling inflation, it plays an influential role in inflation. The issue is that interest rate policies influence not only short-run changes in spending, inflation, and external balance, but also longer-term accumulation of financial assets and the level and composition of investment (McKinnon, 1973). Therefore, adjustment programmes involving the removal of ceilings to raise domestic interest rates closer to equilibrium rates would also reduce inflation by stimulating domestic savings and capital inflows, increase output and improve the BOP position, thus creating a climate of confidence in the economy.

Some empirical evidence of this relationship is available. Korea, in particular, is a striking example of a country where higher interest rates led to increased savings and investment in an atmosphere of rapid growth and reasonably stable prices (Kanesa-Thasan, 1969). Fry (1980) in his empirical work involving a pooled sample of 14 nations, shows that the coefficient of real interest rate ranged from 0.05 to 0.08, implying that a 10 percent increase in real interest rate would, *ceteris paribus*, raise the ratio of savings to GNP by a little less than 1 percent. These results are

complemented by McDonald (1982) who shows that real interest rates played a significant role in determining real savings in twelve Latin American countries. Further, Foxley (1980) shows that the relaxation of interest rate ceilings in Argentina, Chile, Korea and Uruguay was followed by large capital inflows. Doroodian (1993) claims that a 1 percent increase in the domestic real interest rate would cause, *ceteris paribus*, the rate of inflation to decline by 1.19 percent and CAB to improve by 23.73 percent.

Moreover, a point to be noted in terms of interest rate liberalisation is that interest rate policies and financial reforms need to be reassessed in the context of economic adjustment programmes in developing countries. Developing countries usually have an unstable macroeconomic environment where bank supervision is ineffective. Therefore, interest rate liberalization should take place gradually. A sudden removal of interest rate ceilings could disrupt long-term financial contracts. For example, according to Mirakhor and Villaneuva (1993), an immediate increase in real interest rates took place due to abrupt removals of interest rate ceilings in Argentina, Chile and Uruguay (1970s and 80s), Philippines and Turkey (early 1980s), while Korea, Sri Lanka and Indonesia suffered macroeconomic imbalances to varying degrees. Therefore, strong banking regulatory and supervisory policies are crucial as they ensure the viability and health of the banking system.

Investment Policies

Another aspect of supply-side policy advocated by IMF are measures to enhance physical capital, human capital (skills, education and health) and technological development. Theoretical contributions regarding investment growth relationship have come from a number of authors whose work still remains influential. Harrod (1939), making one of the earliest contributions to growth theory, observed the positive contribution of investment to growth. Solow (1956) shows, that in the long-term, the rate of growth of output is determined by the rate of growth in labour force. The contribution of technological advancement to long-run growth has come from researchers like Kaldor (1957), Arrow (1962), Uzawa (1965), Shell (1973), Lucas (1988) and Romer (1990).

A positive relationship between physical investment and growth is shown by Kormendi and Meguire (1985), Knight, Loayza and Villaneuva (1993), and Blejer and Khan (1994) and Savvides (1995). Faini *et al.* (1991) found that a higher current account surplus and a lower inflation rate, during 1978-81 on a sample of 94 developing countries, were associated with better investment performance.

On the influence of technology, Dowrick and Gemmell (1991) report evidence of the poorest countries in Sub-Saharan Africa improving agricultural productivity. Dowrick and Nguyen (1989) show that, at least within the OECD group of countries, there has been a strong and consistent tendency since 1950 for technological improvements to occur, while Dowrick (1992) notes that there is evidence to support

the technological spill-over hypothesis which states that the less advanced economies have tended to experience faster growth in multi-factor productivity.

Empirical evidence emphasises that education, health care systems and population control measures have substantial effects in increasing productivity and real per capita income. Such studies include The World Bank (1980) and Barro (1991). Barro (1991) shows, for example, that for 98 countries, in a period from 1960-85, the growth rate of real per capita GDP was positively related to human capital. Countries with higher human capital also have lower fertility rates and higher ratios of physical investment to GDP.

4.4.3 Exchange Rate Policies.

Exchange rate policy concerns the way in which the domestic currency price of foreign currency is determined. From the time of establishment of the IMF until 1973, the international monetary system was based on par values, that is, the original Bretton Woods system where member countries maintained a par value of their currencies in terms of gold, either directly or indirectly through a peg to the US dollar (Burton and Gilman, 1991). With the breakdown of the Bretton Woods system, the world moved to what has become known as a system of 'generalized floating'. In this system, individual countries are free to peg their currencies to any other currency or basket of other currencies, or to allow the exchange rate to vary according to market forces. One outcome of this is the overvaluation of the

developing countries' currencies.

Because overvalued exchange rates cause the loss of international competitiveness, devaluation is used as an adjustment policy. The argument is that devaluation of exchange rate affects economic growth and the BOP through its impact on the current account and is considered to be an expenditure-switching (expansionary), and expenditure-reducing (contractionary) policy. For example, the orthodox view (Guitan, 1976 and Dornbusch, 1988), of the growth side, is that devaluation will result in expenditure-switching, increased production of tradeable goods, higher exports and an improvement in the external position of the country in question. Thus, it will have a positive effect on output growth, and is expansionary. On the other hand, the structuralist view advocated by Diaz-Alejandro (1965), Cooper (1971) and Krugman and Taylor (1978), suggests that devaluation may also have a deflationary effect on the aggregate real output of the economy and so is contractionary.

On the BOP side, Khan and Knight (1981) have extensively discussed the demand-supply effects of devaluation. The common denominator is that both aggregate demand and aggregate supply effects of devaluation work toward reducing excess demand in the economy and current account deficits. In particular, devaluation plays a positive role in BOP adjustment through its expenditure-switching effects and increased production of tradeables. However, a contractionary effect of exchange rate adjustment on BOP is also possible. Various theoretical arguments are advanced that point to the contractionary demand and supply effects of devaluation, for example,

Lizondo and Montiel (1988) and Nunnenkamp and Schweickert (1990). Khan and Knight (1982) argue that demand contraction, induced by the exchange rate devaluation, would succeed in adjusting the BOP while maintaining the economy in full operation.

With regard to its impact on inflation, Guitan (1976), Khan and Knight (1985) and Dornbusch (1988) argue that the supply-side effect of devaluation is a rise in domestically produced output of traded goods and a reduction in the output of non-traded goods because, *ceteris paribus*, devaluation lowers the real supply price of factor services in the domestic sector relative to the external sector. If this is the case, then the reduction in the supply of non-traded goods together with the increase in their demand can have the combined effect of raising their price level and lowering their quantity, hence an increase in inflation. The demand-side effect of devaluation is opposite to that of the supply-side effect.

Devaluation is criticised for not only failing to improve the current account of the BOP, but also inducing stagflation in the process (Khan and Knight, 1982 and 1985, and Crockett, 1981). Diaz-Alejandro (1965) argues that devaluation redistributes income to groups with relatively low marginal propensity to consume and that the consequent reduction in aggregate domestic demand has a depressing effect on domestic supply, which more than offsets the increase in the country's exports. On the other hand, Krugman and Taylor (1978) argue that devaluation can also increase the domestic-currency price of imported inputs, and if the demand for them is inelastic, total production would decline. Finally, Cooper (1971), Dornbusch

(1981), and Hanson (1983) argue that, as a general rule, devaluation will be contractionary if the elasticities of import demand and export supply are low or if the initial trade deficit is large.

There is some empirical evidence of devaluation. For example, Agenor (1991), using annual data for 23 developing countries for the period 1978-87, shows that an anticipated depreciation of the real exchange rate has a negative effect on economic activity, while an unanticipated depreciation has a positive impact on output. Moreover, contrary to the results produced by Edwards (1985), the contractionary effect of anticipated depreciations remains significant even after a year. Nunnenkamp and Schweickert (1990), in their pooled cross-section study of forty eight countries, show that devaluation is growth enhancing in the short-term for agricultural export. They also observe contractionary effects of devaluation for exports of manufacturers in periods when devaluation took place. Gylfason and Radetzki (1991), in their sample of twelve least developed countries, show that devaluation can be an effective tool for rectifying current account deficits. Their empirical simulations show that a 10 percent devaluation improves the current account by 0.7 percent to 2.8 percent of GNP in the short to medium-term or by 1.5 percent of GNP on average. Doroodian (1993) shows that a 1 percent point real devaluation, *ceteris paribus*, would cause the current account balance to improve by 21.98 percent points.

Because the literature on the impact of devaluation on output remains ambiguous, the main conclusion from this analysis is that the direction and magnitude of growth effects of exchange rate changes depend on such issues as the extent and

duration of the real exchange rate change, the structure of production, and response of trade flows to relative price changes. To the extent that devaluation affects the sectoral distribution of income, it may not be completely without cost to some sectors. On the other hand, no strong empirical evidence supports the proposition that devaluation necessarily reduces the growth of real output.

4.4.4 Poverty Alleviation Policies

Adjustment programmes supported by the IMF in the 1980s emphasised reforms in fiscal, monetary and exchange rate policies. The late 1980s drew attention to the impact of such reforms on vulnerable groups and the need for action to protect these groups (Jolly and Cornia, 1984, Cornia, Jolly and Stewart, 1987). The IMF was heavily criticised for not addressing the problem of the human impact of its programmes, and not taking an explicit interest in the welfare of the poorest people. For example, in a sample of 30 countries receiving upper tranche stand-by credits during 1964-79, only in one case was it an objective of the stand-by arrangement to protect the poor against possible adverse effects of the programmes (Killick, 1984). However, Cooper (1993), argues that the IMF is wrongly criticised for not carrying out an agenda (eliminate poverty, assure democracy, improve the environment) it was neither designed for nor commissioned by its Articles to carry out. Nevertheless, since 1986, the IMF has been paying greater attention to poverty concerns by improving the design of its programmes to ensure a better blend of adjustment, growth and equity, and in particular, to ensure that the plight of the poor is properly

recognised (IMF, 1990 and Gupta and Nashashibi, 1990).

Generally, available empirical studies in terms of policy impacts conclude both positive and negative effects on poverty. The relationship between economic growth and income inequality gained prominence with Kuznet's (1955) inverted U curve hypothesis which claimed that structural change accompanying economic growth would raise inequality by increasing the complexity of the society before eventually leading to falling inequality. Davis and More (1945) and Parsons (1951) argue that inequality is necessary for growth because higher wages continues to be an important factor in attracting workers. However, Morley (1982) argues that economic growth need not lead to a reduction in poverty if it is accompanied by a greater dispersion of earned incomes around the average. Sachs (1985) argues that IMF programmes may well do more for the poor, in restoring sound economic management, than anything that the debtor countries could do themselves. Heller *et al.*, (1988) argues that, by providing growth and efficient resource allocation, adjustment programmes, on the whole, play a constructive role in safe-guarding the long-term interests of the poor.

Contrary to this, Pastor (1987), in his investigation of the analysis of the IMF programmes in Latin America, finds that IMF programmes were significantly and consistently associated with declines in the wage share in output, worsening income distribution and increased social tension. More recently, similar findings were also provided by Kakwani (1995), whose regression results show that adjusting countries made slower progress in improving their standard of living compared to non-adjusting

countries. Bourguignon, Branson and de Melo (1989) support the view that adjustment packages, which do not have specific components targeted toward the poor, will have a noticeably adverse effect on the distribution of income, and are likely to permanently damage those below the poverty line.

The World Development Report (The World Bank, 1990) argues that well-being is a product of a range of factors including adequate consumption of goods and services; health; status; achievement and security; and sustained increase in the incomes of the poor, requiring broadly based economic growth. Studies like Ribe and Carvalho, (1990); Bourguignon *et al.* (1990); Gupta and Nashashibi, (1990); Helleiner *et al.* (1991); Van De Walle, (1990), suggest a number of policies supporting the above World Development contention. These are discussed as follows.

(1) Promoting economic opportunities through the price mechanism

This means that increases in relative prices of goods utilising labour more intensively encourage growth in sectors that employ such labour, raising the returns to their single most important asset: their capacity to work. Usually, the need to finance schemes aimed at alleviating the impact of adjustment on the poor often include taxation or price increases, the impact of such measures on the poor may be minimized by a judicious combination of policies. Gupta and Nashashibi (1990) note that, in Jordan for example, prices of essential items were increased following a devaluation in 1989 while the resulting budgetary subsidies were financed through revenue measures imposed essentially on richer segments of the population.

Although the enhancement of economic opportunities through price increases may be a good idea, it may not be practically appropriate particularly in countries imposing wage freeze. In addition, increases in prices may have an indirect detrimental effect, particularly on non-waged and non-remunerated workers. Therefore, this policy may prove less than ideal in countries with stringent worker conditions. As the major asset of the poor in most developing and developed countries is their labour time, increasing the demand for unskilled labour relative to its supply could be expected to be the major means of reducing poverty in the third world (Lal, 1995).

(2) Creating productive opportunities for labour and investment in human capital

The *World Development Report* (The World Bank, 1990), demonstrates that poverty has been reduced most successfully in countries pursuing growth policies that creates productive opportunities for labour and investments in the human capital. Such issues may include infrastructural development; improved transport; marketing networks; irrigation; high-yielding varieties of agricultural crops; access to land resources; credits; physical infrastructure; clean water; basic sanitation; and investment in human capital.

Although The World Bank (1990) outlines a number of infrastructural development, the effectiveness of this is questionable. The issue is, which of the infrastructural development is given the highest priority. In a developing country local elites and politicians have the power to manipulate development projects suited to

their needs such as construction of highways. This overlooks important issues such as supplying clean water, providing basic sanitation and investment in human capital, and may not result in the ultimate objective of poverty reduction. Probably, a more appropriate approach is to allow a pattern of growth which provides the poor an opportunity to use their labour efficiently and have investment in human capital which improves the immediate well being of the poor and their capacity to take advantage of new opportunities.

(3) Social sector expenditure reforms

Social sector expenditure reforms attempt to protect the poor from short-term costs. Ribe and Carvalho (1990) argue that the beneficial long-term social impact of the adjustment programmes may be obtained in a number of ways: by maintaining or increasing expenditures on basic health and education, while overall public expenditures are cut; redirecting expenditures toward the poor mainly through better targeting of resources toward primary education and basic health; and improving the efficiency of social sector expenditures.

Although these policies are preferable, according to the International Institute for Labour Studies (1995), there is a need for policy interventions at various levels. For example, at the macro level, interventions are required to ensure adequate provisions are made for expenditures in education and health care services. At the meso level, policy inventions are required to ensure that high school fees do not prevent education for the poor. At the micro level, improved subsistence agricultural

production. These types of checks, at various levels, seem most appropriate and highly preferable as they tend to have a direct and quick impact on raising the social status of the poor.

(4) Labour market reforms

Labour market reforms are also seen as important instruments, where regulations (minimum wages, job security and social security) are intended to raise workers' welfare and security. Instead, they tend to raise labour costs and reduce employment in the formal sector. Hoevan (1991) argues that labour market flexibility could be increased by allowing temporary labour contracts and eliminating requirements for government authorization to dismiss employees. A more appropriate policy would be raising the wage rates. For example, Lal (1995), argues that the shape of the supply curve of rural labour at different wages is upward (at least for India, the country supposedly containing vast pools of surplus labour and not flat, as the surplus labour theory presupposes). Thus, for a given labour supply, increases in the demand for labour time, in both the industrial and the rural sectors, can be satisfied only by paying higher wages (Lal, 1995).

(5) Nutrition programmes

The difficult and often disastrous social issues facing many developing countries are the serious consequences for the health and nutrition of the poorest sections of the population, especially the children (Ribe and Carvalho, 1990).

Nutrition programmes, such as compensating for the losses in the purchasing power of poor households and protecting groups likely to suffer most - the urban poor, women and children - are essential. Such measures may include school meals, building kitchens, and distribution of milk and food supplements (Helleiner *et al.*, 1991). Correa (1970) argues that improvements in health and nutrition added 0.12-0.93 percent to the rate of economic growth in nine Latin American countries during 1950-62, while the findings of Wheeler (1982) indicate a significant impact on growth rates from increases in calorie intake and literacy rates.

This type of policy measure would be more applicable in a developed country and inappropriate in developing countries. Developing countries lack basic schooling infrastructure such as classrooms, text books, qualified teachers, classroom furniture, water and sanitary facilities. The immediate priority would be to improve the basic infrastructure then provide direct nutritional supplements. However, a more appropriate approach would be investment in agriculture, food preservation and conservation education within the school system. In addition, there are some inexpensive measures which governments can implement. For example, providing vitamin A capsules twice a year and giving doses of iodine once every three years would go a long way towards eliminating nutritional disorders (The World Bank, 1990). Such an approach seems ideal in raising nutritional levels.

(6) Redeployment and resettlement programmes

Redeployment and resettlement programmes can be a further policy

instrument. Ribe and Carvalho (1990) argue that projects need to be designed to compensate dismissed workers and provide severance payments, special credits and retraining. The resettlement project for moving newly unemployed urban workers toward agriculture is intended to provide food aid and extension services enabling retrenched workers to move into unutilized but arable fields.

Again such a policy may not be appropriate in a developing country case. The policy seems to be based on the assumption that there is an ample supply of arable land. This is not the case in developing countries. A number of developing countries are characterised as having a large population base with growing pressures on land and its resources. This, in most cases, may also be accompanied by land tenure problems where property rights are not clearly defined. Therefore, shifting urban unemployed to rural agriculture may not be effective, practically. However, one effective measure would be to foster the linkages of agriculture with the non-agriculture sector by increasing effective demand from agriculture for products of non-agricultural enterprises. In this way, dismissed workers could find productive opportunities for their labour.

(7) Foreign aid

The three most persistently influential arguments for foreign aid are the promotion of development, the relief of poverty, and the political and economic interests of the donors. Official Western aid is therefore envisaged as being simultaneously a moral, political and economic imperative. Since its inception in the

early postwar years, the central argument for foreign aid has been that without it developing countries could not progress at a tolerable rate, if at all (Bauer, 1995). Economic achievement depends on the personal, cultural, social, and political factors, that is, people's own faculties, motivations, their institutions and the policies of their rulers (Bauer, 1985). This line of argument derives from the hypothesis of the vicious circle of poverty and stagnation, a major theme of development economics since Second World War. Samuelson (1951) summarised that the poor nations cannot achieve higher standard of living because their production is so low that they can spare nothing for capital formation.

Some arguments are raised in favour and against foreign aid as an effective instrument of poverty reduction. While the orthodox approach to aid is that donors have motives such as political, strategic, commercial or humanitarian, they prefer financing physical capital accumulation. For example, in 1988 about 41 percent of external assistance was directed to middle-income countries largely for political reasons (The World Bank, 1990). As such the recipients of foreign aid are always governments and not the poor, destitute, or starving people.

Bauer (1995) argues that large scale development takes place in many parts of the world without foreign aid, and did so long before this policy was invented some forty years ago. Foreign aid encouraged the notion of the West as a single economic decision making entity, imposing its will in the developing counties but do not cooperate in setting market price, and foreign suppliers compete for business in the developing countries. Much of the third world progressed rapidly long before

foreign aid - witness South East Asia, West Africa, and Latin America while there are world societies that have not progressed much over the last hundred years (Baur, 1995). This lack of progress reflects factors that cannot be overcome by aid, and are indeed likely to be reinforced by it.

The main way in which effectiveness would be achieved is linking aid more directly to countries' overall policies generating income earning opportunities which effectively provide social services for the poor. Cardoso and Helwege (1992) argue that the basic needs approach to multilateral agencies in the 1970s helped to build irrigation systems, health clinics and basic education programmes. They further argue that these agencies should turn their attention back to their basic mandate, overcoming poverty. Bourguignon (1991) argues that given the higher productivity of capital during the adjustment period, it would be beneficial to borrow abroad at a rate of interest proportionately higher than the long-term rate of return to capital, claiming that part of the loan could optimally be used, directly or indirectly, for a fast and significant reduction in poverty without improving the adjustment potential of the economy.

In summary, the nature and extent of the impact of adjustment programmes on the poor has been hard to establish empirically. This is largely because of the difficulty in distinguishing the direct costs of adjustment from the costs of unfavourable exogenous shocks and inappropriate past policies. Nevertheless, the policies discussed in this section, as outlined by a number of studies, seems to follow a developed country approach. Not all of the policies discussed in this section are

appropriate within the context they are mentioned. However, the principal conclusion is that the most effective strategy for reducing poverty involves both the creation of income-earning opportunities for the poor, and the provision of social services that increase the capacity of the poor to respond to new opportunities.

4.4.5. External Financing Policies

Foreign borrowing to finance domestic investments is a key factor in developing countries because of the scarcity of capital. Therefore, IMF helps countries in designing adjustment programmes which take into account the issue of managing external finance. IMF advocates that borrowing should be at a sustainable level, that is, as long as the capital produces a return to cover the cost of borrowing (McDonald, 1982). However, it can be argued, that in practice, it is difficult to determine the sustainable level of borrowing for developing countries because of unavailability of information of terms, maturity and interest rate structures.

Moreover, a country's debt servicing capacity may deteriorate due to its unwise domestic policies and unfavourable effects of external environment. In response to this, Khan (1987) argues that the obvious, but not a very helpful, criterion is adjustment with the least possible loss of output, where imports should not be compressed to a point which causes an unnecessary loss of output and, to the extent that exports require imported inputs, exports.

Another possible measure is to recycle interest payments which allow a country to have the resources for growth without actual debt relief. Dornbusch (1989), citing Mexico, supports this measure by outlining a number of expected benefits: capital flight becomes suspended; it creates a stable and a prosperous business environment; the debtor country can resume a more balanced position with an emphasis on long-term investment and growth; it avoids debt relief and hence tax payers involvement on a large scale; and, by providing debtors with room for growth, there is an expectation of increased exports to debtor countries and a reduction in the current high level of creditor's imports.

Most discussion of capital flows to developing countries has focused on foreign borrowing, but some recent research has drawn attention to capital flowing the other way - "capital flight" - and the problems caused for developing countries (Dornbusch, 1985, and Khan and Ul Haque, 1985). Dornbusch (1985) contends that capital flight has increased gross foreign debt, eroded the tax base, and, to the extent that there was a net real transfer of resources from the countries, reduced investment and growth. Although there is some theoretical support for the notion that expected devaluations and negative interest rate differentials drive capital abroad, the effects of macroeconomic changes are seldom so straightforward.

The discussions above outline a variety of adjustment policies prescribed by the IMF for developing countries. Because not all empirical results are consistent with the theoretical arguments presented, this issue cannot be settled due to the inherent difficulty in establishing causality.

4.5 A REVIEW OF EMPIRICAL STUDIES OF THE EFFECTS OF IMF PROGRAMMES

A number of studies of IMF programmes have been undertaken periodically within the IMF and by critics outside the IMF. This section briefly reviews some of these studies, outlining their effects particularly on growth, the BOP and inflation.

Growth Effects

Using the before and after approach, Reichmann and Stillson (1978), Connors (1979), Killick (1984) and Pastor (1987) concluded that IMF programmes has no substantial effect on economic growth.[3] The control group approach adopted by Donovan (1982) shows that growth of real GDP fell by more than the average decline experienced by the non-oil producing developing countries in year on year, while, Gylfason (1987) showed no significant effect of IMF programmes on growth. Goldstein and Monteil (1986), on the other hand, found countries with IMF programmes demonstrating slower growth than non-programme countries while their modified control group estimation showed favourable outcomes on growth. The actual versus target approach utilised by Zulu and Nsouli (1985), for example, found in their study of African countries, that growth targets were only achieved in less than 20 percent of the countries with IMF programmes. The comparison of simulation

[3] The before and after approach, among others mentioned in this section are discussed more thoroughly in chapter five.

approach, as used for example by Khan and Knight (1981), showed output contracted sharply in the first year of the programmes, then temporarily rose before gradually rising over a period of several years. Khan and Knight (1985) extended this simulation analysis to a comparison of alternative policy packages and showing IMF policies were more favourable to growth in the long-run than the short-run. Nunnenkamp and Schweickert (1990) utilising the reduced form equation approach showed that short-term adjustment measures are not sufficient to restore economic growth in developing countries, and expansionary effects of real devaluation remain weak for countries with high inflation and volatile exchange rate policies. Doroodian (1993) used a similar approach to show that IMF policies do not have much impact on the level of economic activity of a country to which they are applied.

BOP Effects

Using the before and after approach, Reichmann and Stillson (1978) found no significant changes in the BOP in the majority of the cases in their study, while Connors (1979) showed no discernible effects of adjustment programmes on the current account deficit of the BOP. A deterioration in the BOP and the current account is shown by Killick (1984), while Pastor (1987) shows the IMF programmes led to significant improvements in the BOP. The control group approach adopted by Donovan (1982) shows improvement in BOP and the current account positions of programmes countries. Similar results were obtained by Gylfason (1987). Goldstein and Montiel (1986), on the other hand, found countries with IMF programmes

demonstrating weaker performance in the overall BOP than non-programmed countries. The actual verses target approach utilised by Reichmann (1978) for example, found that BOP targets were met or exceeded in nearly two-third of the programmed countries. The comparison of simulations approach by Khan and Knight (1985), using a combined package of demand-management and structural policies, shows that the demand-management package improved the BOP position.

Inflation Effects

Using the before and after approach, Connors (1979) shows no clear effects of adjustment programmes on inflation, while Killick (1984) shows a reduction in inflation in countries adopting adjustment programmes. Pastor (1987) shows IMF programmes had no effect on inflation. The control group approach adopted by Donovan (1982) shows that increases in inflation in programme countries were about half that of non-oil producing developing countries in one year comparisons, and fell to one third in the three year comparison. Gylfason (1987), using the same approach, shows inflation in programmed countries did not fall but remained approximately the same as the average rate of inflation. Goldstein and Montiel (1986), using a modified control-group estimator, found programmed countries with higher inflation. The actual verses target approach, utilised by Reichmann (1978), found inflation targets exceeded in over half the programmes. Similar results were obtained by Zulu and Nsouli (1985). The comparison of simulations approach by Khan and Knight (1985), using a combined package of demand management and structural policies, shows that

the demand management package improved the BOP position, but at a cost of higher inflation. Khan (1988) found no significant change in the rate of inflation, while Doroodian (1993) shows that IMF adjustment policies, in general, improved the rate of inflation in the developing countries.

4.6 CRITIQUE OF IMF POLICIES

Developing countries have implemented a variety of adjustment policies as discussed in the previous sections. In part, these policies are seen as failures, with many observers acknowledging that the developing world continues to suffer widespread unemployment, inflation, and BOP difficulties. As such, IMF is not seen as a helpful institution. The main issue damaging the relations of developing countries with the IMF is its view that external disequilibria are always a consequence of excess aggregate domestic demand caused by excessive credit expansion. Consequently, demand contraction through a credit restriction has always been the centrepiece of IMF sponsored adjustment programmes.

IMF is criticized for the adverse conditions that exist in many countries and it has developed a reputation as a repressive and growth-throttling institution. In particular, Krugman and Taylor (1978), and Taylor (1979), Girvan (1980), Diaz-Alejandro (1981), Foxley (1981), Dell (1982), Bacha (1983), contend that IMF is a recession-inducing growth-wrecking agent. According to Cooper (1993), the IMF has made two mistakes: in the early 1980s, it embarked upon a crusade against inflation,

and that it has come to stipulate national policy actions in great detail, being extensively intrusive in the domestic economy, rather than leaving each country to legitimately choose such policies itself through its own democratic political process.

The IMF has challenged these views with cross-country studies of actual effects of its programmes. These studies demonstrate mixed impacts on growth rates coupled with significant success in achieving its supposed goal of BOP improvements and inflation reduction (section 4.5). This section reviews the debate on IMF policies.

Critiques such as Cooper (1971), Krugman and Taylor (1978), Diaz-Alejandro (1981) and Van Wijnbergen (1986), the so-called structuralist in the literature, propose a number of criticisms. A typical situation, from a structuralist perspective, is where the economy is at less than full employment, the price level is high with BOP in deficit, there is low productivity in agriculture, there is a reliance on primary commodity exports, and there exists an underdeveloped financial system.

The first criticism concerns the IMF policy of little or no state intervention. The argument is that market forces are inherently imperfect stabilizers and, that, if left to themselves they will not be successful in restoring internal and external balance. Specifically, this means that prices, instead of being determined by supply and demand equilibrium in competitive markets, are the result of mark-up pricing behaviour by individual firms. IMF policies focus on free markets, while there are sufficient grounds to argue that market imperfections are inherent in real world conditions and that development policy must contend with them. Because of the

prevailing economic and social structures, there is no automatic market adjustment in these circumstances: wages can remain at their current level even in the presence of significant unemployment, prices need not fall and BOP deficits can persist. Structuralist advocate increased controls over markets to solve the structural problems inherent in inflation. They favour income policies to overcome sectoral complementarities and trade inelasticity and industrial policies to orient microeconomic investment and decisions in face of uncertainty. In addition, they propose capital controls, to surmount the decline in lending and increased debt service payments for external debt relief, and to eliminate unemployment and reduce government expenditure.

Another point to be noted is that the macroeconomic relationships of an economy are determined not by individual decisions but by a set of key forces that govern production, financing and other economic activity (Taylor, 1983). The economic and social structures include oligopolistic industries; institutionally determined wages; and poor articulated credit and transport systems preventing full employment, price stability and viable balance of payments. Therefore, starting with these structures, it can be said that the free operation of markets will only generate more unemployment, inflation and BOP difficulties. Therefore, markets are a problem and not a solution.

The second criticism concerns the way IMF advocates exchange rate depreciation as a way of correcting BOP deficit. From structuralist perspective such a policy is doomed to failure, lowering current account deficit and increasing

inflation and recession. However, this line of argument by structuralist is debateable. As discussed in section 3.3, devaluation is desirable as it has the expansionary effect of raising output and empirical evidence supports this effect too.

Further, according to Krugman and Taylor (1978) and Taylor (1979), BOP problems in the third world often arise from the characteristics of the development process itself. Using this insight, these critics argue that the deterioration in the current accounts of non oil-developing countries through the 1970s and 1980s was due entirely to factors beyond their control. This is in sharp contrast to the IMF view that payment problems in the third world are caused by expansionary financial policies associated by the large budgetary deficits and/or a complex of cost-push factors and expectations. As such, structuralist consider that the deficits are not primarily the result of countries misbehaving, but are both endemic to the development process and aggravated mainly by external events. Given this, developing countries should not be punished for deficits with monetary contraction and other measures embodied in the program.

Again, this line of argument by the structuralist is debatable. As discussed in section 3.2, deteriorating external condition were not solely responsible to deteriorating economic position of developing countries in 1970s and 1980s. It was a combination of external and internal events. In fact the chances of controlling domestic internal economic policies are much greater than controlling external events.

In addition, within the dependency paradigm, Frank (1967) argues that the

international capitalist system involves a drain of economic surplus from the third world (periphery) to the first world (core). Such a surplus drain through trade (unequal exchange), profit repatriation and other devices, ensures that the economy of the third world remains undeveloped for lack of excess to their own surplus. Since the IMF is a major institution of international capitalism, it is not surprising to dependency theorists that it acts to maintain foreign domination and so frustrating growth and autonomous development in the third world.

This line of argument is also debatable. For example, the drain of economic surplus takes place in developed countries where IMF's presence is much less. The severity of the drain on economic surplus is probably more visible in a developing country compared to a developed country. However, IMF is not acting as an aid to this drain of surplus. It is the domestic economic policies of member countries responsible for this; for example, allowing tax free status of multinationals which obviously results in significant levels of profit repatriation.

Finally, Payer (1974) argues that short-run stabilisation policies have negative consequences for growth since they open the economy and, thus, effectively destroy any basis that may have been carefully laid for autonomous development along import substitution industrialisation lines. IMF's outward orientation policies reinforce dependency by locking developing economies into the vagaries of the market core. Moreover, she argues, the IMF leads peripheral economies into a so-called debt trap. Since an agreement with the IMF can open the door to official and private sources of credit, this allows third world countries to survive the BOP crisis through either

increasing debts or auctioning of domestic assets to foreign investors. In the process, the nations become "aid junkies" - lurching from crisis to crisis with infusions of private and official credit (Payer, 1974). As a result, their economies fall increasingly under the control of multinational corporations, international banks, and core governments. The latter phenomenon maintains a surplus drain and so prevents development. Thus, in Payer's analysis, the IMF is seen as dampening growth potential and increasing dependency. In addition, its policies have helped create the debt problem it is now attempting to manage.

4.7 PROPOSED POLICY ALTERNATIVES

The alternatives are a more 'appropriate' approach such as those suggested by Taylor (1983, 1991), Fishlow (1985) and Lustig (1991), the so-called neo-structuralist. They agree with the old structuralist, such as Singer (1950), and Prebisch (1950, 1968), who contend that inflationary pressures are generated by structural bottlenecks and sectoral imbalances.

Monetarists overlook, and often dismiss, the essentially dynamic and political dimensions of the inflationary process, namely, its role as a social mechanism for defusing the distributional conflicts that arise when no economic group or social class is sufficiently powerful to impose its adjustment plan over any period of extended time. The neo-structuralist approach takes into account the supply side factors that contributes to generating inflationary pressures, but incorporating the distributional

struggle as an element to a full understanding of inflationary phenomenon. Supply bottlenecks include supply inelasticity and low productivity of the agricultural sector, deterioration in commodity terms of trade, regressive distribution of income and wealth, capital-intensive industrialisation generating high unemployment, lack of diversity in export structure, and inefficient tax systems. A number of alternatives are suggested.

Initially, expenditure-switching policies such as devaluation (designed to enhance the competitiveness of exports) and expenditure reducing policies such as indiscriminate cuts in government spending (designed to bring inflation under control) should not be applied simultaneously as is evident in many countries. Although such type of policy may allow some initial respite from inflationary pressures, it is only at the expense of a deep economic recession and of a steep fall in capital formation that eventually reignites inflation from the supply or cost side. Another possible outcome is that devaluation can turn out to be stagflationary rather than expansionary because of the negative impact on output from falling spending due to the devaluation induced reduction in the real income of the majority of the people (Taylor, 1983 and Lustig 1991).

Therefore, a sequential and gradualist approach becomes an immediate and pressing constraint on growth. In addition, controlled prices of fuel and foodstuffs should be gradually increased in order to avoid inflationary surges in the short-term, while minimizing the negative impact on real incomes. Further, credit conditions should not be too restrictive in order to prevent interest rates from rapidly increasing.

A second important alternative targets the productivity of the agricultural sector by introducing rational farming techniques that raise rural incomes and productivity. This increases both the supply of basic foodstuffs and the size of national markets. Closely allied to this are policies that take into account future growth based on relatively greater use of labour intensive operations in order to provide employment for the unemployed as well as those who will enter the labour force each year.

The final alternative is the approach advocated by Dornbusch (1981) who observes the possibility of less than full employment equilibrium and BOP deficits in the absence of government intervention, arguing that violating the fundamentals of markets will ultimately prevent the economy from reaching a sustainable full equilibrium. This position implies a kind of managed transition from a short-term structuralist world to a long-term neoclassical one, arguing that both excess aggregate demand, and high wages are sources of inflation, but lowering both would, in the short-term, introduce such high costs as to necessitate the creation of a breathing space through income policies and other government programmes. There is room for a discretionary role for individual decisions within microeconomic markets.

4.8 SUMMARY AND CONCLUSION

This chapter has provided a literature review and an evaluation of IMF adjustment programmes focusing on its objectives, loan conditionality, standard

policies, criticisms and some policy alternatives. From this review, some general conclusions can be drawn.

The IMF is an extremely useful institution for countries in BOP difficulty and, with proper guidance, its lending may ease the pain of adjustment. IMF policies are directed primarily at the management of aggregate demand and supply, theoretically providing a guide only to the basic equilibrium relationships. However, measures incorporating the social aspects may also facilitate growth and development.

Second, the discussion of the adjustment programmes, the neglect of social, political and economic characteristics of developing countries seems to raise doubts about such orthodox policies advocated by the IMF. The fundamental part of the objective of adjustment ought to take account of the preferences of people in a country and the impact on them of the proposed programmes. This aspect seems to be often ignored when developing countries seek foreign loans to correct an external imbalance. Moreover, domestic policies reflecting national goals are often distorted by taking into account variables deemed important by foreign institutions to allow access to the funds.

While the empirical arguments show that some countries have succeeded in combining adjustment, growth and social progress others have not. The lesson from these successful countries indicates the need for an appropriate combination of policies.

The advances in the formulation and testing of empirical models relevant for the developing countries makes it possible, in principle at least, to move towards an optimal mix of policies. However, this technology, while far beyond that available in the 1950s and 1960s, can provide only very general guidelines. A prescription of a mixed set of policies may require detailed theoretical and empirical knowledge of the relationship between policies and objectives. This would not, in itself, be enough, since the ways in which policies are combined may depend on several factors such as relative weights assigned to programme objectives, initial conditions, the period over which adjustment is to be achieved, and characteristics of the country in question.

Finally, programmes will still have to rely on a great deal of judgement about the ultimate consequences of policy options, the period of time over which these effects occur, and the proper mix of policies to achieve the desired outcomes. This also suggests that credible measures in a sequential and gradual fashion are important. On the issue of how far IMF achieves its desired objectives, the debate continues. Empirical evidence available support both the desired and the undesired effects. However, Khan (1990) notes that one would be hard pressed to extract from existing studies strong inferences about the effects of IMF programmes on macroeconomic targets. In view of the review presented here, the next chapter proceeds with an econometric investigation of how far IMF policies achieved their desired objectives in Fiji, PNG, the Solomon Islands and Western Samoa.

CHAPTER 5

AN ECONOMETRIC ANALYSIS OF IMF INSPIRED POLICIES

5.1 INTRODUCTION

The purpose of this chapter is to formulate and estimate an econometric model and generate estimates for a set of parameters that are considered important adjustment instruments on a region-country-specific (four countries in the South Pacific region) basis. The intent is to use an empirical region-country-specific analysis of the data over the period 1980-92 showing how far IMF inspired policies produce their stated objectives of a viable balance of payments position, an environment of price stability and a sustainable rate of economic growth. The basic purpose of the model is to examine the relationship between IMF inspired objective variables and instrumental tools through an econometric analysis. The effects of a number of adjustment policies on the objective variable are determined from the values of estimated coefficients. The empirical results are then discussed within the confines of the model.

It should be mentioned, at the outset, that the methodology adopted in model

formulation and estimation is unique compared to existing empirical work on IMF inspired policies.

Initially, existing estimation procedures for empirical work on IMF inspired policies use pooled cross-sectional data for a number of countries from different or the same regions. The validity of such type of empirical results is questionable on the grounds that there is variation in economic, social and political parameters from country to country and region to region (see section 5.6). Thus, the empirical methodology adopted here uses a region-country-specific approach, where a number of macroeconomic parameters are analyzed on a country-by-country basis in a single region.

Further, the existing approaches to model estimation are questionable and heavily criticised in the literature on the grounds of essential methodological shortcomings (see section 5.2). Therefore, given their limitations, this study adopts a reduced form equation approach and utilises a region-country-specific approach to explain the effects of IMF inspired policies.

Existing studies make strong policy recommendations based on their empirical results. However, these empirical results are again questionable on the grounds that the models generating the results are not an "adequate" representation of the economic phenomenon. Economic policy formulation and the development of economic theory both rely, ultimately, upon empirical analysis for their direction and sustenance. Recent contributions from econometric theory suggest that the quality of

the information obtained from applied econometric research can be considerably improved by more systematic diagnostic testing of empirical models. This would help identify both strengths and weaknesses of the model. Though fundamental economic theory and good knowledge of data are primary ingredients of applied economic research, diagnostic tests are an important adjunct to existing methodology. This study, therefore, incorporates some of the features of diagnostic model testing.

Finally, most economic time series variables of interest exhibit stochastic non-stationarities. Regressing one trended variable on another could lead to the erroneous inference of a significant relationship where none exists, a problem Granger and Newbold (1974) refer to as *spurious regression* problem. Therefore, the approach taken in this study is to establish the time series properties of the data before tests of economic relationships are conducted.

This study takes growth in real gross domestic product, in real balance of payments and the rate of inflation as objective variables and applies a reduced form equation method in order to assess the effects of policies inspired by the IMF in Fiji, PNG, the Solomon Islands and Western Samoa. Chapter two established that these countries went through economic crises constraining growth and development. IMF responded with adjustment policies supported by stand-by arrangements and compensatory financing. It is now appropriate to analyze how far IMF inspired policies produce their stated objectives.

The organisation of this chapter is as follows. The next section presents a

review of the existing approaches to model estimation. Section 5.3 develops an econometric model appropriate to the developing South Pacific countries, while section 5.4 discusses the theoretical framework and the hypothesis to be tested. Section 5.5 describes the data used in the analysis while section 5.6 discusses the estimation procedure. Section 5.7 presents a discussion of the empirical results followed by a summary and conclusion in section 5.8.

5.2 A REVIEW OF EXISTING APPROACHES TO MODEL ESTIMATION

The continuing debate over the benefits and costs of IMF inspired policies has led to the development of considerable empirical literature on IMF adjustment programmes together with their quantitative scrutiny. So far, five main approaches have been proposed and used to analyze the effects of adjustment programmes: *before-after* approach; *control-group* approach; *actual-versus-target* approach; *macro-simulation* approach; and the *generalised evaluation* approach. Comprehensive reviews of these approaches are provided by Goldstein and Monteil (1986), Khan (1988), Harrigan and Mosley (1991) and Agenor (1991). This section provides a brief review of these approaches.

The *before-after* approach examines the difference between macroeconomic performance under, or after, a programme and prior to a programme. Some studies utilising this approach include Diaz-Alejandro (1965), Cooper (1971), Reichmann and Stillson (1978), Conners (1979), Kelly (1982), Killick (1984), Zulu and Nsouli (1985)

and Pastor (1987). Khan (1988) argues that the advantage of this approach is that it is easy to employ and is seemingly objective. However, Khan (1988) and Harrigan and Mosley (1991) argue the limitations of this approach on the grounds that it is based on strict *ceteris paribus* assumptions, not yielding an estimate of the independent effect of programmes on macroeconomic outcomes whenever the non-programme determinants of these outcomes are changing between pre-programme periods and the programme period. As a result such shortcomings of this approach make it a poor estimator of the counterfactual, defined as the macroeconomic performance that would have taken place in the absence of such a programme.

The *control-group* approach compares the difference between macroeconomic performance in countries with IMF programmes and in a control group of non-programme countries. This approach overcomes the inability of the *before-after* approach to distinguish between programme and non-programme determinants of macroeconomic outcomes. Some studies utilising this approach include Donovan (1982), Gylfason (1987) and Edwards (1989). The limitations are that programme countries are not randomly selected (not surprising since a requirement of IMF support is that countries should have a BOP need), which could result in biased estimate of programme effects. This bias is due to the fact that under non-random selection, the control group estimate attributes differences in outcomes exclusively to programme status, when, in fact, the different starting position is a cause of difference in subsequent performance between the two groups.

The *actual-versus-target* approach compares actual outcomes for certain

macroeconomic variable to the targets for such variables written into IMF programmes. They give an indication of the extent to which programmes achieve intended results. Some studies utilising this approach include Reichmann (1978), Beveridge and Kelly (1980) and Zulu and Nsouli (1985). Khan (1988) argues this approach tells little about how the country's macroeconomic performance was affected by IMF programmes. In addition, Killick *et al.* (1992) argue its shortcomings, on the basis that discrepancies between targets and actualities may be a result of poorly performing models or unrealistic targeting rather than intrinsically unsatisfactory economic results.

The *macro-simulation* approach utilises simulations of models to infer the hypothetical performance of IMF type policies or policy packages, and alternative policy packages. Studies utilising this approach include Khan and Knight (1981), Khan and Knight (1985) and Branson (1986). Killick *et al.* (1992) argue that the usefulness of this approach depends on model specification and the limitation is that results reflect model specification not reality.

The *generalised evaluation* approach involves postulating a model in which various policy and other explanatory variables are incorporated in regression equations which take IMF objective variables, such as the performance of the BOP and inflation and economic growth, as dependent variables in which a dummy variable is also included to catch the influence of any IMF programme. The equations are then tested using cross-country data. This approach offers a direct test of programme impact, although its inclusion simply as a dummy means that it cannot

provide refined information about programme effects. Here again, the method is as good, but no better than the model employed. Some recent studies utilise the generalised evaluation approach, for example Khan (1988) and Doroodian (1993).

Although this review outlines a number of approaches to estimation of IMF adjustment programmes, each approach has its own limitations. With regard to methodological pitfalls, Schadler (1995) contends that there is no one correct way to carry out a review of IMF supported programmes. Therefore, the next section develops an econometric model utilising a reduced form equation approach.

5.3 DEVELOPMENT OF AN ECONOMETRIC MODEL

To assess the appropriateness of policies embodied in IMF conditionality, as a means of achieving a viable balance of payments position in an environment of price stability and a sustainable rate of economic growth, a model is proposed here that stresses the impact of a number of instrumental variables on the behaviour of IMF's objective variable. The model is developed within the framework of the generalised evaluation approach.

It is postulated that the set of IMF inspired objective variables j, for country i is determined according to:

$$Y_{ij} = \Phi_{0i} + \Phi_1 X_i + \upsilon_i \qquad (1)$$

where, Y_{ij} is one of the objective variables, X_i is a vector of macroeconomic policy instruments, and υ_i is a random error term assumed to be independently and identically distributed with an expected mean value of zero. Two issues need to be addressed at this stage of model formulation.

As discussed in chapter two, is the substantial impact of a combination of external and internal shocks that acted against the developing South Pacific countries. This included substantial fluctuations in the prices of primary goods, sharp increases in prices of oil and oil products, increases in interest rates on foreign debt, fragile export markets and unfavourable weather conditions resulting mainly from cyclones and drought. It is essential to understand these effects on the objective variables. Therefore, an additional variable, external disturbance (*ED)*, is added to equation (1) which quantifies the impact of these shocks associated with the declining terms of trade and rising real interest rates on growth rates of real GDP and BOP, hence equation (2):

$$Y_{ij} = \Phi_{0i} + \Phi_1 X_i + \Phi_2 ED_i + \upsilon_i \qquad (2)$$

where, parameter vectors Φ_{0i}, Φ_{1i}, and Φ_{2i} in equation (2) are assumed, for simplicity, to be uniform across countries.

Further, in countries with IMF inspired policies, the policies that would have

prevailed in the absence of IMF inspired policies cannot be observed. This has to be modelled. Following the approach of The World Bank (1990) and Faini *et al.* (1991), this issue is considered with a policy reaction function, which assumes that changes in policy (ΔX_i) can be predicted by the values in the performance variables in the preceding period. Moreover, this assumes that policy measures in one period react to deviations of performance from constant objective variables in the previous period. This relationship is explained by the reaction function expressed in equation (3):

$$\Delta X_i = \delta_{0i} - \delta_{ii} Y_{i-1} + \zeta_{ij} \qquad (3)$$

which is used to express ΔX_i as a function of observable lagged values of objective variables, Y_{i-1}. By subtracting Y_{i-1} from both sides of equation (1), and substituting ΔX_i, the transposition of equation (3) into equation (2) gives the following general equation for estimation:

$$Y_{ij} = \Phi_{0i} + \Phi_1 Y_{ij-1} + \Phi_2 X_i + \Phi_3 ED_i + \upsilon_i \qquad (4)$$

Equation (4) is now reduced to a simple formulation to examine the effects of adjustment programmes on the three objective variables: growth rate in the GDP, growth rate in the BOP and the rate of inflation, as follows:

$$GDP_{ijt} = \alpha_0 + \alpha_1 GDP_{ijt-1} + \alpha_2 ER_{it} + \alpha_3 FP_{it} + \alpha_4 I_{it} +$$

$$\alpha_5 DC_{it} + \alpha_6 ED_{it} + \upsilon_{it} \qquad (5)$$

$$BOP_{ijt} = \beta_0 + \beta_1 BOP_{ijt-1} + \beta_2 ER_{it} + \beta_3 FP_{it} + \beta_4 I_{it} +$$

$$\beta_5 DC_{it} + \beta_6 ED_{it} + \upsilon_{it} \qquad (6)$$

$$IFN_{ijt} = \gamma_0 + \gamma_1 IFN_{ijt-1} + \gamma_2 ER_{it} + \gamma_3 FP_{it} + \gamma_4 I_{it} +$$

$$\gamma_5 DC_{it} + \upsilon_{it} \qquad (7)$$

where, *GDP* is the real gross domestic product; *BOP* is the real balance of payments; *IFN* is the rate of inflation; *ER* is the real exchange rate; *FP* is fiscal policy; *I* is the real domestic interest rate; *DC* is the real domestic credit; and *ED* is the external disturbance variable. Equations (5), (6) and (7) will henceforth be referred to as the growth, balance of payments and inflation models, respectively. Variable measures are discussed in section 5.5. The next section discusses the theoretical framework and the underlying hypothesis behind each variable.

5.4 THEORETICAL FRAMEWORK AND HYPOTHESIS TO BE TESTED

Adjustment programmes are usually signalled by excess demand pressure and so involve some element of demand restraint. The primary objective of demand side

so involve some element of demand restraint. The primary objective of demand side policies is to influence the aggregate level of growth of nominal domestic demand. Such policies include a whole range of fiscal and monetary measures.

Therefore, this section considers a variety of hypothesis suggesting measurable variables included in the right hand side of equations 5, 6 and 7. A set of hypotheses, drawn from the literature, have the characteristics of being macroeconomic in nature yielding testable implications.

Empirical analysis of macroeconomic models, based on monetarist or Keynesian propositions using statistical techniques, has increased over the years.[1] This study attempts to test some of the hypotheses based on theoretical contributions from both the monetarist and Keynesian schools. The theoretical framework and underlying hypothesis, discussed comprehensively in chapter four, is briefly drawn here.

Lagged Dependent Variable (GDP_{t-1}, BOP_{t-1} and IFN_{t-1})

The lagged dependent variables (GDP_{t-1}, BOP_{t-1} *and* IFN_{t-1}) in equations 5, 6 and 7 are modelled explicitly to account for the effects of the performance indicator

[1] Most studies involving macroeconomic models are based on the theoretical contributions of works such as those of Friedman and Schwarz (1963), Cagan (1965), Diaz-Alejandro (1965), Lucas (1972), Sargent and Wallace (1973), Khan (1976), Krugman and Taylor (1978), Aghevli and Khan (1980), Khan and Knight (1981) and Dornbusch (1988) as discussed in chapter four.

from the previous year on those of the current year, hypothesizing that an improvement in the objective variable in the previous year is likely to positively trigger objective variables in the following period. Therefore, the variables GDP_{t-1}, BOP_{t-1} *and* IFN_{t-1} are expected to have positive coefficients.

Exchange Rate (ER)

Devaluation of the exchange rate as an adjustment tool, affects economic growth and the BOP through its impact on the current account, and is considered to be an expenditure-reducing (contractionary), and expenditure-switching (expansionary) policy. On the growth side, the orthodox view, such as that of Guitan (1976) and Dornbusch (1988), is that devaluation will result in expenditure-switching, increased production of tradeable goods, higher exports and an improvement in the external position of the country in question. As it will, therefore, have a positive effect on output growth, it is expansionary. The structuralist such as Diaz-Alejandro (1965), Cooper (1971) and Krugman and Taylor (1978) argue that devaluation may have a deflationary effect on the aggregate real output of the economy and so is contractionary. On the BOP side, Khan and Knight (1981) have extensively discussed the demand-supply effects of devaluation. Devaluation is hypothesised as having a stimulative impact on aggregate supply. Therefore, both aggregate demand and aggregate supply effects of devaluation work toward reducing excess demand in the economy and current account deficits.

Devaluation plays a positive role in BOP adjustment through its expenditure-switching effects and increased production of tradeables.[2] This is true only if the Marshall-Lerner conditions are satisfied, that is, absolute sum of the import and export demand elasticities exceeds one. A contractionary effect on the exchange rate adjustment on BOP is also possible.[3] Khan and Knight (1982) argue that demand contraction, induced by the exchange rate devaluation, would succeed in adjusting the BOP while maintaining the economy in full operation.[4]

With regard to the inflation model, Guitan (1976), Khan and Knight (1985), and Dornbusch (1988) argue that devaluation of the exchange rate, as an adjustment tool, affects the domestic absorption and domestic supply. The supply-side effect of devaluation is a rise in domestically produced output of traded goods, and a reduction in the output of non-traded goods, because, *ceteris paribus*, devaluation lowers the real supply of factor services in the domestic sector relative to the external sector. As a result, the reduction in the supply of non- traded goods, together with the increase in their demand, has the combined effect of raising the price level and lowering the quantity, hence an increase in inflation. The demand-side effect of devaluation is opposite to that of the supply-side effect.

To measure this effect, variable *ER* is included in the regression analysis. If

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[2] This is the orthodox view argued by Guitan (1976) and Dornbusch (1988).

[3] The is the structuralist view argued by Diaz-Alejandro (1965), Cooper (1971) and Krugman and Taylor (1978).

[4] Trivedi (1992) provides a comprehensive review of how this effect operates.

devaluation is contractionary, the coefficient of *ER* will be negative indicating a deterioration in aggregate output and BOP. On the other hand, if devaluation is expansionary the estimated coefficient will be positive, indicating an improvement in aggregate output and BOP. For the inflation model, the coefficient of *ER* is expected to be negative. A positive coefficient of *ER* would indicate that devaluation of domestic currency is inflationary.

Fiscal Policy (FP)

The fiscal structure of adjustment policies is aimed to end an emerging BOP crisis, strengthen public sector savings and/or reduce deficits. Policies reducing the domestically financed overall government deficit increase private capital inflows will, *ceteris paribus*, have beneficial effects on the overall growth, BOP and inflation. Ultimately, all adjustment policies amount to reducing government primary budget deficit by reducing government consumption and raising profit taxes. With regard to inflation, adjustment policies amount to reducing government primary budget deficit by reducing government consumption and bringing inflation under control. Keynesians argue that inflation could be controlled through reductions in budget deficits. If this is correct, countries with a larger growth of government spending, as a proportion of output, should experience lower economic growth, a worsening BOP position and inflation, than those with a smaller one. As such, the coefficient of *FP*, should positively indicate a positive effect of restrictive fiscal policies on economic growth and BOP. For the inflation model, the coefficient of *FP*, should be negative

indicating that, as government consumption decreases, the rate of inflation would decrease.

Interest Rate (I)

A common feature of the economic policies in developing countries is the ceiling placed on interest rates (*I*) usually below equilibrium. In Frenkel and Johnson's (1976) monetary approach to BOP, interest rates are the transmission mechanism between monetary policy and aggregate demand. An increase in money supply lowers market interest rates stimulating those components of demand that are sensitive to interest rates. Adjustment programmes involving the removal of ceilings on domestic interest rates can indeed increase output and improve the BOP position, creating a climate of confidence in the economy. Variable *I* explains this effect with an expected positive coefficient on the economic growth and BOP model.

Although targeting domestic interest rates is not a common adjustment policy in controlling inflation, it does have an influential role. McKinnon (1973) argues that interest rate policies influence not only short-run changes in spending, inflation, and external finance, but also the longer-term accumulation of financial assets and the level and composition of investment. Khan and Knight (1985) argue that in many developing countries the financial system is tightly controlled by government, and ceilings are placed on nominal interest rates. Adjustment programmes involving the removal of ceilings to raise domestic interest rates closer to equilibrium rate, would,

in turn, reduce inflation by stimulating domestic savings and capital inflows.

Variable *I* explains this effect with an expected positive coefficient on the economic growth and BOP model. In the case of the inflation model, the coefficient of *I* is expected to be negative.

Domestic Credit (DC)

Virtually all IMF programmes involve restrictive monetary policies, especially a ceiling on the rate of domestic credit expansion.

With regard to economic growth, Lucas (1972) and Sargent and Wallace (1973) argue that anticipated changes in money supply have no effect on real economic variables, while Fischer (1977) and Phelps and Taylor (1977) argue that anticipated monetary policy has a strong impact on real economic variables in the short-run. Empirical findings support both views. According to Khan (1985), a reduction in domestic credit or supply of money is a contractionary monetary policy.

Polak (1957) suggests that, in an open economy with a given level of real income, any excessive monetary creation, as a result of domestic credit expansion activities of the banking system, will generate a BOP deficit.

The IMF position, in terms of inflation theory, links domestic price level to

money supply. As domestic credit contraction is designed to have the beneficial effect of reducing inflation, an increase in domestic credit would fuel domestic inflation. Variable *DC* is included in the growth model and inflation with an expected positive coefficient. Variable *DC* analyzes this effect on the BOP model with an expected negative coefficient, indicating a restrictive monetary policy.

External Disturbance (ED)

Disturbance, originating in the rest of the world (external shocks), and domestic aggregate supply and demand disturbances (internal shocks), contribute towards short-term movements of BOP. Increasingly, research focuses on quantitatively assessing the relative importance of various external economic disturbances. For economic growth, Doroodian (1993) argues whether the coefficient of variable *ED* will be positive cannot be determined *a priori,* while Barro (1977) argues that the sign must be positive. Variable *ED* analyses the effect with an expected positive coefficient. An external disturbance variable is incorporated into the BOP model with an expected positive coefficient.

5.5 DATA

All data are quarterly, covering the period 1980-92 (appendices 9.1-9.4). Although all adjustment programmes were extended at various intervals during this period, the impact of each programme is assumed to have a continued effect for, at

least, over the next three years from the year of implementation. Data are taken from IMF's, *International Financial Statistics' Yearbook*, The World Bank's *World Tables*, and the Department of Statistics' publications in the respective countries. The raw data is presented in Appendix 9.

GDP is the growth rate in the real gross domestic product. Since quarterly *GDP* were not available for all countries, a quarterly data was generated econometrically using annual *GDP* data, and based on a linear function $E = aE_i + bE_{ii} + cE_{iii} + dE_{iv}$ without a constant. The generated quarterly data for E, say $\hat{E}$, were restricted such that $\hat{E}_i + \hat{E}_{ii} + \hat{E}_{iii} + \hat{E}_{iv} = E$, where, E is the actual observed data. *GDP* is in the first differences for all countries, a differencing aspect established from the results of the unit root test discussed in sections 5.6 and 5.7.1.

BOP is the growth rate in real balance of payments. *BOP* is in the first difference for Fiji and the Solomon Islands and second difference for PNG while no differencing was required for Western Samoa.

IFN is the rate of inflation measured by a change in the consumer price index. *IFN* did not require any differencing for Fiji, is in first difference for PNG, second difference for the Solomon Islands and third difference for Western Samoa. In Western Samoa, variable *IFN* fails the unit root test after third difference and so no further differencing was done because of the danger of over differencing.

ER, the US/domestic currency, adjusted for the rate of inflation, is in first

difference for Fiji and the Solomon Islands and second difference for PNG and Western Samoa.

FP is the fiscal policy variable proxied by revenues less expenditure as a ratio of GDP, adjusted for the rate of inflation. *FP* is in first difference for Fiji and the Solomon Islands and second difference for PNG. Data for *FP* were not available for Western Samoa.

I is the interest rate, measured as the percentage change in domestic interest rate (lending), adjusted for the rate of inflation, and *I* is in first difference for Fiji and PNG and second differences for Western Samoa. Data for *I* were not available for the Solomon Islands.

DC is domestic credit, measured as the percentage change in domestic credit, adjusted for the rate of inflation. *DC* is in the first difference for Fiji and the Solomon Islands, second difference for Western Samoa but did not require any differencing in the case of PNG.

ED is the external disturbance proxied by the percentage change in terms of trade, adjusted for the rate of inflation. The World Bank (1992) measures the external disturbance by constructing a single index of total shock, which is the sum of interest rate and the terms of trade shock. The assumption here, is the interest rates and terms of trade are the only important shocks which affect growth performance. It can be argued that there is no effective explanation for combining two entirely different

quantities into a single index. Kakwani (1995) criticises this approach on the grounds that while equal weights are given to each of these shocks, there is no *a priori* reason for assuming that the two components have exactly the same effect on growth performance. *ED* is in the first difference for PNG, second difference for Fiji, third difference for the Solomon Islands but did not require any differencing in case of Western Samoa. The next section outlines the estimation procedure for equations 5, 6 and 7.

5.6 ESTIMATION PROCEDURE

A number of empirical studies on IMF adjustment programmes have two things in common: investigations are based on pooled cross-sectional data from various countries for different time periods and countries from different regions. These studies can be questioned on the grounds that macroeconomic parameters differ from country to country and region to region, with wide variations in economic, social and political structures. Gupta (1988) argues that, due to fundamental differences between the macroeconomic variables of growth in different types of economies, pooling across a broad sample of countries is inappropriate. It may seem, to the outsider, that the countries examined in this study are similar in economic, social, and political structure. This is not the case. The economic and social structure of Fiji and PNG, for example, differ from each other and from those of the Solomon Islands and Western Samoa.

Further, there are essential methodological shortcomings in existing empirical approaches, reviewed in section 5.2: no single model incorporates the whole range of policy measures (Khan, 1988); most studies available, to date, use imputed parameter values, the reliability of which are questionable (Agenor, 1991); and the literature on IMF programme effects are dominated by the counterfactual problems (Killick *et al.*, 1992).

Given these limitations, the application of a reduced form equation and utilising a region-country-specific approach, are considered more appropriate here in order to explain the effect of IMF adjustment programmes on growth of GDP, BOP and inflation.[5] The estimation procedure, in this study, also takes a different approach compared to most previous studies on the subject, incorporating some of the recent advances in applied econometric techniques. Two essential aspects of these advances include testing the order of integration and subjecting the models to a range of diagnostic tests. The next two sections address these issues.

5.6.1. Stationarity and Cointegration

The models developed in this study are macroeconomic in nature. Nelson and Plosser (1982) suggest that most macroeconomic time series have a unit root (a stochastic trend), meaning that the movements in these variables result from the

[5] Some studies adopting a *reduced form equation* approach, while utilising cross-sectional data, include Edwards (1965, 1989); Khan (1988), Nunnenkamp and Schweickert (1990) and Doroodian (1993).

accumulation of shocks, each of which has large permanent effects. Therefore, the concept of stationarity and cointegration is potentially important in assessing the statistical validity of equations 5, 6 and 7.

The first stage in testing for cointegration between a set of variables is to determine the order of integration of individual time series. The second stage involves directly testing for cointegration. The following sections discuss these two stages.

Unit Root Tests

This study uses time-series data to estimate equations 5, 6 and 7. The sample period, with countries in parentheses, are : 1980:1-1992:4 (Fiji); 1980:1-1992:2 (PNG); 1980:2-1990:1 (Western Samoa); and 1980:1 - 1990:4 (the Solomon Islands).

This set of data is, in fact, a family of real value random variables over time, referred to in econometric literature as the *stochastic process.* The stochastic process is said to be stationary if the joint and conditional probability distributions of the process are unchanged if displaced in time (Spanos, 1986). This implies that the mean and the variance of the process are constant over time, while the value of the covariance between two periods depends only on the gap between the periods, and not to actual time at which this covariance is considered (Charemza and Deadman, 1992). If one or more of these conditions are not fulfilled, the process is non-stationary.

Non-stationarity of time series is regarded as a problem in econometric analysis. Phillips (1988) contends that, in general, the statistical properties of regression analysis, using non-stationary time series, are dubious and, if series are non-stationary, one is likely to finish up with a model showing promising diagnostic statistics even in the case where there is no sense in the regression analysis. Therefore, regression analysis makes sense only for data which are not subject to a trend. Since all economic time series data contain trends, it follows that these have to be *detrended* before any regression analysis is performed. Series *detrending* is obtained by using first differences. In this study, data series contain a trend of the type:

$$y_t = y_{t-s} + \varepsilon_t \qquad (11)$$

where, the *detrended* variable is

$$\Delta y_t = y_t - y_{t-s} + \varepsilon_t \qquad (12)$$

with Δy_t is stationary. The operator *t-s* is applied rather than *t-1* because the data is quarterly, so *s=4*. It is essential to carry out the appropriate tests to ensure all data are stationary, to avoid spurious regression results. Dickey and Fuller (1979) propose the so called *unit root test*, shown as

$$\Delta y_t = \delta . y_{t-s} + \varepsilon_t \qquad (13)$$

If ε_t is autocorrelated in equation (10), Ordinary Least Squares (OLS) estimates are not efficient. To overcome this limitation, Dickey and Fuller (1981) proposes the

Augmented Dickey-Fuller (ADF) test. The ADF involves using a lagged left-hand side variable as additional explanatory variables to correct autocorrelation. The ADF equation is now

$$\Delta y_t = \delta . y_{t-s} + \sum_{i=1}^{k} \delta_i \Delta y_{t-s} + \varepsilon_t \qquad (14)$$

The ADF test involves regressing the first difference of a series on its once lagged level and lagged first differences. The *t-statistic* of the coefficient on the lagged level has to be compared to the Dickey-Fuller's (1979) tabulated critical values to test the null hypothesis of a unit root. The Dickey and Fuller (1979) test of stationarity was first conducted on all variables, in levels, the results of which are discussed in section 5.7.1

Cointegration

The cointegration testing procedure introduced by Engle and Granger (1987) is extended by Johansen (1988) and Johansen and Juselius (1990) from bivariate to multivariate analysis. According to Engle and Granger (1987), if each element of a vector of time series x_t first achieves stationarity after differencing, but a linear combination $\alpha' x_t$ is already stationary, the time series x_t are said to be cointegrated with cointegrating vector α. In other words, the components of vector X_t is said to be cointegrated of order *d,b* denoted $X_t \sim CI(d,b)$ if: (i) all components of X_t are *I(d)*

and (ii) there exists a vector $\alpha(\neq 0)$ so that $Z_t = \alpha' X_t \sim I(d-b)$, $b > 0$. The vector α is called the cointegrating vector.

The cointegrating vector for a given number of variables can be tested using the Johansen-Juselius (1990) multivariate cointegration test. This involves a maximum likelihood estimation procedure that provides estimates of cointegrating vectors for a given number of variables. This test is, however, preceded by a test of non-stationarity for the individual time series variables in the model as discussed in the previous section.

The procedure of analysis here is to implement the Johansen (1988) maximum likelihood approach to the estimation of the number of linearly independent cointegrating vectors for a vector autoregressive process, (i) X_t *on* $\Delta X_{t-1}, \ldots, \Delta X_{t-p+1}$, (ii) regressing X_{t-p} on the same set of regressors and (iii) performing a canonical correlation analysis of the residuals of these two regressions. The results of the cointegration test are discussed in section 5.7.2.

5.6.2 Diagnostic Test

Diagnostic testing in applied econometrics is concerned with establishing whether an estimated model is an adequate description of an economic phenomena. When no superior model is available, the tests can be used to help temper the reliance placed on the model. The issue is to subject the estimated model to a large

number of diagnostic statistical tests at conventional levels of statistical significance, and, if it passes all these tests, it is an adequate model.

Beggs (1988) notes that the high incidence of poor empirical results finding their way into public policy debate do a great deal of harm to the structure of the economics profession. He contends that the profession will be well served if it can have greater confidence in the reliability of econometric results.

An attempt to formalise the diagnostic testing approach in a coherent framework was made by Hendry and Richard (H-R) (1982, 1983), Gilbert (1986), Hendry (1987), and Harvey (1991). These authors have extensively elaborated on design, selection and quality control aspects of econometric models. A number of design, selection and quality evaluation criteria proposed by Hendry and Richard (1982 and 1983) can be interpreted as model selection criteria. Following the approach of Hendry and Richard (1982, 1983), Gilbert (1986) and Hendry (1987), this study incorporates diagnostic model testing, the results of this are discussed in section 5.7.3.

5.7 EMPIRICAL RESULTS

The models are linear in both parameters and variables and estimated using OLS. The SHAZAM econometrics package was used.

5.7.1 Results of Unit Root Tests

Tests for unit root, in their levels, are reported in Table 16.

Table 16. *Unit Root Tests*

Country	Variables							
	GDP	*BOP*	*INF*	*ER*	*FP*	*DC*	*I*	*ED*
Level								
Fiji	-2.77	-3.68	-5.98	-1.37	-3.11	-4.24	-4.17	-3.13
PNG	-2.96	-3.07	-3.83	-2.83	-1.49	-4.38	-3.35	-3.85
W/Samoa	-3.91	-3.25	-2.29	-2.82	-	-5.85	-4.39	-6.08
Solomon Is.	-3.57	-3.08	-8.16	-2.59	-2.39	-1.87	-	-3.81
Difference								
Fiji	-6.29	-4.77	-4.65	-7.13	-5.04	-6.83	-4.40	-6.30
PNG	-5.29	-4.83	-4.52	-5.91	-5.02	-3.29	-5.65	-4.56
W/Samoa	-7.58	-4.34	-4.45	-6.01	-	-2.01	-6.83	-8.70
Solomon Is.	-4.51	-4.47	-3.65	-4.94	-7.22	4.51	-	-5.29
Difference Lag Order (k)								
Fiji	4	4	1	4	4	2	7	7
PNG	3	5	4	4	6	2	5	4
W/Samoa	3	5	5	0	-	4	4	2
Solomon Is.	5	5	4	4	4	6	-	6

Dickey-Fuller critical value for n=50 is -4.81 at the 1 percent level; -4.36 at the 5 percent level and -3.70 at the 10 percent level. The appropriate order of the autoregression, in practice, is rarely known. In this study, the Akaike's (1969) information criterion (AIC) was used to determine the lag order for the augmented term.

The results in Table 16 indicate that data do not reject the hypothesis of a unit root in the levels of each series, and so most of the data appear to be non-stationary. Accordingly, the data are transformed in their differences. In all countries, the first

differences of some variables did not ensure stationarity. In these cases, second or third differences were used to guarantee stationarity of relevant variables. Using the critical Dickey-Fuller values, tabulated in Charemza and Deadman (1992), the ADF test for unit root hypothesis is rejected at the 5 percent level or better. The findings lead to the conclusion that most of the series are non-stationary.

The order of integration revealed by the unit root tests is presented in Table 17.

Table 17. *Order of Integration*

Country	Variables							
	GDP	*BOP*	*INF*	*ER*	*FP*	*DC*	*I*	*ED*
Fiji	1	1	0	1	1	1	1	2
PNG	1	2	1	2	2	1	0	1
W/Samoa	1	0	3	2	-	2	2	0
Solomon Is.	1	2	2	1	1	1	-	3

5.7.2 Results of Cointegration Test

The order of integration summarised in Table 17 suggests that in all countries the order of integration of the dependent variable is different to the independent variables. Having established the order of integration, the next step is to proceed with cointegration tests, noting the following points:

- cointegration tests cannot be carried out if some of the series are stationary in their levels, that is, integrated of order zero, *(I(0))*, while others are stationary only after

first differencing, that is, integrated of order one, *(I(1))*, (Hafer and Kutan, 1993).

- if only two variables appear in the long-run, both have to be of the same order of integration. If the number of variables is greater than two (that is, if there is more than one explanatory variable), the order of integration of the dependent variable cannot be higher than the order of the integration of any of the explanatory variables (Charemza and Deadman, 1992).

- moreover, there must be either none or at least two explanatory variables integrated to an identical order higher than the order of integration of the dependent variable (Charemza and Deadman, 1992).

With regard to the points raised above, it is clear that the order of integration resulting from the unit root test (Table 17) suggests that the cointegration test is valid for the economic growth models for Fiji and the Solomon Islands and the BOP model for Fiji. As such, the Johansen and Juselius (1990) cointegration test is conducted to see if the non-stationary variables are cointegrated.

Table 18 reports the results of the cointegration tests. The null hypothesis most r cointegration vectors (where $r=0, 1, 2$ and 3) is tested against a general alternative. The test was conducted at the 5 percent level of significance, the critical values taken from Table A2 in Johansen and Juselius (1990).

Table 18. *Cointegration Test Results*

Null Hypotheses	Cointegration Test Statistic	Critical Value
(a) *Fijian Growth Model*		
HO: r=1	56.32	69.977
HO: r≤1	36.98	48.419
HO: r≤2	15.62	31.256
HO: r≤3	1.38	17.844
(b) *Fijian BOP Model*		
HO: r=1	47.78	69.977
HO: r≤1	33.67	48.419
HO: r≤2	15.62	31.256
HO: r≤3	3.48	17.844
(c) *Solomon Islands Growth Model*		
HO: r=1	51.33	69.977
HO: r≤1	24.21	48.419
HO: r≤2	14.33	31.256
HO: r≤3	2.71	17.844

The results in Table 18 show that the null hypothesis of no cointegration is not rejected, suggesting no evidence for any cointegrating relations in the data. This is because of the relatively small size of the sample. It is worth noting that in small samples, the long-run or low frequency properties of the data may only be dimly reflected, thus reducing the probability of identifying a cointegrating relationship between the variables. In recent applied econometrics work, there is a tendency to use the error correction formulation and then check the residuals for stationarity when cointegration relationships cannot be identified in small samples. Because of the lack of reliable critical values for small samples, this is still a problem given the Granger

representation theorem. Therefore, the error correction approach should be avoided until more reliable critical values for small samples are computed. Thus the error correction approach is avoided here and all models are estimated with the OLS procedure.

5.7.3. Empirical Results of Economic Growth, BOP and Inflation Models

The evidence of the impact of IMF inspired policies on growth rate of GDP, BOP and inflation are presented in Tables 19, 20 and 21, respectively, showing the fit of the model to the data and signs, and significance of the variable coefficients in the four South Pacific island countries. In all reported regressions, the *t-statistics* are in parentheses below their respective coefficients.

Regression runs were also made on equations 5, 6 and 7 where all explanatory variables were lagged by one year together with the lagged dependent variable so as to capture any dynamic effects. The results of models incorporating lagged explanatory variables are presented in appendices 10 to 12. The results obtained are very poor with low levels of significance in all the models for each country. Moreover, a number of these models do not capture any significant dynamic effects of the instrumental variables. The models without lagged explanatory variables proved most robust in terms of their overall explanatory power and meeting some of the *a priori* expectations. Thus, the discussion of the estimated results is based on the models without the lagged explanatory variables.

Regression runs were assessed against a range of diagnostic tests. Overall, the equation performs well, exhibiting no problems of functional form mis-specification (RESET (2)). The values suggest that no evidence of heteroscedasticity (ARCH) exists in any of the specifications, thus lending some credence to the OLS results. The Durbin-h statistics confirm that the model does not suffer from autocorrelation (Dh) while the error terms (JB) are normal in a number of equations. The usefulness of these empirical results depends, initially, on the stability of the estimated parameters in equations 5, 6 and 7, and a Chow test was performed. The F-Statistic for the Chow test, in all cases, indicates that stability of the estimated coefficients cannot be rejected at the 5 percent level. The models stand up well to the diagnostic checks.

The overall explanatory power (adjusted R^2) of the growth model is very low in all countries. As for the BOP model, the overall explanatory power is fairly low for Western Samoa and the Solomon Islands and is satisfactory for Fiji and PNG. Finally, the overall explanatory power of the inflation model is fairly low for all countries. Nevertheless, the results support some of the *a priori* expectations quite satisfactorily.

One issue regarding the empirical results is that the results of the growth model should be interpreted with caution. The limitation here is that this model uses generated quarterly GDP data while the rest of the explanatory variables are actual quarterly series. The results of this model based on generated quarterly data is questionable in the sense whether the generated data adequately represent the actual

observed quarterly data, hence the actual economic situation. However, in a number of applied econometric works, where quarterly series are unavailable, they are generated and used to estimate the models. Again, this poses serious limitations of the model that it does not truly reflect the economic phenomenon being tested. However, this model may be useful in the sense as far as empirical regularities are concerned and not when actual behavioural relationships are concerned. In general the results of the growth model should be interpreted only as preliminary evidence regrading the variables and countries under consideration. Further research is welcome once actual data becomes available in their quarterly series.

Economic Growth Model

The sign on the coefficient of the exchange rate (*ER*) in Fiji, Western Samoa and the Solomon Islands is positive and insignificant (Table 19). The results of this variable suggest that IMF inspired real devaluations in these three countries appear to have expansionary effects on economic growth, indicating a weak improvement in aggregate output. The expected sign on the coefficient of *ER* is consistent with the empirical findings of Khan (1988) Nunnenkamp and Schweikert (1990) and Agenor (1991). This outcome weakly supports the orthodox theory advocated by Guitan (1976) and Dornbusch (1988). The coefficient of *ER* in PNG is negative and statistically insignificant, suggesting a weak contractionary effect of IMF inspired real devaluation causing a decline in aggregate output. Given the insignificant expected effect, this weakly supports the structuralist's argument advocated by Cooper (1971)

and Krugman and Taylor (1978). The results of this variable is also consistent with variable *ERS* in chapter 3 (Table 15) where it is shown that exchange rate variability tends to strongly depress economic growth across the Pacific island countries.

The sign on the coefficient of fiscal policy (*FP*) is opposite to the expected sign in Fiji, PNG and the Solomon Islands. The coefficient of *FP* is negative and significant at the 10 percent level in Fiji while negative but insignificant in PNG and the Solomon Islands. The results of *FP* generally imply that fiscal policy in these countries has been expansionary, and inconsistent with the cross-country results of developing countries such as those obtained by Doroodian (1993), suggesting that, contrary to IMF's expectations, fiscal policy has negatively contributed to overall growth performance in Fiji, PNG and the Solomon Islands. The results of *FP* is consistent with the government consumption *(GC)* variable in chapter three (Table 15) where it is shown that faster growing government sector is associated with slower growth in the Pacific island economies.

The sign on the coefficient of the real interest rate *(I)* is as expected, positive but insignificant at 10 percent level in Fiji, PNG and Western Samoa (Table 19). The resulting sign on the coefficient of *I* is consistent with empirical studies such as those of Fry (1980) and Mcdonald (1983). It can be said, on the basis of the results obtained for the variable *I*, that although IMF's targeting of domestic credit for macroeconomic adjustment has positively contributed to economic growth in Fiji, PNG and Western Samoa, this effect has, in fact, been insignificant.

Table 19. *Regression Results - Growth Model*

Variables	Fiji	PNG	Solomon Islands	Western Samoa
Constant	-0.77 (-0.24)	0.12 (0.04)	-1.17 (-0.23)	1.05 (0.15)
GDP_{t-1}	0.13 (1.77)**	-0.38 (-2.19)*	-0.47 (-4.15)*	-0.48 (-3.33)*
ER	7.54 (0.69)	-12.46 (-0.80)	2.63 (0.29)	5.10 (0.59)
FP	-0.008 (-2.55)*	-0.005 (-0.015)	-0.06 (-0.15)	---
I	0.46 (0.37)	0.076 (0.40)	---	0.071 (0.31)
DC	(-0.84) (-2.23)*	0.22 (0.66)	-0.055 (-1.43)**	0.22 (1.85)**
ED	0.46 (6.82)*	0.0008 (0.18)	0.40 (4.15)*	-0.43 (-2.13)*
N	52	46	43	44
F	9.90	3.44	17.07	3.36
Adjusted R^2	0.51	0.15	0.66	0.22
Dh^1	-1.45	-0.02	-1.96	-0.12
JB $(\chi^2)^2$	6.88	5.29	5.31	1.97
ARCH $(\chi^2)^3$	1.07	0.94	0.57	0.18
RESET(2)[4]	1.08	0.08	0.56	1.58
CHOW[5]	4.06	0.88	0.29	2.37

* Significant at the 1 percent level using the one-tailed test.
** Significant at the 5 percent level using the one-tailed test.
*** Significant at the 10 percent level using the one-tailed test.
1. Durbin-h test for autocorrelation.
2. Jarque-Bera test for normality of residuals.
3. Engle's autoregressive conditional heteroscedasticity test for residuals.
4. Ramsey's RESET test for functional form mis-specification.
5. Chow test for parameter stability.

The sign on the coefficient of domestic credit *(DC)* is as expected, positive but insignificant at the 10 percent level in PNG, positive and significant at the 5 percent level in Western Samoa, negative and significant at the 5 percent level in Fiji and negative and significant at the 10 percent level in the Solomon Islands. The statistical result for the domestic credit indicator is supportive of the IMF inspired policies in PNG and Western Samoa where economic growth was positively related to domestic credit suggesting a largely restrictive monetary policy. The results of *DC* in Fiji and the Solomon Islands strongly suggest an expansionary monetary policy and non-supportive of IMF's targeting of reduced domestic credit to enable higher levels of economic growth.

The coefficient of external disturbance *(ED)* has the expected positive sign in all the countries except Western Samoa, and is statistically significant at 1 percent level for Fiji and the Solomon Islands (Table 19), showing that the external disturbance variable had a retarding effect in economic growth in all countries except Western Samoa. One possible explanation for the outcome in Western Samoa is the small share of exports as a proportion of overall output which does not truly reflect the extent of disturbances. The results for the external disturbance variable in Fiji, PNG and the Solomon Islands is consistent with the variable *ED* in chapter three (Table 15).

Finally, the sign on the coefficient of the lagged dependent variable (GDP_{t-1}) is negative and significant at the 5 percent level in PNG, the Solomon Islands and Western Samoa suggesting no significant positive contribution of previous year's

growth performance in GDP into the current year. The sign on the coefficient of GDP_{t-1} is positive and significant at the 5 percent level in Fiji, strongly suggesting a positive contribution of previous years' performance in GDP into the current year.

Summarising the results of the economic growth model, it is clear that the results vary from country to country. However, there is some consistency in the results obtained. For example, the signs on the coefficients of variables GDP_{t-1}, *ER*, *I*, *FP* and *ED* are same, although they vary in their levels of significance, at least in three of the four countries. This gives some indication that the behaviour of macroeconomic parameters in terms of adjustment effects on economic growth are similar in the four countries of the South Pacific region. This is also a reflection to certain extent similarities in adjustment measures inspired by the IMF and probably the economic structures across the region.

In terms of IMF's objective of achieving an increased growth in GDP, it seems that targeting the exchange rate and the domestic interest rate appear most effective in Fiji, interest rate and domestic credit in PNG, exchange rate in the Solomon Islands and exchange rate, interest rate and domestic credit in Western Samoa. However, their effect remains insignificant in terms of contribution to the objective of attaining higher growth of output.

In terms of country effectiveness of IMF inspired adjustment measures to raise economic growth, the policies were most effective in Western Samoa where three macroeconomic variables had the expected signs on their coefficients, and least

effective in the Solomon Islands where one variable has the expected sign on its coefficient.

In general, the results do not give a strong indication that IMF has achieved its objectives of increased growth through its adjustment programmes across the Pacific island countries. This is because although some variables show the desired outcome, the coefficients are highly insignificant. This outcome on the growth objective is consistent with some pooled cross-sectional studies such as Reichmann and Stillson (1978), Connors (1979), Killick (1984), Pastor (1982), Gylfason (1987) and Doroodian (1993). These researchers have concluded that IMF programmes have no substantial effect on economic growth.

The Balance of Payments Model

The sign on the coefficient of the exchange rate *(ER)* is positive and insignificant at the 10 percent level in all four Pacific Island countries (Table 20). Real devaluations appear to have expansionary effect indicating a weak improvement in BOP. This result supports the orthodox view such as those advocated by Guitan (1976) and Dornbusch (1988). These results are also consistent with the empirical results obtained by Gylfason and Radetzki (1991) and Doroodian (1993). The result suggests that IMF inspired real devaluation as a policy instrument has dealt with BOP disequilibria, but its effects have not being significant.

Table 20. *Regression results - Balance of Payments Model*

Variables	Fiji	PNG	Solomon Islands	Western Samoa
Constant	-15.15 (-0.80)	-31.69 (-0.30)	-2.22 (-0.10)	2.30 (0.084)
BOP_{t-1}	-0.047 (-1.48)***	-0.63 (-7.18)*	-0.80 (-6.79)*	0.49 (3.16)*
ER	32.28 (0.50)	14.61 (0.029)	10.43 (0.27)	14.13 (0.40)
FP	0.60 (30.46)*	0.0079 (0.089)	1.78 (1.11)	---
I	2.27 (0.32)	-3.05 (-0.52)	---	3.91 (3.73)*
DC	3.93 (1.75)**	0.15 (0.014)	0.32 (1.80)**	0.76 (1.57)**
ED	-0.19 (-0.54)	0.80 (5.69)*	-0.55 (-1.51)**	0.30 (0.37)
N	52	46	43	44
F	227.33	17.92	11.90	3.37
Adjusted R^2	0.96	0.69	0.56	0.22
Dh^1	0.59	0.15	-0.24	-0.007
JB^2	16.33	13.85	14.58	4.25
ARCH $(\chi^2)^3$	0.40	0.35	1.03	6.30
RESET (2)[4]	0.36	1.02	0.012	4.84
CHOW[5]	0.68	1.28	0.97	0.092

* Significant at the 1 percent level using the one-tailed test.
** Significant at the 5 percent level using the one-tailed test.
*** Significant at the 10 percent level using the one-tailed test.

1. Durbin-h test for autocorrelation.
2. Jarque-Bera test for normality of residuals.
3. Engle's autoregressive conditional heteroscedasticity test for residuals.
4. Ramsey's RESET test for functional form mis-specification.
5. Chow test for parameter stability.

The sign on the coefficient of fiscal policy *(FP)* was as expected, and supportive of IMF inspired policies, being highly significant at the 1 percent level and positively related to BOP in Fiji, positive and insignificant at the 10 percent level in PNG and the Solomon Islands (Table 20). The results imply that fiscal policies have been restrictive as desired by the IMF. The regression results of *FP* suggests that IMF's targeting of fiscal policy for macroeconomic adjustment produced the desired effects of attaining a viable BOP objective in Fiji, PNG and the Solomon Islands.

The sign on the coefficient of the real interest *(I)* is as expected, positive and significant at 1 percent level in Western Samoa; as expected but insignificant in Fiji and negative and insignificant in PNG (Table 20). The results strongly support targeting of domestic interest as an adjustment measure for viable BOP in Western Samoa while the support for the same variable is weak in case of Fiji, and non-supportive in PNG.

The sign on the coefficient of domestic credit *(DC)* is positive and significant at the 5 percent level for Fiji and the Solomon Islands, positive and significant at the 10 percent level for Western Samoa and positive but insignificant for PNG (Table 20). The statistical result for the domestic credit indicator is non-supportive of the IMF inspired policies in achieving the objective of a viable BOP across the four South Pacific island countries. The positive coefficients of *DC* suggest a largely expansionary monetary policy.

The sign on the coefficient of external disturbance *(ED)* has the expected positive sign and is statistically significant at the 1 percent level for PNG and positive but insignificant in Western Samoa (Table 20). In the Solomon Islands, the sign on the coefficient of *ED* is negative and significant at the 10 percent level but negative and insignificant in Fiji. The results in Table 20 show that the external disturbance variable had a significantly retarding effect on BOP in PNG.

Finally, the sign on the coefficient of the lagged dependent variable (BOP_{t-1}) is negative and highly significant in all countries, suggesting no significant positive contribution of previous years' performance in the BOP into the current year.

Like the growth model, the results of the BOP model vary from country to country. Nevertheless, they are generally more supportive of IMF's objective of a viable BOP than the results of the growth model. Again, there is some consistency in the results obtained for each of the variables across the four countries. In all four countries, the variables *ER* and *DC* have the same signs on the coefficients while in three of the four, variables BOP_{t-1} and *FP* have the same signs on their coefficients. This also confirms that the behaviour of some of the important macroeconomic parameters and their effects on BOP's being similar in the four countries of the South Pacific region.

In terms of IMF's objectives of achieving a viable BOP, it seems that targeting exchange rates, domestic interest rates and fiscal policy appear most effective. Surprisingly, targeting domestic credit has shown to be opposite to the

expected effect in all countries. Overall, IMF inspired policies in terms of achieving the objective of a viable BOP were most effective in Fiji and Western Samoa.

In general, it can be said that the IMF inspired adjustment measures have been more effective in achieving the goals of a viable BOP across the Pacific Island countries. This outcome on the BOP is consistent with the results of some previous studies such as Donovan (1982), Khan and Knight (1985), Gylfason (1987) and Pastor (1987). These researchers concluded that IMF programmes led to significant improvements in the BOP position of a cross-section of developing countries. However, it cannot be strongly suggested that IMF inspired policies have been successful in attaining the objectives of a viable BOP in the Solomon Islands as some of the expected effects, shown by the instrumental variables, remain insignificant.

The Inflation Model

The sign on the coefficient of the exchange rate *(ER)* is positive and significant at the 1 percent level for PNG, positive and significant at the 5 percent level for the Solomon Islands, positive and significant at the 10 percent level for Western Samoa, and positive and insignificant in Fiji (Table 21). The results suggest that devaluation of domestic currency is inflationary across all four countries. The results support the supply-side theoretical contention advocated by Khan and Knight (1985) and Dornbusch (1980).

Table 21. *Regression Results - Inflation Model*

Variables	Fiji	PNG	Solomon Islands	Western Samoa
Constant	-0.11 (-0.27)	0.44 (0.28)	4.08 (2.60)*	2.89 (3.96)*
IFN_{t-1}	-0.70 (-5.37)*	-0.26 (-2.29)*	-0.36 (-2.47)*	-0.87 (-5.07)*
ER	1.31 (0.83)	19.51 (2.69)*	4.72 (1.73)**	1.12 (1.61)**
FP	-0.05 (-0.015)	-0.019 (-1.41)**	0.122 (1.18)	---
I	0.059 (0.67)	-0.34 (-3.72)*	---	-0.001 (-0.068)
DC	-0.10 (-2.09)*	-0.16 (-1.04)	-0.002 (-0.015)	0.009 (1.03)
N	52	46	43	44
F	6.91	10.45	2.37	11.02
Adjusted R^2	0.37	0.51	0.12	0.48
Dh^1	4.44	2.93	-3.13	0.026
JB^2	2.73	1.19	3.29	5.77
ARCH $(\chi^2)^3$	2.38	2.82	0.10	0.16
RESET (2)[4]	3.82	0.06	2.59	0.90
CHOW[5]	3.24	3.22	3.12	3.74

* Significant at the 1 percent level using the one-tailed test.
** Significant at the 5 percent level using the one-tailed test.
*** Significant at the 10 percent level using the one-tailed test.

1. Durbin-h test for autocorrelation.
2. Jarque-Bera test for normality of residuals.
3. Engle's autoregressive conditional heteroscedasticity test for residuals.
4. Ramsey's RESET test for functional form mis-specification.
5. Chow test for parameter stability.

The sign on the coefficient of fiscal policy *(FP)* is negative and insignificant in Fiji, negative and significant at the 10 percent level in PNG and positive and insignificant in the Solomon Islands. The results imply restrictive fiscal policies allowing lower inflation in PNG and Fiji, and are consistent with those obtained by Doroodian (1993). In the Solomon Islands the results imply an expansionary effect of fiscal policy on inflation.

The sign on the coefficient of real interest *(I)* is negative and significant at the 1 percent level in PNG and negative but insignificant in Western Samoa (Table 21). The result provides strong support of IMF's targeting of domestic interest rates to control inflation in PNG, but weak support for the same in Western Samoa. The coefficient of *I* is positive in Fiji suggesting that interest rate targeting does not contribute positively towards controlling inflation.

The coefficient of the domestic credit *(DC)* is negative and significant at the 1 percent level in Fiji, negative and insignificant in PNG and the Solomon Islands and positive but insignificant in Western Samoa. The statistical result for the domestic credit indicator does not support IMF's targeting of domestic credit to achieve price stability in Fiji, PNG and the Solomon Islands. The results of Western Samoa provide weak support of IMF's targeting of domestic credit to achieve price stability.

Finally, the coefficient of the lagged dependent variable (IFN_{t-1}) is negative and significant at the 1 percent level in all countries, suggesting no significant

positive contribution of previous years' inflation into the current year.

These results illustrate the effectiveness of policy instruments on IMF's objective variable, showing that government consumption and interest rates appear most effective adjustment policies on inflation in PNG, government consumption in Fiji and interest rate and domestic credit in Western Samoa. As established in the economic growth and BOP models, some variables here (INF_{t-1}, ER and DC) have the same signs on their coefficients suggesting that these variables have responded to the adjustments measures in exactly the same manner in at least three of the four Pacific island countries. Overall, IMF inspired policies were most effective in PNG with a number of variables showing significant effects. As in the case of the BOP model, targeting domestic credit has shown to be opposite to the expected effect on inflation in three of the four countries. Overall the results do not give a strong indication that IMF inspired adjustment measures have been successful in attaining the objectives of price stability in Fiji, the Solomon Islands and Western Samoa, because, while some variables have shown the desired outcome, their effects are insignificant. This is consistent with some existing studies such as Connors (1979), Goldstein and Monteil (1986), Pastor (1987) and Khan (1988). These researchers concluded no significant effects of IMF programmes on the rate of inflation.

5.8 SUMMARY AND CONCLUSION

The purpose of this chapter is to explore how far the IMF inspired policies

achieved their macroeconomic objectives of sustained real growth of GDP, a viable BOP and low inflation rates in Fiji, PNG, the Solomon Islands and Western Samoa. The study developed an empirical model within the theoretical macroeconomic framework and analyzed IMF inspired policy effectiveness utilising a reduced form equation on a region-country-specific basis. The period of observation ranged from 1980:1 to 1992:4.

Prior to the empirical estimations, an investigation was conducted on the time series properties of the data. The test of unit root in their levels indicated that most data series did not reject the hypothesis of a unit root in the levels and so appeared to be non-stationary. Thus the data were transformed in their differences and the ADF test for unit root hypothesis was rejected at the 5 percent level. From the unit root test, it was found that cointegration tests were necessary for the economic growth model in case of Fiji and the Solomon Islands and the BOP model in Fiji. The Johansen and Juselius (1990) test showed that the null hypotheses of no cointegration was not rejected, suggesting no evidence for any cointegrating relations in the data.

The results of the economic growth model, although varied from country to country in levels of significance, showed consistency in the signs of the coefficients on a number of variables in the four countries across the South Pacific region. The signs on the coefficients of variables GDP_{t-1}, *ER, I, FP* and *ED* were the same in at least three of the four countries. This gives some indication that the behaviour of macroeconomic parameters in influencing growth in GDP are similar in the four countries. This is also a reflection of some similarities in adjustment measures

inspired by the IMF and the economic structures across the region.

It can be concluded that, in terms of the objective of achieving an increased growth in GDP, it seems that their targeting of the exchange rate and the domestic interest rate appeared most effective in Fiji, interest rate and domestic credit in PNG, exchange rate in the Solomon Islands, and exchange rate, interest rate and domestic credit in Western Samoa. In terms of achievement of growth objective at a country level, IMF inspired adjustment measures to raise economic growth, the policies were most effective in Western Samoa as three macroeconomic variables had the expected signs on their coefficients, and least effective in the Solomon Islands where one variable had the expected sign on its coefficient. In general it cannot be strongly suggested that IMF inspired policies have achieved its objectives of increased growth in the four South Pacific island countries, because, while some variables have shown the desired outcome, their effects are highly insignificant.

Like the economic growth model, the results of the BOP model varied from country to country. Nevertheless, they are generally more supportive of the objective of achieving a viable BOP. This model also revealed some consistency in the signs of the coefficients on a number of variables in the four countries. In all four countries, the variables *ER* and *DC* had the same signs on their coefficients while in three of the four countries variables BOP_{t-1} and *FP* had the same signs on their coefficients. This confirms that the behaviour of some important macroeconomic parameters and their effects on BOP's are the same in the four countries of the South Pacific region.

It can be concluded that, in terms of IMF's objectives of achieving a viable BOP across the Pacific island countries, it seems that their targeting of exchange rates, domestic interest rates and fiscal policy appeared most effective. Surprisingly, targeting domestic credit has shown to be opposite to the expected effect in all the countries. IMF inspired policies in terms of achieving the objective of a viable BOP, were most effective in Fiji. Overall, it can be suggested that IMF inspired policies have been more successful in attaining the objectives of a viable BOP as a number of the instrumental variables have shown the expected effect on the objective variable.

With regard to the objective of achieving low inflation the results of inflation model showed that targeting the government consumption and interest rate appeared to be effective policy instruments in PNG, government consumption in Fiji and interest rate and domestic credit in Western Samoa. As established in the economic growth and BOP models, some variables (INF_{t-1}, *ER* and *DC*) had the same signs on their coefficients suggesting that these variables have responded to the adjustments measures in exactly the same manner in at least three of the four South Pacific island countries. Targeting domestic credit has shown opposite to the expected effect on inflation in three of the four South Pacific island countries. IMF inspired policies on inflation can be said to be most effective in PNG. However, it cannot be strongly suggested that IMF inspired policies have achieved its objective of low inflation in Fiji, the Solomon Islands and Western Samoa, because, while very few variables have shown the desired outcomes, their effects are highly insignificant.

The final conclusion resulting from the empirical analysis is that although IMF

inspired adjustment policies have shown some desired effects in achieving the objectives of a viable BOP, low inflation and sustainable growth in GDP, the contribution of adjustment programmes has largely been insignificant particularly in terms of achieving the objectives of higher growth and low inflation. However, it has shown the desired effects in terms achieving a viable BOP in all four countries.

The empirical exercise undertaken indicates that the model performed satisfactorily in all countries, explaining the behaviour of key macroeconomic variables. The results show that the model is a satisfactory tool for examining policy alternatives. Nevertheless, attaining a stable macroeconomic environment is not the only way to enhance progress in growth and development of a country. The argument is that macroeconomic management with a simultaneous social development is a better means to enable progress in growth and development of a country. This line of argument is the focus of the next chapter.

CHAPTER 6

ADJUSTMENT AND PROGRESS IN SOCIO-ECONOMIC DEVELOPMENT

6.1. INTRODUCTION

The economic performance of Fiji, PNG, the Solomon Islands and Western Samoa, has generally been sluggish in the 1980s, as discussed in chapter two. During the 1980s, all countries experienced negative growth in their *per capita* real GDP (Table 22) and unfavourable growth in their real GDPs (chapter two).

As with developing countries elsewhere, the 1980s was a decade of adjustment for the South Pacific countries. Sluggish economic performance, during this time, was subjected to a number of IMF inspired policies, which tried to rectify BOP deficits, providing some cushion against external shocks and improving macroeconomic management (chapters two and five). Nevertheless, macroeconomic management is not the only area to focus on when there are crises in growth performance of a country. The widely accepted contention is that investment in human capital and social services with simultaneous macroeconomic management are the primary means to improve the quality of life.

Table 22. *Per Capita Real GDP Growth (Percent).*

Year	Fiji	PNG	Solomon Islands	Western Samoa	Average All
1980	-7.4	1.9	-6.7	-23.8	-9.0
1981	-5.9	-1.1	-3.2	-22.7	-8.0
1982	-10.7	-17.3	-14.5	-13.5	-14.0
1983	-11.1	-3.1	-31.8	-21.0	-16.6
1984	-1.2	-9.7	22.5	-13.2	0.4
1985	-4.7	-9.6	-19.3	-22.2	-13.9
1986	-2.9	6.5	-23.1	-1.4	-5.2
1987	-21.0	7.7	-12.2	5.2	-5.1
1988	-4.1	5.5	-0.2	-1.3	0.0
1989	10.4	-2.1	-20.0	2.2	2.3
1990	24.9	-15.0	0.3	-4.6	1.4
1980-90[1]	-33.7	-36.2	-108.0	-116.2	-73.5
1980-90[2]	-3.1	-3.3	-9.8	-10.6	

Source: International Monetary Fund. 1994: *Financial Statistics Yearbook* (Washington, D.C.).
[1] represents cumulative figures for this period.
[2] represents annual average figures for this period.

During the adjustment process in developing countries, living standards often fell sharply, particularly among the poor. Some studies, for example, Jolly and Cornia (1984), Cornia, Jolly and Stewart (1987), Ribe and Carvalho (1990) and Jolly (1991) drew attention to the serious human costs of the recession, and subsequently to the impact of adjustment measures on vulnerable groups, and the need for reforms in policy to protect these groups. Following this, a number of studies for example Pastor (1987), Lustig (1990), Hoeven (1991), Morrisson (1991), Stewart (1991), Glewwe and Tray (1991) and Ramirez (1993) investigated the mechanisms whereby social development is affected by economic developments, making useful contribution to the literature. These studies have identified a number of factors: incomes; employment; unemployment; wages; prices of basic goods; availability of essential services normally provided by the state, such as health and education; nutrition; and the demand made on women's time, affected during the adjustment process. Since there is no

universally accepted indicator of welfare, it is useful to incorporate these factors for a more balanced analysis.

In view of the above, the purpose of this chapter is to analyze the progress experienced in a number of socio-economic variables as a result of IMF inspired policies in the South Pacific countries in the 1980s. The intention here is for a more straightforward assessment, since the interest is in actual socio-economic progress in adjusting countries, not whether it was better or worse than some counterfactual situation.

The study is organised into nine sections, beginning with an assessment of socio-economic development by examining the changes in aggregate incomes and investigates whether any improvements have taken place in real *per capita* incomes during adjustment. Section 6.3 analyzes the impact of IMF inspired policies on real wages and investigates whether adjustment has contributed to improvements in it. Following this, an analysis of food prices is conducted in section 6.4 investigating whether food prices have increased or decreased in real terms. Section 6.5 investigates the impact of IMF inspired policies on employment and unemployment while section 6.6 analyses the effects of changing government expenditure on the provision of social services particularly health and education. The effects of IMF inspired policies on nutrition is discussed in section 6.7. In this section food production data are used as a proxy to investigate the impact of adjustment on nutritional status. Section 6.8 presents an empirical analysis of the effects of IMF inspired policies on overall living standards. In this section an attempt is made to assess whether the decade of the eighties with IMF inspired policies improved living standards of countries implementing such programmes. Section 6.9 presents some alternative arguments supporting the findings.

A conclusion to the chapter is presented in section 6.10.

6.2. INCOMES AND AGGREGATE PERFORMANCE

The adjustment policies inspired by the IMF during the eighties generated limited economic progress (Tables 1, 4, 7 and 10). Data in Table 22 reveals that, during 1980-90, real GDP per capita for the South Pacific countries dropped by an unprecedented 73.5 percent. The cumulative decrease in real per capita GDP over the same period was 33.7 percent in Fiji, 36.2 percent in PNG, 108.0 percent in the Solomon Islands and 116.2 percent in Western Samoa. None of the countries were able to show a positive cumulative rate of growth. However, the growth in real GDP per capita over the 1980-90 period has declined at an annual average rate of 3.1 percent in Fiji; 3.3 percent in PNG; 9.8 percent in the Solomon Islands and 10.6 percent in Western Samoa. The data in Table 22 provides sufficient evidence that IMF inspired policies have not allowed any improvements in aggregate real *per capita* income.

GDP per capita figures, presented in Table 22, although useful indicators of aggregate income and the standard of living, are not a sufficient indicator of the disproportionate burden placed by the policy measures on the society. In addition, per capita income does not capture such dimensions of welfare as health, life expectancy, literacy and access to public goods. Hence, it is essential to investigate the impact of such measures by discerning the trends in the wages of the working class - a more robust indicator of the impact of IMF inspired policies. The next section addresses this issue.

6.3. REAL WAGES

One appropriate indicator of wages is the value of real wages. Adjustment policies tend to depress real wages, as control over wages is combined with devaluation and price control. Table 23 presents data on real minimum wages.

Table 23. *Real Employment Index (1987=100)*

Year	Fiji	PNG	Solomon Islands
1980	108.9	118.9	139.0
1981	111.2	103.3	138.2
1982	106.3	103.6	138.2
1983	94.6	103.4	142.2
1984	105.5	102.9	110.8
1985	106.8	104.0	109.0
1986	108.1	102.0	102.1
1987	100.0	100.0	100.0
1988	85.8	-	-
1989	77.1	-	-
1990	80.9	-	-

Sources: The World Bank. 1993: *The World Tables* (Washington, D.C.) and Solomon Islands Department of Statistics. 1987: *Statistical Yearbook* (Honiara).
- indicates data unavailable.
Note: Data were not available for Western Samoa

Data in Table 23 shows that, over the period 1980-90, the real earnings index has been declining. Real minimum wages in Fiji fell by a cumulative amount of 27.9 percent over the 1980-90 period, and 18.9 percent in PNG over the 1980-87 period. In the Solomon Islands real wages fell by an alarming cumulative amount of 39 percent during 1980-87 period. The data on real earnings clearly indicates that IMF inspired measures did not contribute to any improvement in real wages. All countries experienced declining overall real wages.

A fall in real wages would also mean a consequent drop in the purchasing power of wage earners which would then force the waged workers to alter the composition and size of their basic consumption basket. Given the unprecedented decreases in real wages, it can be said that this would have had a demonstrated effect on consumption patterns. Therefore, the next section investigates this issue using food prices as an indicator of consumption patterns.

6.4. FOOD PRICES

Real incomes can also be affected by changing food prices. A number of elements in the adjustment package are likely to lead to rising food prices, including devaluation, rising producer prices, price decontrol and reduced food subsidies. There is no comprehensive information for changes in food subsidies or price decontrols in these countries. However, available data on food prices reveals interesting patterns. Table 24 shows the trends in the real food price index.

Over the period 1982-92, data in Table 24 shows that food prices increased in Fiji, PNG and the Solomon Islands, while it decreased in Western Samoa. During the same time Fiji and Western Samoa experienced a cumulative decline in food prices by 0.36 and 7.10 percent respectively while PNG and the Solomon Islands experienced an increase in food prices by 0.60 and 11.76 percent respectively. However, the average annual increase in food prices over the same period were 2.06 percent in PNG and 1.18 percent in the Solomon Islands. Fiji and Western Samoa experienced an average annual decrease in food prices by 0.04 percent and 0.71 percent, respectively. From this analysis, it can be said that IMF

inspired policies had a negative effect on food prices in PNG and the Solomon Islands.[1] Therefore, it is quite clear that IMF inspired policies have worked against the peoples of these countries by increasing food prices. Another way in which adjustment programmes could affect the society is their impact on employment. The next section addresses this issue.

Table 24. *Real Food Price Index (1990=100).*

Year	Fiji		PNG		Solomon Islands		Western Samoa	
1982	91.6		80.2		98.5		103.2	
1983	91.4	(-0.3)	78.2	(-2.4)	98.9	(0.5)	101.9	(-1.3)
1984	90.9	(-0.6)	77.7	(-0.7)	102.2	(3.3)	98.7	(-3.1)
1985	94.0	(3.4)	77.8	(0.2)	99.4	(-2.8)	99.5	(0.8)
1986	90.5	(-3.7)	101.1	(30.0)	97.1	(-2.3)	100.7	(1.2)
1987	90.8	(0.4)	99.9	(-1.2)	94.7	(-2.5)	98.5	(-2.2)
1988	96.2	(5.9)	98.2	(-1.8)	97.9	(3.5)	99.1	(0.6)
1989	100.1	(4.1)	97.9	(-0.3)	99.9	(2.0)	96.1	(-3.0)
1990	100.0	(-0.1)	100.0	(2.2)	100.0	(0.1)	100.0	(4.0)
1991	95.2	(-4.8)	100.8	(0.8)	101.4	(1.4)	93.6	(-6.4)
1992	90.7	(-4.7)	94.6	(-6.3)	110.1	(8.6)	95.7	(2.2)
1982-92[1]		(-0.1)		(2.1)		(1.2)		(-0.7)

Source: United Nations Economic Commission for Asia and the Pacific. 1994: *Statistical Yearbook* (Bangkok).
Note: Figures in parentheses are percentage changes from the previous year.
[1] Represents annual average for this period.

6.5. EMPLOYMENT AND UNEMPLOYMENT

Adjustment policies are likely to create productive opportunities for labour and lead to reduced unemployment. The expectation is that, as adjustment proceeds, this trend will be reversed as new and efficient job opportunities emerge. The evidence on employment in the

[1] Gupta and Nashashibi (1990) note that in Jordan for example, prices of essential items were increased following IMF inspired devaluation in 1989.

South Pacific countries is presented in Table 25. Due to the inherent lack of data on general employment, employment data for manufacturing activity were available for all countries except Western Samoa.

Table 25. *Employment Index (Manufacturing Activity) 1987=100.*

Year	Fiji		PNG		Solomon Islands	
1980	93.4		89.1		91.8	
1981	86.3	(-8.2)	89.0	(-0.1)	78.1	(-16.7)
1982	89.6	(3.7)	97.7	(8.9)	81.1	(3.8)
1983	93.5	(4.2)	98.2	(0.5)	81.8	(0.8)
1984	120.0	(8.3)	94.6	(-3.8)	77.7	(-5.3)
1985	97.6	(-4.5)	97.4	(2.9)	80.4	(3.4)
1986	97.8	(0.2)	99.4	(2.0)	82.9	(3.0)
1987	100.0	(2.2)	100.0	(0.6)	100.0	(17.1)
1988	111.8	(15.8)	105.1	(4.9)	102.4	(2.4)
1989	139.0	(19.6)	109.6	(4.1)	101.3	(-1.2)
1990	152.8	(9.0)	117.3	(6.5)	101.2	(-0.1)
1980-90[1]		(5.0)		(2.7)		(0.7)

Source: The World Bank. 1993: *The World Tables* (Washington, D.C.).
Note: Figures in parenthesis represent percentage change from the previous year.
[1] Represents average for this period.

Data in Table 25 shows that employment creation has been slow during the 1980-90 period. Average annual growth in employment over 1980-90 was 5.0 percent in Fiji; 2.7 percent in PNG and 0.7 percent in the Solomon Islands. Apart from Fiji, employment figures are depressing for PNG and the Solomon Islands. The decline in level of economic activity in the early and mid-1980s (chapter two) had an effect of decreasing the rate of employment creation in all countries. The evidence shows that formal sector employment growth has been unsatisfactory; this means a possible increase in unemployment or underemployment. Although there is insufficient data to support this argument, the general trend towards a

growing prevalence of unemployment in the region is undeniable.

The employment data in Table 25 provides inadequate information regarding actual labour market conditions during economic swings. Given the absence of unemployment benefits in all of these countries, workers who cannot find employment in the formal sector are bound to make a living either in the informal urban sector, in subsistence agriculture or unpaid family work. This means that workers during times of economic crises engage in low-productivity and non-remunerated activities possibly leading to a rise in underemployment and hidden unemployment.

There is one additional factor, particularly from the demand side, which may explain why employment did not increase significantly during 1980-90 period (Table 25), and real earnings declined significantly (Table 23). This decline would have probably allowed firms to reduce labour costs and the governments to reduce total public expenditure without having to resort to massive worker lay-offs.

In conclusion, it can be said that IMF inspired policies did not allow any marked improvement in employment levels, and the probability of resulting underemployment, as well as high employment rates, cannot be denied.

The analysis so far shows that incomes, wages, food prices and employment levels all deteriorated, thus providing evidence that IMF inspired policies have not shown beneficial impacts.

6.6. PROVISION OF PUBLIC SERVICES

Another critical area where society is "hard hit" is in government services such as health, education, social security and utilities. In terms of the provision of public services, adjustment programmes usually advocate cuts in funding for services provided by the state. Amongst others, health and education are services which tend to hurt society more severely than others.

6.6.1 Education

Over the period 1980-90, government spending on education did not fall as shown in Table 26. In fact, over the 1980-90 period, expenditure on education as a proportion of total public expenditure increased from 20.4 percent to 21 percent in Fiji, 16.5 percent to 21 percent in PNG, 13.5 percent to 22.4 percent in the Solomon Islands and 10.9 percent to 23.9 percent in Western Samoa. However, there were certain times over the 1980-90 period, when educational expenditure decreased, though not significantly.

Table 26. *Education Expenditure as a Percent of Total Expenditure.*

Year	Fiji	PNG	Solomon Islands	Western Samoa
1980	20.4	16.5	13.5	10.9
1981	19.9	16.1	14.7	9.9
1982	20.5	17.0	16.3	9.8
1983	22.9	16.1	21.9	11.3
1984	22.5	15.2	21.2	21.6
1985	22.1	17.0	19.0	22.8
1986	23.5	16.4	14.4	23.9
1987	21.8	15.9	13.6	23.9
1988	20.6	19.3	22.4	-
1989	20.7	19.7	-	-
1990	21.0	21.0	-	-
1980-90[1]	21.4	17.3	17.4	16.8

Source: International Monetary Fund. 1994: *Government Financial Statistics* (Washington, D.C.).

[1] Represents average for this period.

- indicates data unavailable

From an economic standpoint, the increase is welcome, and represents an investment in human capital which allows increased social development. This is consistent with Ribe and Carvalho (1990) who have argued that beneficial long-term social impact of adjustment programmes may be obtained by maintaining or increasing expenditures on education, among others, while overall public expenditures are cut.

6.6.2 Health

Trends in health expenditure have varied, as shown by the data in Table 27. In Fiji, health expenditure was reduced after 1987, reflecting fiscal austerity measures implemented following the *coups* of 1987. In PNG, health expenditure remained the same for most of the 1980s. However, health expenditure fell significantly in the Solomon Islands from 10.7 percent in 1980 to 6.2 percent by 1988. This indicates an unwelcome trend, representing a disinvestment in human capital which may constrain future development. Health expenditure in Western Samoa increased dramatically from 9 percent in 1980 to 17.6 percent in 1987.

An analysis of the basic health status, for which data are available, show an decrease in crude birth rates in all four countries. Current crude birth rates are well above the world average of all lower-middle-income economies (24 per 1000, 1992 estimate). The Solomon Islands has the highest birth rate (41.4 per 1000, 1992 estimate), while Fiji has the lowest (24.3 per 1000, 1992 estimate). Furthermore, infant mortality rates have improved dramatically in all countries since their independence: PNG, 54.0 per 1000 (1992 estimate), the Solomon Islands 45.6 per 1000 (1992 estimate), both well above the world average figures

for all lower-middle-income economies of 24.0 per 1000 (1992, estimate). Life expectancy at birth has also shown a marked improvement since independence. Fiji has the highest life expectancy (72 years) and PNG the lowest (56 years). PNG, the Solomon Islands and Western Samoa have life expectancies below world average for all lower-middle-income economies (67 years, 1992 estimate). High populations per physician exist: PNG 10,083, (1989 estimate), Solomon Islands 8844 (1986 estimate) and Western Samoa 4075 (1989 estimate), falling well outside the bounds of the world average of 2230 for all lower middle-income economies (1992 estimate). In contrast, population per physician in Fiji is 2074, well above the world average for all lower-middle-income economies. These figures reflect the depressing state of health affairs and health related support services.

Table 27. *Health Expenditure as a Percent of Total Expenditure.*

Year	Fiji	PNG	Solomon Islands	Western Samoa
1980	8.1	8.7	10.7	9.0
1981	7.7	9.0	10.6	8.9
1982	8.1	9.4	10.4	10.7
1983	8.5	9.1	10.6	9.7
1985	9.0	9.1	11.2	16.1
1985	8.5	9.6	9.1	17.0
1986	8.9	9.7	6.4	16.8
1987	8.3	9.6	6.7	17.6
1988	7.3	9.2	6.2	-
1989	7.2	10.0	-	-
1990	7.7	8.5	-	-
1980-90[1]	8.1	9.3	9.0	13.2

Source: International Monetary Fund. 1994: *Government Financial Statistics* (Washington, D.C.).

[1] Represents average for this period.

- indicates data unavailable

It is interesting to note that the drop in health expenditures in Fiji and the Solomon Islands (Table 27) is reflected in a similar reduction in the availability of physical and human resources in the public health sector. The Ministry of Health, serving the poorest sectors of the population, seems to be short supplied with physical and human resources essential for the provision of sufficient health care services. For instance, the number of hospital beds and doctors per capita rose (Tables 28 and 29). In PNG, where health expenditures did not vary much, population per bed has increased while population per physician increased after the mid-1980s. Similar trends are also seen in Western Samoa, in spite of increases in health expenditure.

Table 28. *Population per Physician.*

Year	Fiji	PNG	Solomon Islands	Western Samoa
1980	-	15625	7507	2786
1985	1708	12379	8531	3383
1989	2235	10083	9554	4075
1992	2792	12874	10300	4818

Source: United Nations Economic Commission for Asia and the Pacific. 1993: *Statistical Yearbook* (Bangkok) and The World Bank. 1994: *Social Indicators of Development* (Washington, D.C.).
- indicates data unavailable.

Table 29. *Population per Hospital Bed.*

Year	Fiji	PNG	Solomon Islands	Western Samoa
1980	-	236	335	224
1985	400	-	186	232
1989	414	237	-	253
1992	431	299	-	-

Sources: United Nations Economic Commission for Asia and the Pacific. 1993: *Statistical Yearbook* (Bangkok) and The World Bank. 1993: *Social Indicators of Development* (Washington, D.C.).
- indicates data unavailable.

As discussed in section 6.3, real wages dropped in all countries. This would have resulted in a drop in real wages of doctors, nurses and other employees in the public health sector, accounting for the overall drop in the health expenditure. The impact of wage reduction on the quality of the service is difficult to estimate. However, it can be said, that, if the levels of remuneration for those working in public health ended up being much lower than wages paid in private practices, or overseas, the more qualified would tend to leave the public sector over time. Moreover, the decline or zero investment in public health means not only a drop in the availability of health care services, but also existing resources were not properly maintained. Therefore, it can be expected that the quality of service will continue to deteriorate over time.

6.7 NUTRITION

Closely allied to health services is nutrition. Declining real incomes does not necessarily lead to worsening nutrition, since households adjust their consumption patterns to consume low-cost sources of calories. Behrman and Deolalikar (1988) argue that while average food expenditure declined by 8 percent for every 10 percent decline in income, caloric intake declines by only 3 percent. Sahn (1989), Alderman (1990) and Ravallion (1991) find a stronger relationship between income and nutritional status. Nutrition data are rare in all of the four South Pacific countries, so the analysis here is based on food data.

Food data are not accurate indicators of nutritional positions because they do not allow for imports and exports, the nature of food produced and its distribution. Nonetheless, the

argument is that a significant decline in food production, especially where food availability is inadequate, will lead to worsening nutrition. Food production data are presented in Table 30.

Table 30. *Food Production Per Capita (1987=100).*

Year	Fiji		PNG		Solomon Islands		Western Samoa	
1980	125.2		99.9		115.7		119.2	
1981	138.0	(9.3)	99.7	(-0.2)	125.9	(8.1)	110.3	(-8.1)
1982	140.1	(1.5)	100.1	(0.4)	117.2	(-7.4)	128.1	(13.9)
1983	89.6	(-53.6)	99.9	(-0.2)	110.1	(-6.6)	114.0	(-12.4)
1984	143.3	(37.5)	105.1	(5.0)	115.6	(4.8)	106.2	(-7.3)
1985	109.4	(-31.0)	105.9	(0.7)	113.6	(-1.8)	114.4	(7.2)
1986	133.5	(18.1)	101.6	(-4.2)	104.7	(-8.5)	116.4	(1.7)
1987	100.0	(-33.5)	100.0	(-1.6)	100.0	(-4.7)	100.0	(-16.4)
1988	104.9	(4.7)	100.3	(0.3)	100.8	(0.8)	100.2	(0.2)
1989	123.7	(15.2)	102.0	(1.7)	102.0	(1.2)	106.8	(6.2)
1990	124.4	(0.6)	98.1	(-3.9)	98.6	(-3.5)	95.3	(-12.1)
1980-90[1]		(-0.3)		(-0.2)		(-1.8)		(-2.7)

Source: The World Bank. 1993: *World Tables* (Washington, D.C.).
Note: Figures in parentheses represent percent changes from the previous year.
[1] Represents average for this period.

Over the period 1980-90, annual average food production declined by 0.32 percent in Fiji; 0.21 percent in PNG; 1.75 percent in the Solomon Islands; and 2.71 percent in Western Samoa. Although the percentage decline in food production during 1980-90 in Fiji and PNG is quite small, population growth in these two countries increased over the same period. This broadly indicates that food demand was greater than supply. Therefore, data supports the assumption that food availability in all of these countries was inadequate and would have led to worsening nutrition. One factor directly responsible for declining food production is the unfavourable weather conditions in most South Pacific countries. Nevertheless, the data

provide sufficient evidence that while IMF inspired policies were in progress in these countries, this did not have any favourable impact of increasing food production. This may have imposed a deteriorating effect on the nutritional status of the people's in the region.

6.8. STANDARD OF LIVING

It is widely recognised that the relationship between social indicators, such as life expectancy at birth, infant mortality rates and GDP per capita, is not linear, and as per capita GDP increases, the standard of living increases less and less steeply until it reaches an asymptotic limit (Kakwani, 1995). Some studies estimate this non-linear relationship include Preston (1975), Morris (1979) and Goldstein (1985).

An attempt is made here to assess if countries implementing IMF inspired policies have managed to improve their standard of living. This is examined by using aggregate data. Measures such as life expectancy at birth or infant mortality rates are only one dimensional measures where as living standard is influenced by a number of factors which contribute to its measure. As such, this issue needs to be investigated using some composite measure. However, composite measures of living standards are not available in the Pacific islands. An alternative but highly aggregate and single dimensional measure of living standard is presented here. The discussion is based on the trends in actual infant mortality rate and life expectancy for the four countries during 1971-91.

6.8.1. The Infant Mortality Rate

The infant mortality data presented in Table 31 shows that Fiji had the lowest rate while PNG the highest. The infant mortality rate is quite high in all countries except Fiji. The average world infant mortality rate for the lower-middle-income economies is 45.0 (The World Bank, 1994). Except for Fiji the figures for the other three countries are worse than the world average of countries with same income categories. Although there has been a tendency of declining infant mortality rates in Fiji, PNG and Western Samoa, the Solomon Islands had the opposite effect during most of the 1980s. It can be said that while IMF inspired economic adjustment measures were in place, this has not resulted in significantly improving, the infant mortality rate particularly in PNG, the Solomon Islands and Western Samoa. In addition to the deteriorating figures for the Solomon Islands, PNG and Western Samoa still have infant mortality rates well above the world average.

Table 31. *Infant Mortality Rates*

Year	Fiji	PNG	Solomon Islands	Western Samoa
1971	47.0	106.0	-	-
1975	40.2	82.0	46.0	-
1980	33.4	67.0	56.0	-
1981	32.2	66.0	60.4	-
1982	31.0	65.0	64.0	-
1983	30.2	63.8	61.8	-
1984	29.4	62.6	59.6	-
1985	28.6	61.4	57.4	-
1986	27.8	60.2	55.2	-
1987	27.0	59.0	53.0	50.0
1988	26.2	58.0	51.2	49.0
1989	25.4	57.0	49.3	48.0
1990	24.6	56.0	47.5	47.0
1991	23.8	57.0	45.6	46.0

Source: The World Bank (1994) *The World Tables* (Oxford: Oxford University Press).

6.8.2. Life Expectancy at Birth

Another variable which contributes towards the living standard measure is the life expectancy at birth. Data on life expectancies in Table 32 shows that Fiji has the highest life expectancy and the Solomon Islands the lowest. All countries have shown improvements in their life expectancies during 1971-91. However, the average world figure for life expectancy for all lower-middle-income economies is 68 (The World Bank, 1994). Using this as a bench mark, Fiji qualifies to be above the world average standard whereas the other countries are below the world average standard. Apart from Fiji, it cannot be strongly suggested that the IMF inspired policies have allowed improvements in the life expectancies in PNG, the Solomon Islands and Western Samoa.

Table 32. *Life Expectancy at Birth*

Year	Fiji	PNG	Solomon Islands	Western Samoa
1971	64.6	47.2	-	-
1975	66.4	48.9	-	-
1980	68.3	51.1	-	63.5
1981	68.6	51.5	-	63.7
1982	69.0	51.9	60.6	64.0
1983	69.2	52.3	61.8	64.3
1984	69.5	52.7	61.7	64.6
1985	69.8	53.1	62.3	64.9
1986	70.1	53.5	62.8	65.2
1987	70.3	53.9	63.3	65.4
1988	70.6	54.3	63.7	65.6
1989	70.8	54.7	64.1	65.8
1990	71.1	55.1	64.5	66.0
1991	71.3	55.5	64.9	66.2

Source: The World Bank (1994) *The World Tables* (Oxford: Oxford University Press).

These two key measures of living standards lead to the conclusion that apart from Fiji,

it cannot be strongly suggested that the economic adjustment efforts inspired by the IMF have enhanced the standard of living in PNG, the Solomon Islands and Western Samoa.

6.9 SOME RESERVATIONS IN INTERPRETING THE RESULTS

The results presented here should be interpreted with caution. It is difficult to argue that the worsening socio-economic conditions are largely due to IMF inspired policies. It could be also argued that such an outcome is largely due to the inherent nature of the Pacific island economies. Some deeper explanation of these two arguments are addressed here.

As mentioned in chapter four, IMF's adjustment programmes are based to a significant extent on the macroeconomic theory of open economies and are largely macroeconomic in nature. However, adjustment programmes have gradually expanded in recent years, where policies regarding poverty alleviation and reducing income inequality and improving general living conditions are of recent origin. Thus, it can be argued that Pacific island worsening socio-economic conditions may not be directly due to IMF inspired economic adjustment policies, although their policies were in place for the period under study. This is because IMF's policy change directed towards enhancement of social welfare took place in 1986 (chapter 4), the effects of such policy change may not be captured by the sample. The analysis covers 1980-1990. An inclusion of years beyond 1990, say up to 1995, may more truly reflect IMF's policy effect. Therefore further research is encouraged to see the effects in post 1990 period. It may be also argued (chapter four) that the deteriorating socio-economic conditions is because IMF has neglected to include of socio-economic policies in its programme design in the first place.

Another line of argument is that the worsening socio-economic conditions may be due to the inherent nature of the Pacific island economies. These countries are exposed to a number of factors constraining development (chapter 2) whose severity are much greater than other world economies and some of which are almost inescapable. However, as shown empirically in chapter three, a number of economic variables had an adverse effect on Pacific islands economic growth. Such economic variables indirectly retard the improvements in social conditions and were targeted by the IMF. It is also worth noting that there are factors beyond the control of IMF, for example political instability in Fiji and PNG, natural disasters and vulnerability to external economic conditions which directly affect the socio-economic variables.

6.10. SUMMARY AND CONCLUSION

This chapter has provided an analysis of a number of socio-economic variables as a result of IMF inspired policies in the South Pacific countries, presenting an empirical analysis of the effects of such policies on overall living standards. Some general conclusions can be drawn from the analysis.

On the basis of evidence surveyed in this chapter, it can be concluded that in the South Pacific countries, IMF inspired policies, together with possible adverse external developments and other weaknesses of internal policy and structure, have reduced the welfare of the people, slowing and sometimes reversing progress in incomes, real wages, food prices,

employment creation, provision of health services and nutrition levels. An attempt was made to assess if IMF inspired policies allowed any superior performance in living standards. This issue was investigated using annual infant mortality rate and life expectancy data. The results lead to the conclusion that IMF inspired policies have not made a significant contribution towards enhancing the standard of living in these countries.

The implementation of economic adjustment measures that take into account the socio-economic constraints and institutional realities prevailing in the South Pacific countries, is crucial if the objectives of robust economic growth leading to an improved quality of living are to be achieved. The IMF and the regional governments need to implement credible adjustment measures taking account of the social aspects of development, while altering the composition of government spending toward health, and promotion of food crops, employment creation and higher remuneration for its workers.

CHAPTER 7

SUMMARY AND CONCLUSION

This study has examined the experience of four developing South Pacific countries under IMF-inspired policies during 1980-92 with two central concerns: (1) to examine econometrically how far IMF inspired macro policies produced their desired objectives - a viable balance of payments, a low rate of inflation and a sustained real growth of GDP; and (2) to examine the behaviour of socio-economic development indicators during the period. To support these central issues, this study examined the nature of the economic crises in these economies, quantified empirically the factors influencing economic growth thus verifying factors causing economic crises, and examined the menu of policies supported by the IMF in response to the crises in a developing country context.

To achieve these, the study examined the economic background leading to the emergence of the crises, the causes of the crises and policy response. An empirical investigation, begun initially through a formulation of a simple growth model, examined the significance of a range of factors thought to have influenced growth performance within the new endogenous growth theory. This tested some of the IMF's theoretical arguments in terms of aggregate growth and development, and tried

to make empirical contributions to the literature within the framework of a new endogenous growth theory. The theoretical arguments for IMF-inspired policies, together with an empirical analysis testing the arguments, were also examined. It then developed a reduced form econometric model and estimated the model on a region country specific basis generating estimates of the relationship between IMF's objective variables and a range of instrumental variables in a macroeconomic context. Finally, it presented a quantitative assessment of the behaviour of socio-economic indicators during the period.

In examining the background to the crises and their nature, the evidence led first to conclude that the macroeconomic problems of Fiji, PNG, the Solomon Islands and Western Samoa during 1980-92 were largely a product of a combination of internal economic and non-economic and external economic conditions. In particular, these countries experienced negative and sluggish economic growth, large deficits in current account of balance of payments, deteriorating balance of trade and inflationary pressures. Further, it is concluded that there are some factors which were common causes of crises across the four countries, for example, the second oil shock and the decline in prices of export commodities. However, some factors were more country specific, for example, severe effects of unfavourable weather conditions in Fiji, the Solomon Islands and Western Samoa, low demand for Western Samoan export product, the coups in Fiji and the closure of the Bougainville mine in PNG. Also, the crises in all four countries can be said to be the result of coincidence of factors that constrain long-run development in the South Pacific region.

Within the framework of new endogenous growth theory, the study also made an attempt to apply an economic framework to empirically account for growth performance. This provided an account of the impact on growth of policies often used by the IMF. The empirical results did not show any evidence of convergence while investment in physical and human capital and outward orientation were not significant determinants of growth. However, the results presented strong evidence that high rates of inflation, government consumption, exchange rate variability and vulnerability to the vagaries of natural disasters and international economic environment have adversely affected economic growth. The results provided weak evidence of political instability adversely affecting economic growth.

Since the empirical findings present some evidence of the inability of a number of variables targeted by the IMF to show the desired effects, this suggests an immediate need for the governments and the IMF to review their growth oriented policies. In light of this, the governments of the island countries and the IMF need to prescribe and implement policies which extend beyond their traditional policy framework, are more precise and directly target the variables of concern. Such measures may include policies that allow the establishment of conducive legal, institutional and infrastructural conditions for investment, enhancement of human resource skills, privatisation of government operations, reduction of trade barriers, devaluation of exchange rates and price stability. Such measures may enhance the long-term growth and development of the Pacific island countries which both the governments of these nations and the IMF are striving for.

In reviewing the theoretical arguments of standard IMF policies, directed primarily to the management of aggregate demand and supply (fiscal and monetary restraint, devaluation and reliance on market forces to foster growth, lifting trade restraints, reduce unemployment and inflation and stabilize external balance), two issues are identified. The IMF policies have been rigid, with their theories substantially inclined to the monetary approach to the balance of payments problems; and the paramount importance of markets in allocation of resources, in itself, has led to the neglect of the role of social factors in growth and development process. While IMF has included policies concerning the preferences of people in its programmes, this stance was taken in recent years and only in some countries. Since the inception of IMF as a lender of financial resources, its policies, otherwise, have largely failed to take into account the preferences of people in a country and the impact on them. With regard to the empirical support of IMF's theoretical contentions, evidence shows that some countries have succeeded in combining adjustment, growth and social progress, while others have not. Thus, IMF's theoretical contentions will remain equivocal as long as empirical results show the positive and negative effects. However, one point arising out of the theoretical and empirical review of the literature is that, if the needs of the people of a country are neglected at large, the chances of IMF type policies working successfully are quite remote.

In evaluating how far IMF inspired policies achieved their goals of sustained growth in GDP, a viable balance of payments and a low inflation, a reduced form econometric model was developed on the basis of quarterly data for the period 1980:1 to 1992:4. The empirical results indicate that the model performed quite well.

With regard to achieving the objectives of sustained economic growth, targeting the exchange rate and domestic interest rate appeared most effective in Fiji, interest rate and domestic credit in PNG, exchange rate in the Solomon Islands, and exchange rate, interest rate and domestic credit in Western Samoa. In terms of achieving the growth objective on a country-by-country basis, IMF-inspired policies proved most effective in Western Samoa where, at least, three policy variables showed the expected effects on the objective variable, and least effective in the Solomon Islands where one policy variable showed the expected effect. In balance, it cannot be strongly suggested that IMF-inspired policies have achieved the objective of increased growth in the four South Pacific island countries, because, while some variables have shown the desired outcome, their effects remained highly insignificant. The results obtained for the growth model are also consistent with the results obtained by the endogenous growth model as discussed earlier, even though the estimation procedures are different. Thus, it can be said that the IMF-inspired policies have not satisfactorily produced the desired objective of higher growth in the Pacific island economies.

IMF-inspired policies were more successful with regard to achieving the objective of a viable balance of payments in all four countries. The targeting of exchange rates, fiscal policy and domestic interest appeared most effective across the four countries. In terms of achieving the objectives of a viable balance of payments on a country-by-country basis, IMF-inspired policies proved most effective in Fiji and Western Samoa. Unlike the growth effect, it is concluded that IMF-inspired policies have been more successful in attaining the objectives of viable balance of payments

as a number of the instrumental variables have shown the expected effect on the objective variable.

With regard to the objective of low inflation, targeting of government consumption and interest rate appeared most effective instruments in PNG, government consumption in Fiji and interest rate and domestic credit in Western Samoa. IMF-inspired policies on inflation were most effective in PNG. However, the empirical results do not strongly suggest that IMF-inspired policies have achieved their objective of low inflation in Fiji, the Solomon Islands and Western Samoa, because, while some variables showed the desired outcomes, their effects were largely insignificant.

An examination of the efficacy of adjustment policies in contributing socio-economic development shows that, in spite of their implementation, these policies have not contributed towards any enhancement of the welfare of the people in any of the countries during 1980-92. The analysis indicated slowing and sometimes reversing progress in incomes, real wages, food prices, employment creation, provision of health services and nutrition levels. An attempt was made to assess the impact of IMF inspired policies on the standard of living. An assessment of the life expectancy and infant mortality rate data led to the conclusion that the IMF-inspired policies did not make any significant contribution towards enhancing the standard of living in PNG, the Solomon Islands and Western Samoa. The unsatisfactory progress shown by a number of socio-economic variables is largely consistent with the conclusions reached in chapter four. It may be concluded that IMF-inspired policies

have largely targeted macroeconomic variables, and even when successful, have failed to make an impact on the general welfare of the society.

The study of these socio-economic indicators leads us to presume that the overall socio-economic development was directly affected by the unsatisfactory realisation of the growth objective as revealed by the empirical results in chapters three and five. Perhaps policy should not only concentrate on achieving higher growth, a viable balance of payments or price stability but on a judicious mix of macroeconomic and socio-economic policies, so as to allow progress in overall growth and development of a nation.

Solving the economic problems of the South Pacific countries, in particular, and the developing countries elsewhere, requires more than simply targeting macroeconomic variables. IMF adjustment programmes, taking into account the socio-economic constraints and institutional realities prevailing in the South Pacific countries, and in developing countries elsewhere, is a crucial first step in paving the way for a renewed economic growth in the region and in other developing nations, and meeting an environment that is conducive to the implementation and long-term success of adjustment policies. Since IMF, as a major lender, often influences policy of the borrowing nations, growth and development of developing countries may be better served if IMF places increasingly more emphasis on social and political characteristics of the developing countries, along with its economic programme.

The evidence presented in this study suggests that IMF-inspired policies

managed to move the balance of payments some distance in the desired direction, although not dramatically. The evidence also suggests only limited impact upon the growth, inflation and socio-economic objectives.

Developing countries which adopt IMF policies often have to cope with severe adverse effects of natural disasters, and also at the same time contend with policy weaknesses of the programmes as revealed by the results of this study and several others. The weaknesses of the programmes may often lie in the limited leverage that the government has on the policy instruments, and the direct social impact of manipulating these instruments. Therefore, it is important that programme designs are improved so as to estimate undue adverse impacts on the society, which partly neutralise the benefit of the ultimate macroeconomic goals.

The analysis here shows that the IMF-inspired policy effects have varied from country to country. Similar results are also produced by many other studies in other parts of the developing world. Because of such varied effects of standard measures, IMF-inspired policies have been perceived variously: representing double standards, being harsh, developmental, anti-developmental and encouraging poverty and dependency. With reference to such criticisms, IMF in recent years has begun to consider the preferences of people by showing more flexibility and willingness to modify its policies with a more developmental flavour. It will be some time before the effects of such actions are visible in the developing world, or available for analysis.

We should conclude by observing that in the long-term, IMF will continue to provide financial support and policy advice to the developing world. Our study which has concentrated on the direct effects of IMF assistance should not detract from a valuable contribution that IMF policies may have indirectly made to the developing world. This contribution has come in the form of substantial change in the attitude of developing country governments towards the whole gamut of policy making, legislation and setting up institutions, and in particular to reform and macroeconomic management. IMF does surely deserve a considerable portion of this credit.

APPENDICES

Appendix 1

South Pacific Countries - Physical and Economic Features

Country	Land Area (sq.km)	Sea Area ('000 sq.km)	Population (mid-1995)	Population Growth Rate (1974-91)	GNP Per Capita (1994)*
American Samoa	200	390	54800	3.78	-
Cook Islands	237	1830	19100	1.07	-
Micronesia	701	2978	105700	4.02	-
Fiji	18272	1290	774800	1.91	2130
Guam	541	218	149300	2.24	-
Wallis and Futuna	255	300	14400	1.17	-
Kiribati	690	3550	78400	2.07	710
Marshall Islands	181	2131	54700	4.21	-
Nauru	21	320	10500	2.28	-
Niue	259	90	2000	-5.27	-
Northern Mariana Is.	471	777	56700	6.06	-
New Caledonia	19103	1740	182200	2.00	-
Palau	488	629	16500	1.80	-
Papua New Guinea	462243	3120	4042000	1.48	980
Pitcairn Islands	5	800	53	0.00	-
French Polynesia	3521	5030	218000	2.48	-
The Solomon Islands	27556	1340	367800	3.67	740
Tokelau	10	290	1500	-1.33	-
Tonga	747	700	98200	0.49	1530
Tuvalu	24	900	9500	2.30	-
Vanuatu	12190	680	164100	2.41	1230
Western Samoa	2935	120	163400	0.28	950

Source: *Pacific Report*, November 1995, South Pacific Commission. 1993: *Statistical Summary* (Noumea) and The World Bank. 1995: *World Development Report* (Washington, D.C.)

* represents US Dollars (1994)

- indicates data unavailable

Appendix 2

Fiji's Output of Principal Commodities

Year	Rice	Sugar cane	Coconuts	Fisheries	Timber	Gold
1980	18	3360	225	18.6	250	-
1981	17	3931	210	24.4	224	-
1982	20	4057	217	28.0	239	1423
1983	16	2203	234	27.8	209	1248
1984	22	4290	234	27.9	223	1509
1985	28	3042	215	27.6	249	1865
1986	25	4109	226	27.0	236	2856
1987	23	2960	150	35.3	291	2864
1988	32	3185	155	32.4	333	4274
1989	32	4099	166	32.8	307	4221
1990	32	4016	239	35.0	307	4116
1991	33	3380	239	31.1	307	2743
1992	33	3533	239	-	-	-

Source: United Nations Economic and Social Commission for Asia and the Pacific. 1980 and 1993: *Statistical Yearbook* (Bangkok).
Note: Timber is in thousands of cubic meters, gold is in kilograms and the rest in thousands of metric tonnes.
- indicates data unavailable.

Appendix 3

PNG's Output of Principal Commodities

Year	Cocoa (000 metric tonnes)	Coffee (000 metric tonnes)	Copper (000 metric tonnes)	Gold (kilograms)
1980	31	55	-	14050
1981	32	51	-	16830
1982	26	41	170	17540
1983	28	56	201	18067
1984	33	44	164	17169
1985	35	56	175	39235
1986	33	44	174	34105
1987	32	63	208	36413
1988	36	62	219	38130
1989	47	71	204	27538
1990	40	67	170	31035
1991	33	58	-	-
1992	34	47	-	-

Source: United Nations Economic and Social Commission for Asia and the Pacific. 1980 and 1993: *Statistical Yearbook* (Bangkok).
- indicates data unavailable.

Appendix 4

Solomon Islands Output of Principal Commodities (Thousand Metric Tonnes)

Year	Rice	Coconuts	Cocoa	Palm Kernels	Fisheries	Timber
1980	-	215	346	-	37.4	512
1981	-	245	592	-	37.4	512
1982	11	194	668	3603	32.8	535
1983	9	167	1169	4004	47.3	548
1984	7	203	1709	3979	48.9	542
1985	6	209	1714	4177	44.0	542
1986	2	209	1875	3133	55.5	557
1987	-	208	2667	2432	44.6	425
1988	-	209	2639	3172	55.1	444
1989	-	201	3299	4475	57.0	449
1990	-	180	2725	5051	54.8	449
1991	-	153	2435	4992	69.3	449
1992	-	160	5000	5700	-	-

Source: United Nations Economic and Social Commission for Asia and the Pacific. 1980 and 1993: *Statistical Yearbook* (Bangkok).
- indicates data unavailable.

Appendix 5

Western Samoa's Output of Principal Commodities (Thousand Metric Tonnes)

Year	Coconuts	Copra	Fisheries
1980	-	-	-
1981	-	-	-
1982	213	28	4.0
1983	177	23	3.8
1984	151	19	3.7
1985	178	25	3.6
1986	191	25	3.2
1987	170	18	3.1
1988	160	19	2.5
1989	159	20	1.9
1990	138	17	0.6
1991	95	10	0.6
1992	95	10	-

Source: United Nations Economic and Social Commission for Asia and the Pacific. 1980 and 1993: *Statistical Yearbook* (Bangkok).
- indicates data unavailable.

Appendix 6. *IMF Credit to the Pacific Islands*

Country	Year	Type of Credit	Amount (Millions SDR's)
Fiji	1974	Oil Facility	0.34
	1977	Compensatory Financing	6.50
	1980	Compensatory Financing	6.50
	1981	Compensatory Financing	13.50
	1982	Compensatory Financing	13.50
	1983	Compensatory Financing	13.50
	1985	Compensatory Financing	4.75
	1986	Compensatory Financing	4.80
	1987	Compensatory Financing	4.75
	1988	Compensatory Financing	2.97
	1989	Compensatory Financing	0.59
PNG	1976	Oil Facility	14.80
	1976	Compensatory Financing	10.00
	1980	Oil Facility	5.00
	1980	Credit Tranche	2.50
	1981	Compensatory Financing	45.00
	1984	Compensatory Financing	34.90
	1986	Compensatory Financing	10.10
	1989	Stand-by Arrangement	69.20
	1991	Stand-by Arrangement	26.36
Solomon Islands	1979	Compensatory Financing	1.05
	1981	Stand-by Arrangement	1.60
	1982	Compensatory Financing	1.60
	1983	Stand-by Arrangement	2.40
	1986	Emergency Assistance	1.25
	1987	Compensatory Financing	0.40
	1988	IMF Credit	1.25
Western Samoa			
	1975	Stand-by Arrangement	1.05
	1975	Compensatory Financing	0.50
	1975	Oil Facility	0.26
	1976	Oil Facility	0.16
	1976	Compensatory Financing	0.50
	1977	Compensatory Financing	0.50
	1978	Standby Arrangement	0.73
	1978	Compensatory Financing	1.25
	1981	First Credit Tranche	0.75
	1981	Compensatory Financing	2.00
	1983	Stand-by Arrangement	3.38
	1983	Compensatory Financing	1.15
	1984	Stand-by Arrangement	3.38
	1985	Stand-by Arrangement	0.42
	1988	Compensatory Financing	0.14

Sources: International Monetary Fund. various issues: *Annual Report* (Washington D.C.), International Monetary Fund. various issues: *IMF Press Release* (Washington D.C.) and Browne and Scott (1989)

Appendix 7

Raw Data - Fiji

Year	GDP	POPN	INV	CPI	X	M	GC	ER (FJ/US)	US CPI
1979	852.1	0.622	197.3	45.3	385.8	432.1	143.9	0.8357	65.6
1980	983.7	0.634	129.8	51.9	477.5	510.8	156.7	0.8180	75.0
1981	1056.1	0.646	280.0	57.7	454.4	606.6	173.1	0.8546	81.7
1982	1113.4	0.659	262.6	61.7	481.3	552.6	203.8	0.9324	84.6
1983	1142.2	0.672	239.3	65.9	498.1	560.1	231.6	1.0170	85.7
1984	1275.3	0.686	218.0	69.3	546.2	559.8	244.6	1.0826	87.4
1985	1316.5	0.700	239.1	72.4	583.6	588.6	252.4	1.1536	87.9
1986	1461.7	0.715	215.4	73.7	609.0	577.0	252.6	1.1329	85.8
1987	1465.2	0.723	229.9	77.9	663.9	616.3	255.1	1.2439	87.6
1988	1587.8	0.720	223.1	87.0	812.4	812.3	228.8	1.4303	89.9
1989	1861.4	0.720	249.3	92.4	1111.8	1062.7	281.6	1.4833	94.9

Data definitions and source

GDP = gross domestic product (millions of Fiji dollars), line 99b, *International Financial Statistics Yearbook* (1994), IMF.
POPN = population (millions) *UN ESCAP Statistical Yearbook* (1990), Bangkok.
INV = Investment (millions of Fiji dollars), line 93e, *International Financial Statistics Yearbook* (1994), IMF.
CPI = consumer price index (1990=100), line 64, *International Financial Statistics Yearbook* (1994), IMF.
X = exports (millions of Fiji dollars), line 90c, *International Financial Statistics Yearbook* (1994), IMF.
M = imports (millions of Fiji dollars), line 98c, *International Financial Statistics Yearbook* (1994), IMF.
GC = government consumption (millions of Fiji dollars), line 91f, *International Financial Statistics Yearbook* (1994), IMF.
ER = exchange rate, line ae, *International Financial Statistics Yearbook* (1994), IMF.
US CPI = United States consumer price index, line 64, *International Financial Statistics Yearbook* (1994), IMF.

Appendix 7 (continued)

Raw Data - PNG

Year	GDP	POPN	INV	CPI	X	M	GC	ER (US/KINA)	US- CPI
1979	1773	2.946	329	56.8	752	755	393	1.4916	65.6
1980	1855	3.011	397	61.4	747	923	436	1.4871	75.0
1981	1826	3.076	454	64.8	651	1001	481	1.3559	81.7
1982	1900	3.142	581	69.9	652	1073	496	1.1989	84.6
1983	2146	3.206	637	75.1	776	1145	499	1.1183	85.7
1984	2282	3.269	548	77.9	905	1219	532	1.0000	87.4
1985	2403	3.329	447	82.1	1021	1271	572	1.0296	87.9
1986	2572	3.411	539	84.9	1121	1321	591	1.1012	85.8
1987	2854	3.494	551	89.5	1232	1481	640	1.1538	87.6
1988	3170	3.560	737	93.5	1371	1646	663	1.1685	89.6
1989	3046	6.630	791	100.0	1238	1607	745	1.0467	94.9

Data definitions and source

GDP = gross domestic product (millions of PNG Kina), line 99b, *International Financial Statistics Yearbook* (1994), IMF.
POPN = population (millions) *UN ESCAP Statistical Yearbook* (1990), Bangkok.
INV = Investment (millions of PNG Kina), line 93e, *International Financial Statistics Yearbook* (1994), IMF.
CPI = consumer price index (1990=100), line 64, *International Financial Statistics Yearbook* (1994), IMF.
X = exports (millions of PNG Kina), line 90c, *International Financial Statistics Yearbook* (1994), IMF.
M = imports (millions of PNG Kina), line 98c, *International Financial Statistics Yearbook* (1994), IMF.
GC = government consumption (millions of PNG Kina), line 91f, *International Financial Statistics Yearbook* (1994), IMF.
ER = exchange rate, line ae, *International Financial Statistics Yearbook* (1994), IMF.
US CPI = United States consumer price index, line 64, *International Financial Statistics Yearbook* (1994), IMF.

Appendix 7 (continued)

Raw Data - The Solomon Islands

Year	GDP	POPN	INV	CPI	X	M	GC	ER(SI/US)	US CPI
1979	112.7	0.221	34.0	28.3	59.26	60.96	31.91	0.8298	65.6
1980	119.1	0.228	35.1	32.0	61.28	73.77	22.20	0.8702	75.0
1981	140.6	0.236	38.1	37.2	57.56	79.30	26.50	0.9711	81.7
1982	158.5	0.245	37.8	42.1	56.56	68.92	29.30	1.1486	84.6
1983	141.4	0.254	52.4	44.7	71.20	84.76	34.10	1.2737	85.7
1984	221.7	0.263	43.0	49.6	118.56	100.57	52.10	1.4808	87.4
1985	236.9	0.273	49.9	54.4	103.81	123.20	66.60	1.7415	87.9
1986	252.5	0.283	63.6	61.8	114.90	125.19	84.10	2.0083	85.8
1987	292.7	0.293	59.6	68.5	128.30	162.08	106.30	2.0825	87.6
1988	356.4	0.300	122.1	80.0	170.57	203.30	123.80	2.2932	89.6
1989	384.4	0.310	130.0	92.0	171.26	259.47	133.40	2.5288	94.9

Data definitions and source

GDP = gross domestic product (millions of Solomon Island dollars), line 99b, *International Financial Statistics Yearbook* (1994), IMF.
POPN = population (millions) *UN ESCAP Statistical Yearbook* (1990), Bangkok.
INV = Investment (millions of Solomon Island dollars), line 93e, *International Financial Statistics Yearbook* (1994), IMF.
CPI = consumer price index (1990=100), line 64, *International Financial Statistics Yearbook* (1994), IMF.
X = exports (millions of Solomon Island dollars), line 90c, *International Financial Statistics Yearbook* (1994), IMF.
M = imports (millions of Solomon Island dollars), line 98c, *International Financial Statistics Yearbook* (1994), IMF.
GC = government consumption (millions of Solomon Island dollars), line 91f, *International Financial Statistics Yearbook* (1994), IMF.
ER = exchange rate, line ae, *International Financial Statistics Yearbook* (1994), IMF.
US CPI = United States consumer price index, line 64, *International Financial Statistics Yearbook* (1994), IMF.

Appendix 7 (continued)

Raw Data - Western Samoa

Year	GDP	POPN	INV	CPI	X	M	GC	ER (US/TALA)	US CPI
1979	90.0	0.155	41.8	25.2	14.98	60.95	16.90	1.2205	65.6
1980	103.0	0.156	34.1	33.5	15.83	57.45	18.20	1.0876	75.0
1981	108.9	0.157	42.3	40.4	11.15	58.40	20.60	0.9649	81.7
1982	130.4	0.157	32.9	47.8	16.25	60.11	24.30	0.8297	84.6
1983	154.4	0.158	42.3	55.7	27.41	75.10	21.90	0.6496	85.7
1984	181.2	0.159	53.5	62.3	36.78	93.29	30.10	0.5441	87.4
1985	191.2	0.159	54.3	67.9	36.18	115.07	35.00	0.4457	87.9
1986	201.1	0.160	51.2	71.8	23.50	105.37	41.10	0.4474	85.8
1987	221.1	0.161	62.6	75.1	24.97	131.00	43.20	0.4716	87.6
1988	295.8	0.162	63.0	81.5	31.40	157.30	42.60	0.4810	89.6
1989	309.6	0.163	64.0	86.8	29.21	171.22	51.40	0.4408	94.9

Data definitions and source

GDP = gross domestic product (millions of Western Samoan Tala), line 99b, *International Financial Statistics Yearbook* (1994), IMF.
POPN = population (millions) UN ESCAP Statistical Yearbook (1990), Bangkok.
INV = Investment (millions of Western Samoan Tala), line 93e, *International Financial Statistics Yearbook* (1994), IMF.
CPI = consumer price index (1990=100), line 64, *International Financial Statistics Yearbook* (1994), IMF.
X = exports (millions of Wester Samoan Tala), line 90c, *International Financial Statistics Yearbook* (1994), IMF.
M = imports (millions of Western Samoan Tala), line 98c, *International Financial Statistics Yearbook* (1994), IMF.
GC = government consumption (millions of Western Samoan Tala), line 91f, *International Financial Statistics Yearbook* (1994), IMF.
ER = exchange rate, line ae, International Financial Statistics Yearbook (1994), IMF.
US CPI = United States consumer price index, line 64, *International Financial Statistics Yearbook* (1994), IMF.

Appendix 8

IMF Facilities and Policies

The facilities and policies through which the IMF provides financial support to its members differ, depending on the nature of the macroeconomic and structural problems they seek to address and the degree of conditionality attached to them. The IMF financing facilities are as follows.

1. Tranche Facility.

The IMF's credit is made available to members in tranche or segments of 25 percent of quota. For first credit tranche purchases, members are required to demonstrate reasonable efforts to overcome their BOP difficulties. There are no performance criteria and the total amount is repurchased in three and a quarter to five years. Upper credit tranche purchases are normally associated with stand-by arrangements. These typically cover periods of one to two years and focus on macroeconomic policies - such as fiscal, monetary, and exchange rate policies - aimed to overcoming BOP difficulties. Performance criteria to assess policy

implementation such as a budgetary and credit ceilings, reserve and external debt targets, and avoidance of restrictions on current payments and transfers are applied during the period of arrangement and purchases are made in instalments.

2. Extended Fund Facility

Under this facility, IMF supports medium-term programmes that generally run for three years (up to four years in exceptional circumstances), and are aimed at overcoming BOP difficulties. Performance criteria are applied, and repurchases are made in four and half to ten years.

3. Systemic Transformation Facility.

This is a temporary facility created in response to the needs of Russia and other economies in the transition experiencing BOP disequilibrium. It was created in April 1993. Access to the facility is limited to not more than 50 percent of quota and can be in addition to any financing obtained under other IMF facilities.

4. Compensatory and Contingency Financing Facility

The purpose of this facility is twofold. The compensatory-element provides resources to members to cover shortfalls in export earnings and services, receipts and excesses in cereal import costs that are temporary and arise from events beyond their control. The contingency element helps members to maintain the momentum of reforms when faced with a broad range of unforeseen, adverse external shocks, such as declines in export prices, and fluctuations in interest rates. Repurchases are made in three and a quarter to five years.

5. Buffer Stock Financing Facility.

Under this facility the IMF provides resources to help finance members' contributions to approved buffer stocks. Repayments are made within three and a quarter to five years.

6. Emergency Assistance

The purpose of emergency assistance is to help members meet BOP problems

arising from sudden unforeseeable natural disasters. Such purchases do not involve performance criteria or the hazing of disbursements and must be repurchased in three and a quarter to five years.

7. Structural adjustment Facility (SAF) arrangements.

These provide resources on concessional terms to support medium-term macroeconomic adjustment and structural reforms in low-income countries facing protracted BOP problems. The member develops and updates, with the help of the IMF and the World bank, a medium -term policy framework for a three year period, which is set out in policy framework paper. Within this framework, detailed yearly policy programmes are formulated, supported by SAF arrangements, under which annual loan disbursements are made. The programmes include quarterly bench marks to assess performance. The rate of interest on SAF loans is 0.5 percent and repayments are made on five and a half to tens years.

8. Enhanced Structural Adjustment Facility (ESAF)

The objectives, conditions for eligibility, and programme features under these

arrangements are similar to those under SAF arrangements. However, ESAF arrangement differ in scope and strength of structural policies, and terms of access levels, monitoring procedures, and sources of funding.

Appendix 9

Raw Data - Fiji

Year	ER	DC	I	X	M	REV	EXP	CPI	BOP
1980 1	1.1632	211.9	12.0	52.63	100.20	60091	49483	109.4	15.26
2	1.2400	223.5	12.0	46.19	117.51	51728	58194	114.2	12.08
3	1.2545	215.7	12.0	92.39	124.86	62780	52205	116.5	8.60
4	1.2641	231.6	12.0	92.38	116.18	58032	63237	120.6	4.25
1981 1	1.2209	224.7	13.5	47.06	125.22	64770	50757	124.3	-8.96
2	1.1510	265.7	13.5	41.83	131.56	61184	56474	126.5	-7.09
3	1.1169	266.7	13.5	107.41	137.86	65706	54543	129.7	-5.05
4	1.1234	267.7	13.5	73.15	145.36	67790	77808	132.3	-2.50
1982 1	1.0864	280.1	9.5	43.53	105.72	66759	59032	134.0	-8.43
2	1.0654	311.4	9.5	41.54	112.59	55122	64688	135.2	-6.67
3	1.0399	313.0	9.5	97.91	123.94	65350	67394	137.9	-4.75
4	1.0556	333.7	9.5	84.58	133.34	71106	82109	140.6	-2.35
1983 1	0.9886	330.0	9.5	54.30	110.34	73215	70450	144.4	-8.43
2	0.9662	346.6	9.5	38.39	120.94	69906	73271	145.1	-6.67
3	0.9631	362.7	9.5	88.45	132.80	69235	72857	146.9	-4.75
4	0.9558	381.5	10.17	63.88	129.10	74335	87528	147.3	-2.35
1984 1	0.9710	381.4	10.67	51.14	114.62	76264	71452	152.3	-7.40
2	0.9320	426.4	10.83	46.43	121.70	75922	77498	154.3	-26.40
3	0.8872	410.8	11.0	94.81	121.17	79981	78199	152.4	9.50
4	0.8749	412.6	11.0	86.72	129.50	93145	117279	156.0	31.80
1985 1	0.8499	405.9	11.0	51.18	119.77	83809	72532	160.0	1.30
2	0.8513	418.8	11.0	56.84	123.19	81073	94872	159.7	-0.80
3	0.8947	416.0	11.0	96.11	121.79	82947	97889	160.0	8.80
4	0.9039	420.0	11.0	68.04	121.58	91030	104030	160.6	-13.90

Appendix 9

Raw Data - Fiji

Year	ER	DC	I	X	M	REV	EXP	CPI	BOP
1986 1	1.0910	442.4	13.5	51.86	111.50	87341	72587	101.1	4.63
2	1.1174	479.0	13.5	48.56	104.90	79081	102670	101.7	4.33
3	1.1688	461.2	13.5	102.36	116.40	79907	52820	101.4	9.14
4	1.1453	472.0	13.5	109.71	163.99	101863	112906	102.9	9.80
1987 1	1.0868	498.0	13.5	64.90	124.14	93954	80951	104.8	-36.0
2	1.3051	534.2	13.5	82.58	104.95	83698	109467	105.1	-45.0
3	1.2794	577.6	13.5	86.46	115.86	77081	92101	108.1	-36.5
4	1.4405	541.3	13.5	172.07	120.64	86514	111384	112.4	54.9
1988 1	1.4395	537.0	24.3	84.89	124.03	68988	81375	117.6	36.9
2	1.4370	518.9	24.3	96.79	164.04	115619	92804	119.3	11.7
3	1.4682	528.6	20.9	165.42	164.27	92713	122918	120.5	17.2
4	1.4049	501.3	12.29	171.01	203.41	112369	137484	123.6	46.2
1988 1	1.4482	551.2	11.97	102.15	195.97	112289	108914	125.7	-3.0
2	1.5286	594.0	11.58	101.62	223.37	102278	106290	127.0	-26.1
3	1.5022	630.4	11.52	162.25	243.84	112673	105470	128.0	6.1
4	1.4939	661.9	11.50	185.42	251.65	134436	133706	129.9	9.2
1990 1	1.5413	717.0	11.56	164.32	232.89	125637	104988	135.1	-3.7
2	1.5004	751.2	11.62	161.00	224.49	122158	128692	137.0	1.4
3	1.4323	785.1	12.07	228.43	327.10	141080	115018	138.3	34.9
4	1.4592	780.8	12.20	232.12	312.48	149328	151961	142.0	3.2
1991 1	1.4854	840.6	12.46	120.94	230.07	122987	110961	146.0	15.9
2	1.5049	896.9	12.12	95.23	221.46	145711	140523	145.5	-21.9
3	1.4736	959.2	12.20	158.52	233.84	133454	142784	148.2	-44.2
4	1.4728	961.4	12.21	179.99	262.45	161629	156688	148.6	59.7

Appendix 9

Raw Data - Fiji

Year	ER	DC	I	X	M	REV	EXP	CPI	BOP
1992 1	1.4972	992.1	12.32	117.63	217.31	128621	126208	150.2	-5.8
2	1.4728	1040.3	12.37	99.80	221.09	145312	150610	150.7	3.3
3	1.5033	1045.3	12.36	157.26	254.09	154807	146891	158.1	45.8
4	1.5645	1081.1	12.37	167.06	245.95	121848	176707	158.0	10.1

Data definition and source

ER = Exchange rate, 1980(1)-1985(4) is US/Fiji and 1986(1)-1992(4) is Fiji/US. Line ae, *International Financial Statistics* (various quarterly issues), IMF.
DC = Domestic credit (millions of Fiji dollars), line 32, *International Financial Statistics* (various quarterly issues), Washington, D.C.
I = Interest rate lending (percent), line 60p, *International Financial Statistics* (various quarterly issues), Washington, D.C.
X = Exports (millions of Fiji dollars), line 70, *International Financial Statistics* (various quarterly issues), Washington, D.C.
M = Imports (millions of Fiji dollars), line 71, *International Financial Statistics* (various quarterly issues), Washington, D.C.
REV = Government revenues (thousands of Fiji dollars), *Current Economic Statistics* (various issues), Bureau of Statistics, Suva.
EXP = Government expenditure (thousands of Fiji dollars), *Current Economic Statistics* (various issues), Bureau of Statistics, Suva.
CPI = Consumer price index (domestic), 1980(1)-85(4), 1979=100 and 1986(1)-92(4), 1985=100, line 64, *International Financial Statistics* (various quarterly issues), Washington, D.C.
BOP = Balance of payments, *Current Economic Statistics* (various issues), Bureau of Statistics, Suva.

Appendix 9

Raw Data - PNG

Year	ER	DC	I	X	M	REV	EXP	CPI	BOP
1980 1	1.4113	321.65	11.15	149.12	185.76	15424	25619	136.1	-46.8
2	1.5178	320.78	11.15	195.67	182.55	21361	51160	138.6	-37.8
3	1.5323	329.71	11.15	211.15	203.20	34854	37506	141.8	4.6
4	1.5531	318.87	11.15	137.50	215.30	72143	64721	147.8	-26.6
1981 1	1.5263	365.01	14.40	128.36	192.72	27367	53778	151.1	-57.0
2	1.4734	396.94	14.40	154.33	231.71	25488	51865	151.0	3.0
3	1.4541	353.18	14.40	141.35	212.26	27688	34124	151.9	10.0
4	1.4695	371.71	14.40	141.35	212.26	32925	82267	152.1	-24.0
1982 1	1.3796	424.90	12.25	103.36	187.07	29656	53778	112.1	-31.0
2	1.3536	454.87	12.25	135.26	241.72	21421	51865	111.9	-27.0
3	1.2945	414.83	12.25	170.87	200.33	23548	34124	114.0	101.0
4	1.3371	449.74	12.25	161.38	235.30	54176	82267	118.3	-46.0
1983 1	1.1824	487.29	12.25	140.51	218.55	25391	47620	119.9	-29.0
2	1.1621	484.89	11.92	163.11	229.87	181771	194181	120.7	6.0
3	1.1640	426.84	11.25	221.08	247.30	130484	52580	123.3	100.0
4	1.1422	456.43	10.92	163.48	241.40	22937	103841	128.3	5.0
1984 1	1.1781	453.72	10.31	176.06	252.41	53420	66499	132.3	-7.0
2	1.1224	482.77	10.75	213.66	234.54	41970	60430	130.2	8.0
3	1.0669	462.23	10.75	204.83	256.12	74765	69096	132.3	-13.0
4	1.0623	528.51	10.75	207.58	253.81	30783	98791	133.9	-25.0
1985 1	0.9842	551.43	10.75	199.81	236.06	27453	47351	135.6	-35.0
2	0.9758	571.51	10.75	225.93	266.93	53399	56306	135.6	-18.0
3	0.9617	561.47	10.75	212.87	251.50	32399	62656	136.0	34.0
4	0.9877	561.47	10.75	212.87	251.50	45968	101020	137.0	15.0

Appendix 9

Raw Data - PNG

Year	ER	DC	I	X	M	REV	EXP	CPI	BOP
1986 1	1.0357	669.58	12.67	228.60	237.80	25191	55137	103.7	-4.0
2	1.0381	712.32	13.23	262.50	255.40	66566	67168	104.5	-26.0
3	1.0271	714.78	11.70	293.80	283.30	54052	76414	106.3	27.0
4	1.0404	744.39	11.73	235.20	260.90	37005	97003	107.3	-59.0
1987 1	1.0970	774.24	11.27	208.30	265.70	99441	60189	107.7	-22.8
2	1.1103	833.47	12.08	246.10	250.70	51700	65381	108.1	-5.0
3	1.1154	843.80	12.08	326.20	278.30	56117	53297	109.5	35.6
4	1.1384	799.30	12.33	355.80	311.70	138625	111885	110.6	-9.0
1988 1	1.1327	902.04	12.17	291.30	295.70	61397	70718	113.1	-17.0
2	1.1485	915.67	12.25	331.30	299.30	49409	76127	113.0	27.0
3	1.1359	989.05	12.25	281.70	340.70	50868	69374	114.6	-31.5
4	1.2100	1009.58	14.06	351.80	321.80	109707	129554	118.9	-21.9
1988 1	1.1876	1024.70	14.43	285.30	299.70	79386	84691	120.4	-4.0
2	1.1421	1062.45	14.64	286.20	340.10	74154	94167	119.1	-5.0
3	1.1565	1043.56	14.84	287.20	332.50	90593	82963	119.7	14.0
4	1.1633	1043.56	15.06	237.90	340.00	120258	135091	120.0	-17.0
1990 1	1.0222	1064.57	15.48	209.30	295.60	66236	43552	124.7	39.4
2	1.0400	1032.84	15.91	269.80	341.60	108556	98897	127.7	34.7
3	1.0701	1044.68	15.37	283.80	274.90	93170	68374	129.4	22.1
4	1.0493	1101.72	15.32	359.50	303.00	100381	127293	131.8	32.1
1991 1	1.0477	1158.51	14.69	216.90	335.00	53713	83051	135.1	-92.0
2	1.0414	1235.51	14.09	358.30	382.60	70722	85193	136.4	-51.0
3	1.0602	1335.50	13.73	352.00	382.00	64988	92035	138.5	-75.0
4	1.0498	1357.22	14.16	356.60	437.30	-	-	139.3	-72.6

Appendix 9

Raw Data - PNG

Year	ER	DC	I	X	M	REV	EXP	CPI	BOP
1992 1	1.0452	1338.01	14.65	306.50	420.60	-	-	141.1	-
2	1.0457	1378.77	14.87	353.00	392.60	-	-	142.2	-
3	1.0343	1452.77	14.74	508.20	333.50	-	-	143.5	-
4	1.0127	1521.24	13.87	562.90	321.50	-	-	146.2	-

Data definition and source

ER = Exchange rate (US/Kina), Line ae, *International Financial Statistics* (various quarterly issues), IMF.
DC = Domestic credit (millions of Kina), line 32, *International Financial Statistics* (various quarterly issues), IMF.
I = Interest rate lending (percent), line 60p, *International Financial Statistics* (various quarterly issues), IMF.
X = Exports (millions of Kina), line 70, *International Financial Statistics* (various quarterly issues), IMF.
M = Imports (millions of Kina), line 71, *International Financial Statistics* (various quarterly issues), IMF.
REV = Government revenues (thousands of Kina), *Abstract of Statistics* (various issues), Bureau of Statistics, PNG.
EXP = Government expenditure (thousands of Kina), *Abstract of Statistics* (various issues), Bureau of Statistics, PNG.
CPI = Consumer price index (domestic), 1980(1)-84(4), 1980=100 and 1985(1)-92(4), 1985=100, *Abstract of Statistics*, Bureau of Statistics, PNG.
BOP = Balance of payments (millions of Kina), *Abstract of Statistics* (various issues), Bureau of Statistics, PNG.

Appendix 9

Raw Data - The Solomon Islands

Year	ER	DC	I	X	M	REV	EXP	CPI	BOP
1980 1	1.1470	18826	-	14.39	13.40	2.22	1.70	122.10	-2.30
2	1.2294	19807	-	14.39	13.53	5.63	5.24	126.50	-1.95
3	1.2380	19733	-	14.39	13.60	5.87	6.22	132.20	-2.20
4	1.2458	2365	-	14.39	13.00	8.65	23.00	137.80	-2.57
1981 1	1.1557	23667	-	15.20	12.16	2.84	1.97	142.40	-1.68
2	1.1297	29196	-	15.20	13.56	7.21	6.07	150.80	-1.43
3	1.1157	24543	-	15.20	13.45	8.80	7.19	155.20	-1.61
4	1.1230	24943	-	15.20	13.44	11.07	26.60	156.20	-1.88
1982 1	0.9176	12.63	-	11.20	14.24	3.16	2.18	125.60	1.33
2	0.9313	14.82	-	13.53	17.52	8.01	6.73	130.80	1.13
3	1.0637	15.97	-	14.87	19.33	9.78	7.98	123.70	1.27
4	1.0449	16.24	-	16.96	17.87	12.30	29.50	135.90	1.48
1983 1	1.1311	19.72	-	11.75	19.18	3.26	2.35	137.10	1.20
2	1.1557	15.17	-	12.62	16.16	8.28	7.24	138.80	1.12
3	1.1858	11.16	-	21.72	23.66	10.10	8.59	142.20	1.15
4	1.2214	7.80	-	25.13	25.77	12.71	31.76	144.10	1.34
1984 1	1.2212	6.96	-	25.16	18.65	4.53	2.64	148.50	-2.40
2	1.2811	6.27	-	33.88	23.09	11.50	8.15	153.50	-2.04
3	1.3194	5.04	-	31.13	28.65	14.03	9.67	160.30	-2.29
4	1.3435	19.20	-	28.40	30.21	17.15	35.77	161.40	-2.68
1985 1	1.3895	21.90	-	20.60	25.02	5.05	3.44	166.00	-3.77
2	1.5013	30.38	-	28.10	32.05	12.82	10.60	170.10	-3.21
3	1.5645	27.78	-	29.00	29.00	15.64	12.61	120.00	-3.61
4	1.4071	23.07	-	30.00	28.00	19.68	46.61	103.00	-4.22

Appendix 9

Raw Data - The Solomon Islands

Year	ER	DC	I	X	M	REV	EXP	CPI	BOP
1986 1	1.6281	78.67	14.50	18.77	24.75	5.42	0.52	105.10	-4.67
2	1.7164	81.65	15.00	28.20	31.49	13.76	13.95	113.10	-3.97
3	1.8248	84.55	15.00	31.64	41.64	16.79	16.55	116.10	-4.47
4	1.9865	71.96	16.00	36.27	27.32	21.13	61.19	120.00	-5.22
1987 1	1.9841	80.17	16.00	21.90	29.65	6.60	5.90	123.20	-1.68
2	2.0259	87.56	17.33	31.19	41.28	16.74	18.23	121.20	-1.43
3	2.0206	68.93	18.00	40.42	40.25	20.42	21.63	127.50	-1.61
4	1.9743	81.89	18.00	34.79	50.75	25.70	79.96	132.30	-1.88
1988 1	2.0329	85.27	18.00	19.49	61.11	7.83	6.50	141.20	-1.30
2	2.1277	96.71	18.00	46.43	62.81	19.87	2.04	143.90	-1.11
3	2.1664	81.73	18.00	51.14	61.85	24.24	23.78	149.60	-1.24
4	2.0925	91.14	18.00	53.31	58.17	30.50	87.93	154.00	-1.45
1988 1	2.1786	103.65	18.00	31.66	58.77	10.86	6.81	167.00	-3.44
2	2.3624	104.01	18.00	40.16	59.62	27.55	21.03	167.20	-2.93
3	2.3810	112.11	18.00	47.70	58.45	33.61	24.95	169.10	-3.29
4	2.3962.	123.31	18.00	53.31	59.00	42.29	92.25	173.20	-3.85
1990 1	2.5050	143.19	18.00	37.31	58.62	11.67	7.86	179.70	-3.49
2	2.5265	152.96	18.00	42.01	54.64	29.59	24.30	180.90	-2.97
3	2.5543	151.65	18.00	50.19	60.43	36.10	28.20	184.00	-3.34
4	2.6137	162.28	18.00	46.48	59.52	45.44	106.57	191.10	-3.90
1991 1	2.6838	169.75	18.58	39.54	-	12.58	10.89	203.60	-3.21
2	2.7293	189.27	19.75	57.80	-	31.90	33.59	211.50	-2.73
3	2.7495	195.44	19.75	64.79	-	38.92	39.85	215.30	-3.07
4	2.7949	210.32	19.75	-	-	48.98	147.34	215.90	-3.59

Appendix 9

Raw Data - The Solomon Islands

Year	ER	DC	I	X	M	REV	EXP	CPI	BOP
1992 1	2.8736	211.02	19.75	-	-	-	-	225.50	-
2	2.9112	207.14	19.75	-	-	-	-	234.30	-
3	2.9516	212.32	19.75	-	-	-	-	237.10	-
4	3.1027	220.60	19.75	-	-	-	-	240.50	-

Data definition and source

ER = Exchange rate (US/Solomon Islands for 1980-81 and 1982-92 is Solomon Islands/US), Line ae, *International Financial Statistics* (various quarterly issues), IMF and *Statistical Yearbook* (1983), Department of Statistics, The Solomon Islands.

DC = Domestic credit (1980-81 is thousands of Solomon Island dollars and 1982-92 is millions of Solomon Island dollars), line 32, *International Financial Statistics* (various quarterly issues), IMF and Statistical Yearbook (1983), Department of Statistics, The Solomon Islands.

I = Interest rate lending (percent), line 60p, *International Financial Statistics* (various quarterly issues), IMF.

X = Exports (millions of Solomon Island dollars), line 70, *International Financial Statistics* (various quarterly issues), IMF.

M = Imports (millions of Solomon Island dollars), line 71, *International Financial Statistics* (various quarterly issues), IMF.

REV = Government revenues (millions of Solomon Island dollars), *Department of Statistics* (unpublished), The Solomon Islands.

EXP = Government expenditure (millions of Solomon Island dollars), *Department of Statistics* (unpublished), The Solomon Islands.

CPI = Consumer price index (domestic), 1980(1)-85(4), 1980=100 and 1986(1)-92(4), 1985=100, *Statistical Yearbook* (1983) and International Financial Statistics (various quarterly issues), IMF.

BOP = Balance of payments (millions of Solomon Island dollars), *Department of Statistics* (unpublished), The Solomon Islands

Appendix 9

Raw Data - Western Samoa

Year	ER	DC	I	X	M	CPI	BOP
1980 1	1.0547	27.12	10.50	2405	13153	161.8	-0.54
2	1.1060	26.53	10.50	6134	14209	176.8	-0.50
3	1.0978	32.56	10.50	3696	17560	187.4	-0.57
4	1.0762	36.00	10.50	3593	12517	199.8	-0.83
1981 1	0.9912	41.00	11.00	2215	15363	215.0	-1.26
2	0.8811	43.00	11.00	2527	22094	222.4	-1.18
3	0.8672	46.00	11.00	2435	17673	145.0	-1.34
4	0.8561	49.00	11.00	2344	14365	136.0	-1.92
1982 1	0.8462	51.75	11.50	2204	13438	136.2	-0.71
2	0.8201	56.63	12.25	2957	15070	141.3	0.66
3	0.7923	57.68	12.25	4548	17015	147.0	-0.75
4	0.8083	61.60	12.25	5371	14592	145.8	-1.07
1983 1	0.6463	62.92	12.25	4807	16133	149.2	1.60
2	0.6179	63.49	12.25	5466	19266	159.0	1.49
3	0.6202	61.01	17.50	5582	22435	175.6	1.69
4	0.6172	58.87	17.50	9628	22608	180.0	2.43
1984 1	0.6295	58.85	17.50	6476	21397	181.0	1.60
2	0.5738	55.15	17.50	6968	21079	180.6	1.49
3	0.4707	58.57	17.50	10318	26548	187.5	1.69
4	0.4581	60.94	17.50	12058	24278	193.9	2.44
1985 1	0.4438	61.00	17.50	8836	23871	200.7	1.16
2	0.4379	59.00	17.50	8090	28287	199.9	1.08
3	0.4599	60.00	17.50	8470	28899	202.9	1.23
4	0.4336	59.00	17.50	7060	30326	207.1	1.76

Appendix 9

Raw Data - Wester Samoa

Year	ER	DC	I	X	M	CPI	BOP
1986 1	0.4424	58.00	20.30	7515	23706	105.0	1.64
2	0.4597	57.86	19.00	5795	24710	106.1	1.52
3	0.4403	58.57	18.50	5188	33489	106.1	1.73
4	0.4550	48.33	17.50	5500	23470	105.6	2.49
1987 1	0.4697	43.03	17.50	5912	27808	107.8	1.91
2	0.4710	46.75	17.50	4769	31619	108.6	1.77
3	0.4854	46.77	17.50	5790	36795	110.1	2.01
4	0.4973	33.22	17.50	8497	34788	115.8	2.90
1988 1	0.4855	29.28	17.50	7448	30236	118.6	2.20
2	0.4446	28.67	17.50	6455	41454	121.8	2.08
3	0.4559	18.97	17.50	7580	31934	120.1	2.36
4	0.4655	14.88	17.50	10333	53672	119.5	3.41
1988 1	0.4486	5.91	17.00	7320	36516	123.9	2.24
2	0.4296	7.44	17.00	8545	40630	123.8	2.08
3	0.4350	3.57	17.00	5993	36817	129.1	2.37
4	0.4367	2.30	17.00	5555	36142	134.2	3.41
1990 1	0.4269	10.72	15.30	5072	41771	143.0	3.21
2	0.4292	9.46	12.00	5934	40550	149.6	2.98
3	0.4416	3.47	12.00	4642	47217	149.8	3.39
4	0.4286	0.02	13.70	4846	43878	146.3	4.48
1991 1	0.4213	26.19	15.00	3913	51598	147.3	-
2	0.4181	33.66	15.00	5570	51871	142.5	-
3	0.4157	22.94	15.00	3998	66302	144.6	-
4	0.4083	10.82	14.00	2571	60357	146.2	-

Appendix 9

Raw Data - Western Samoa

Year	ER	DC	I	X	M	CPI	BOP
1992 1	0.4124	13.66	13.50	3096	72419	156.9	-
2	0.4092	16.93	13.50	2177	63922	158.9	-
3	0.4031	9.80	12.50	4406	74493	158.1	-
4	0.3910	3.88	12.00	4670	67558	156.3	-

Data definition and source

ER = Exchange rate (US/Tala), Line ae, *International Financial Statistics* (various quarterly issues), IMF.
DC = Domestic credit (millions of Tala), line 32, *International Financial Statistics* (various quarterly issues), IMF.
I = Interest rate lending (percent), *Quarterly Statistical Bulletin*, Department of Statistics, Western Samoa.
X = Exports (thousands of Tala), line 70, *International Financial Statistics* (various quarterly issues), IMF.
M = Imports (thousands of Tala), line 71, *International Financial Statistics* (various quarterly issues), IMF.
REV = Government revenues and EXP = Government expenditure were not available.
CPI = Consumer price index (domestic), 1980(1)-85(4), 1980=100 and 1986(1)-92(4), 1985=100, *Quarterly Statistical Bulletin* (various issues), Department of Statistics, Western Samoa.
BOP = Balance of payments, *Department of Statistics* (unpublished), Western Samoa.

Appendix 10. *Regression Results - Growth Model*

Variables	Fiji	PNG	Solomon Islands	Western Samoa
Constant	-0.48 (-0.10)	1.51 (0.47)	-1.17 (-0.20)	1.05 (0.15)
GDP_{t-1}	-0.21 (-0.97)	-0.41 (-2.48)*	-0.49 (-3.13)*	-0.48 (-3.33)*
ER_{t-1}	6.34 (0.40)	-20.79 (-1.35)***	-1.28 (-0.12)	5.10 (0.59)
FP_{t-1}	0.003 (0.72)	0.0002 (0.059)	0.0037 (0.0054)	---
I_{t-1}	0.41 (0.24)	0.24 (1.28)	---	0.071 (0.31)
DC_{t-1}	0.49 (0.82)	-0.58 (1.78)**	0.035 (0.75)	0.22 (1.85)**
ED_{t-1}	-0.02 (-0.16)	-0.0009 (-0.02)	-0.50 (-2.24)*	-0.43 (-2.12)*
N	52	46	43	44
F	0.81	1.94	9.86	3.36
Adjusted R^2	-0.02	0.11	0.51	0.22
Dh[1]	-0.065	-0.015	-0.003	-6.50
JB (χ^2)[2]	19.79	5.41	8.45	1.17
ARCH (χ^2)[3]	0.52	0.002	0.99	1.16
RESET(2)[4]	1.11	0.16	2.14	0.18
CHOW[5]	2.01	-5.01	0.33	2.37

* Significant at the 1 percent level using the one-tailed test.
** Significant at the 5 percent level using the one-tailed test.
*** Significant at the 10 percent level using the one-tailed test.

1. Durbin-h test for autocorrelation.
2. Jarque-Bera test for normality of residuals.
3. Engle's autoregressive conditional heteroscedasticity test for residuals.
4. Ramsey's RESET test for functional form mis-specification.
5. Chow test for parameter stability.

Appendix 11 *Regression Results - Balance of Payments Model*

Variables	Fiji	PNG	Solomon Islands	Western Samoa
Constant	-43.34 (-0.54)	-69.46 (-0.51)	-2.92 (-0.13)	-4.27 (-0.085)
BOP_{t-1}	0.13 (0.21)	-0.63 (-4.46)*	-0.74 (-5.94)	0.34 (2.18)*
ER_{t-1}	97.70 (0.35)	-24.99 (-0.040)	-7.59 (-0.18)	-3.14 (-0.070)
FP_{t-1}	-0.45 (-1.11)	-0.047 (-0.41)	-1.92 (-0.71)	---
I_{t-1}	-75.64 (-2.52)*	-9.79 (-1.25)	---	-2.65 (-2.40)*
DC_{t-1}	-0.84 (-0.082)	24.20 (1.80)**	-0.13 (-0.72)	-0.57 (-0.51)
ED_{t-1}	1.78 (1.16)	-0.36 (-1.59)***	0.33 (0.80)	0.29 (0.32)
N	52	46	43	44
F	5.68	8.47	9.31	1.60
Adjusted R^2	0.36	0.50	0.50	0.07
Dh^1	-0.016	0.21	0.81	-0.004
$JB\ (\chi^2)^2$	43.01	7.12	34.33	8.62
$ARCH\ (\chi^2)^3$	0.60	1.11	0.63	7.84
$RESET(2)^4$	6.67	12.71	0.34	3.51
$CHOW^5$	0.11	-4.57	1.91	2.69

* Significant at the 1 percent level using the one-tailed test.
** Significant at the 5 percent level using the one-tailed test.
*** Significant at the 10 percent level using the one-tailed test.

1. Durbin-h test for autocorrelation.
2. Jarque-Bera test for normality of residuals.
3. Engle's autoregressive conditional heteroscedasticity test for residuals.
4. Ramsey's RESET test for functional form mis-specification.
5. Chow test for parameter stability.

Appendix 12. *Regression Results - Inflation Model*

Variables	Fiji	PNG	Solomon Islands	Western Samoa
Constant	0.50 (1.35)***	-0.39 (-0.21)	4.12 (2.52)*	3.48 (4.96)*
IFN_{t-1}	-0.65 (-6.16)*	-0.56 (-3.04)*	-0.34 (-2.16)*	-0.97 (-6.03)*
ER_{t-1}	-5.03 (-3.87)*	16.71 (1.69)**	-1.80 (-0.60)	0.36 (0.55)
FP_{t-1}	-0.004 (-0.11)	-0.0006 (-0.33)	-0.006 (-0.036)	---
I_{t-1}	0.055 (0.68)	-0.20 (-1.52)***	---	-0.004 (-0.24)
DC_{t-1}	-0.040 (0.88)	0.33 (1.68)**	-0.002 (-0.20)	0.032 (1.75)***
N	52	46	43	44
F	10.22	3.94	1.57	10.87
Adjusted R^2	0.47	0.25	0.05	0.48
Dh^1	2.63	0.30	-0.006	2.22
$JB\ (\chi^2)^2$	6.53	127.79	1368.39	9.33
$ARCH\ (\chi^2)^3$	2.99	0.21	0.004	0.98
$RESET(2)^4$	11.79	17.24	1.99	0.002
$CHOW^5$	-7.35	-5.72	2.08	1.84

* Significant at the 1 percent level using the one-tailed test.
** Significant at the 5 percent level using the one-tailed test.
*** Significant at the 10 percent level using the one-tailed test.
1. Durbin-h test for autocorrelation.
2. Jarque-Bera test for normality of residuals.
3. Engle's autoregressive conditional heteroscedasticity test for residuals.
4. Ramsey's RESET test for functional form mis-specification.
5. Chow test for parameter stability.

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