

EXTERNAL DEBT AND GROWTH IN PACIFIC ISLAND COUNTRIES

1. INTRODUCTION

Since their independence in the second half of the last century, Pacific island countries (PICs) have received substantial grant assistance each year from their former colonial rulers and other developed countries. Such annual transfers, known as official development assistance (ODA), have been helpful to PICs in bridging their annual fiscal deficits and resource gaps between savings and investment. Annual ODA inflows have also served as a cushion against trade deficits, giving rise to current account surpluses. However, following changes in the priorities of the donor community in the late 1980s consequent to the end of the Cold War, annual ODA inflows declined over the period. These developments along with growing annual domestic budgetary deficits forced some PICs to borrow. As there were limits to domestic borrowing, some PICs resorted increasingly to borrowing from overseas, besides traditional, international funding agencies.

For the first time in its history in October 2006, Fiji, a small, open island country in the South Pacific region, carried out a bond issue in the international capital market for US\$150 million with a view to augmenting exclusively the country's international reserves and real resources, thus contributing to both interest rate and price stability. This raises the legitimate question whether overseas borrowing in the past had helped Fiji. There has been increasing concern about the intention to raise the external debt level, especially when the country faced a decline in exports in the wake of discontinuance of garment import quotas by the United States from January 2006 and the impending withdrawal of preferential treatment for Fiji's sugar exports to the European Union by 2008. Rise in debt level has implications. These relate to debt service obligations which, by drawing from the foreign exchange reserves accrued through exports of goods and services, would transfer greater real resources to creditors thereby leading to a reduction in domestic investment and growth.

The objective of this paper is to undertake an analysis of the nexus between external debt and growth in Fiji. The paper is organized on the following lines. The second section presents a brief review of the literature on the subject, while the third section reviews the trends; the fourth section outlines the modeling methodology employed for the study and reports the results; the fifth and final section presents some conclusions with policy implications.

2. LITERATURE SURVEY ON EXTERNAL DEBT AND GROWTH

External debt can be categorized into two: (i) external debt incurred by the government and by public enterprises, which is generally guaranteed by the government; and (ii) external debt incurred by private sector, which is generally non-guaranteed. If the government and government enterprises function like private sector enterprises, borrowing will be resorted to only when the rates of return of projects so financed are expected to be higher than the estimated cost of borrowing. In such circumstances, the loans can be serviced by returns from those investments. There is yet another condition, which has to be fulfilled. The project must contribute to foreign exchange earnings such that payments to overseas creditors in terms of interest and principal can be made in foreign exchange. Viewed in this light, a country should borrow from external sources only when the projects to be financed are expected to be both productive as well as capable of generating sufficient foreign exchange through incremental increase in export earnings.

It might be argued such an approach is restrictive. Based on the ground that macroeconomic management is more important, the argument, would run on the following lines: even if some of the projects fail, the better managed economics with relatively large international reserves would be able to service the debt; and in those economics with poor macroeconomic management, success of the externally funded projects by itself would not mean much, since lack of adequate external reserves would still lead to debt crisis (Gillis *et al.*, 1992).

A debt crisis would occur when the government does not have enough foreign exchange reserves to service the external debt. The crisis is further compounded when the country does not have enough foreign reserves to enable the private sector to convert its external debt service payments, from domestic to foreign currency, on its non-guaranteed external debt. Thus, there are two clear dimensions: first,

the government should be able to generate revenue for annual debt service payments and should have adequate international reserves for effecting conversion of incremental revenue into foreign exchange for servicing the outstanding debt stock. As noted earlier, even if the investments funded by external have failed, a well-managed economy would be able to meet its debt-servicing burden if it happens to have abundant foreign reserves. In the case of non-guaranteed private sector external debt, if projects funded through external debt, the consequences have to be squarely faced by the investors concerned. In the case of guaranteed private sector external debt, the consequences of failure of investments have to be borne by the government. In such circumstances, the opportunity costs of such transfers of external reserves are severe.

High debt levels would lead to a problem of grave consequences, known as debt overhang. When a country has a high level of external debt, private investors would be reluctant to invest further, fearing the likely imposition of additional taxes on businesses for servicing the debt (Kenen, 1990; Sachs, 1990). Hence, high debt can impair future investment and hurt growth through creating uncertainty and disincentives, which in turn would discourage capital formation. Additionally such circumstances would also result in repatriation of capital (Krugman, 1989). The only way then open would be to reduce the debt burden. Arguments on these lines have helped undertaking many initiatives by international funding agencies to explore ways and means ranging from re-scheduling of debt repayments to total forgiveness. Rajan (2005) notes rescheduling of debt would be appropriate more for the emerging economies than for other countries, since investors in the latter group of countries face far more significant impediments to investment, which include unfavourable business climate and uneven regulations.

Economic analysis of debt crisis would naturally take us to discuss the controversial relationship between external debt and economic growth (Cohen, 1995). While Kenen (1990), Sachs (1990) and Krugman (1989) believed burden imposed by repayments of external debt would be a major reason for long-term slow economic growth, Dornbusch (1988) turned his attention to the strain on the balance of payments caused by capital flight fearing government inability to meet high debt payments. The net beneficial effects of devaluation, as remedy for meeting the impact of capital flight would be negligible for small economies. Currency devaluation would raise the domestic currency costs of servicing external debt, besides worsening the budget deficits and raising the growth in

money supply; and this would result in increasing price levels and deterioration in terms of trade. Consequently the economy would register low growth (Dornbusch, 1988).

Bulow and Rogoff (1990) argued that external debts of developing countries were symptoms of poor economic management, rather than a primary cause of stifled growth. Poor economic management mainly consists of persistent fiscal deficits and inflationary financing and overvalued exchange rates, which would scare away both domestic and foreign investors.

Empirical studies have produced mixed results. Chowdhury (1994) rejected the Bulow and Rogoff proposition that external debt crisis was just a symptom of poor economic management. Further, his study did not find support for the Dornbusch (1988) and Krugman (1989) proposition that external debt leads to economic slow down. Scott (1994) in a study of 31-Sub Saharan African counters for the period of 1980-87 that debt crisis was due to low productivity of capital. Hojman (1986) in a study of Chile for the period of 1960-1982 found that external debt's contributions to output, productivity and employment were low and that it released more resources for consumption rather than for capital formation.

3. TRENDS IN FIJI'S EXTERNAL DEBT

Among the Pacific island countries (PICs) (Table 1), aid inflows to Kiribati, Tuvalu and Vanuatu were in the range of 35% to 40% of GDP, providing them much needed budgetary support. On the other hand, aid received by Fiji was much less, as it was less than 2% of GDP. Fiji's budget deficits were, therefore, financed through a mix of domestic and overseas borrowing. There were two distinct phases in the financing of domestic resource gaps. During the early years (1970-80) of its independence, Fiji's public sector investments in physical infrastructures, such as roads and power projects, were financed through external borrowing, mostly from international funding agencies, including Asian Development Bank and World Bank. Since Fiji has been categorized as a lower-middle income country, it is not eligible for special treatment which is extended to poor countries, such as loans on concessional terms (a low interest rate at 1%, a grace period of five to seven years of no payment of interest and installments of loan and a long maturity period of 30 to 40 years).

During Fiji's first ten years of independence since 1970, external debt was less than 10% of GDP. As investment momentum picked

TABLE 1 - *Fiji: General Key Indicators*

Surface Area (sq km)	18,270
Population (2005)	835,000
Total GDP at current prices (US \$ million) 2002	1,750
Per capita GDP in current price (US\$)	2,360
Human Development Index (Rank)	90
Aid per capita (US\$) 2002	41
Aid (% of GDP) 2002	1.8

Sources: ADB (2004; 2006), UNESCAP (2004), UNDP (2006).

up in the second half of the 1980s, external debt rose as well. This was the period when domestic investment increased from an earlier five-year (1971-75) average of 21% of GDP to reach a historically high figure at 34.3% of GDP in 1981. Table 2 presents a summary of trends in total government debt and external debt as proportions of GDP and other macroeconomic indicators.

The two military coups of 1987, which marked a watershed in the nation's history, signified a change in borrowing policy. The forced isolation of Fiji, due to international economic sanctions led the military backed government to reduce the external debt level. There were also two favourable factors at work: one by mid 1980s most of the major infrastructure projects, including a major hydropower project funded by external financing had been either completed or nearing completion; and secondly, Fiji had then accumulated comfortable international reserves level, which were around six months equivalent of imports of goods. The decision of the military backed government to reduce the external debt by advanced payment of installments was carried through by the elected governments in 1990 and in 1995 as well. The external debt level, defined as the outstanding debt stock (EDT) was reduced from about US\$ 443.7 million or 40% of GDP in 1985 to US\$ 246.1 million or 12.8% in 1990. In 2000, the ratio of EDT to GDP stood at level less than 10% in 2000 (Table 3).

There are many dimensions of external debt burden, which are exemplified by various debt indicators as shown in Table 3. First, EDT consists of two parts, long-term and short-term. Fiji's external debt is dominated by long-term debt, accounting for two thirds of total debt, signifying the emphasis on use of loans for public sector investment projects. Short-term loans are mostly for temporary accommodation. Secondly, loans on concessional terms comprise less than 20% of total EDT.

TABLE 2 - Fiji: Selected Key Economic Indicators

Years	Annual Growth (percent)	Annual Inflation (percent)	Budget Deficits (% of GDP)	Total Government Debt (% of GDP)	External Debt (% of GDP)	Current Account (% of GDP)	BOP overall Balance (% of GDP)	International Reserves (months of imports)	Exports of Goods and Services (% of GDP)
1975-1984 (Average)	2.6	9.0	5.8	24.2	10.1	-3.80	-1.3	6.2	45.1
1985-1994 (Average)	1.9	6.1	5.3	39.7	20.2	-6.64	2.1	6.1	46.9
1995-1999 (Average)	3.1	3.3	5.5	44.7	17.1	-0.15	2.1	6.4	56.9
2000	-1.7	3.0	6.6	41.2	8.4	-2.87	-0.9	7.1	60.2
2001	2.0	2.3	9.4	45.5	7.3	-7.74	1.2	6.2	72.6
2002	3.2	1.6	8.7	47.8	8.1	-0.14	2.3	6.1	59.7
2003	1.0	4.2	9.2	50.3	9.4	-7.79	-1.0	5.7	60.0
2004	5.3	3.3	6.9	50.2	8.1	-17.12	-2.2	5.0	54.0
2005	0.7	2.7	4.3	53.4	9.1	-16.65	4.7	4.0	58.3

Source: UNESCAP (2006), RBF (2006a, b), IMF (2006), ADB (2006).

Since EDT level came down over the period, total debt service cost (TDS), comprising interest and installment payments also decreased. The TDS, which was about US\$ 105.6 million in 1995, decreased to US\$ 14.6 million in 2004. Debt-servicing ability is influenced by foreign exchange capacity of the country, which is reflected in the country's total exports of goods and services (XGS). The debt-servicing ratio, which is the ratio of XGS, was once at the highest level in 1990 at 12.2%. It decreased steadily to less than 6% in subsequent years.

As Table 2 shows, economic growth has been uneven. The major reason is the lingering political uncertainty since 1987 and steady decline in exports and tourism earnings. Growth depended on exports of goods and services, comprising sugar and tourism, as they were the backbone of the economy. Fall in the ratio of XGS to GDP had been declining, causing concern to policy makers (Reserve Bank of Fiji, 2000b). For jumpstarting the economy, the elected government after a yet another coup in 2000, resorted to aggressive fiscal policy measures, resulting in annual budget deficits during 2001-2005. These annual deficits were financed by domestic borrowing, as there was excess liquidity. Soon limits to domestic borrowing were visible, as domestic interest rates rose. Government decided to diversify its borrowing and resorted to floating a first ever international bond in September 2006 for US\$ 150 million in Singapore. The bond, which was oversubscribed, served two purposes: preventing a further rise in domestic interest rate and adding to country's real resources in terms of foreign exchange.

4. EMPIRICAL MODELLING AND RESULTS

External borrowing being in terms of foreign exchange adds to real resources of the country. Hence, the use of loan proceeds in productive investment projects is expected to result in higher growth. Further, growth enhances the image of the country in the eyes of the creditors in particular, thereby enabling the country to borrow more, and on better terms, resulting in an increase in debt level. Additionally, growth which is positively associated with rise in exports of goods and services, leads to creation of new jobs in export oriented activities, stepping up income generation.

However, debt servicing has to be effected in foreign exchange. Since the debt servicing obligations associated with higher debt stock would lead to lower availability of foreign exchange for

TABLE 3 - External Debt and Debt Servicing: 1979-2004

	1970	1975	1980	1985	1990	1995	2000	2001	2002	2003	2004
Total Debt Stock (US\$ Million: EDT)	11.7	59.5	281.1	443.7	403.1	246.1	134.2	114.3	140.1	201.1	201.8
Debt Service (US\$ Million: TDS)	2.7	11.7	35.8	61.6	105.6	66.3	29.7	22.9	21.7	18.3	14.6
EDT (% of GDP)	5.6	8.8	23.7	40.1	31.3	12.8	8.1	7.3	8.1	9.1	8.1
EDT (% of Exports of Goods and Services)	NA	NA	47.1	91.7	45.7	21.6	40.7	40.2	44.4	NA	NA
Short Term Debt (as % of EDT)	0.0	0.0	12.9	4.3	2.9	5.9	11.6	13.9	26.2	42.1	37.3
Concessional Debt (as % of EDT)	14.5	18.4	21.4	4.5	7.4	8.5	14	15.2	18.7	16.5	17.9
Multilateral Debt (as % of EDT)	0.0	32.4	33.2	37.5	50.1	60.8	66.1	66.3	53.8	41.5	45.1
TDS (% of Exports of Goods and Services)	NA	NA	NA	11.7	12.2	5.8	6.3	5.5	5.9	NA	NA
Int.(% of GDP)	0.5	0.4	1.4	2.5	2.6	0.8	0.6	0.3	0.3	0.2	0.3
Int.(% of Exports of Goods and Services)	NA	NA	2.7	5.0	3.7	1.4	1.8	1.7	1.6	NA	NA

Source: World Bank (2006a).

domestic investment, higher debt level might hurt growth. Thus, the relationship between debt and growth is uncertain, as it might well be negative. Since the decision to borrow overseas is influenced by domestic budget deficits, it is hypothesized that budget deficits lead to rise in external debt. As a corollary, lower budget deficits might lead to higher growth, as there might be fall in upward pressure on domestic interest rates, which would promote private sector growth.

Arguing on the lines, the debt-growth relationship has been modeled as in equation (1):

$$GR_t = f(ED_t, BD_t, EXP_t) \quad (1)$$

In equation (1), GR is annual GDP growth rate (in percent); ED refers to external debt (as percent of GDP); BD is budget deficit (as percent of GDP); EXP represents exports of goods and services (as percent of GDP) and the subscript t refers to the relevant year. The study uses annual data, covering a 35-year period (1970-2004), which are drawn from two World Bank publications, Global Development Finance, (2006a) and World Development Indicators, (2006b).

For examining the existence of possible long-term relationships amongst GR , ED , BD and EXP , we resort to employment of the autoregressive distributed lag (ARDL) bounds testing approach proposed by Pesaran *et al.* (2001). This approach has several advantages: (i) it allows testing for the existence of a cointegrating relationship between variables in levels irrespective of whether the underlying regressors are $I(0)$ or $I(1)$; (ii) it is considered more appropriate than the Johansen-Juselius multivariate approach for testing the long-run relationship amongst variables when the data are of a small sample size (Pesaran *et al.*, 2001); and (iii) ARDL covers both the long-run and short-run relationships of the variables tested. The ARDL procedure has become increasingly popular in recent years and we begin the empirical analysis with this procedure¹.

¹ The empirical procedure is on the lines adopted by various recent studies. These include (i) Ghatak and Siddiki (2001) on India's exchange rate; (ii) Atkins and Coe (2002) on Fisher effect in the US and Canada; (iii) Bahmani-Oskooee and Ng (2002) on Hong Kong's money demand; (iv) Vita and Abbott (2002) on savings and investment in the US; (v) Bahmani-Oskooee and Goswami (2003) on J-curve in Taiwan; (vi) Pattichi and Kanaan (2004) on Balassa-Samuelson Hypothesis; (vii) Tang (2004) on Japan's money demand; (viii) Liu and Shu (2004) on stock market and consumption in selected Asian economies; (ix) Nieh and Wang (2005) on Taiwan's exchange rate determination; (x) Narayan and Smyth (2005) on Brunei's import demand function; and (xi) Choong *et al.* (2005) on foreign direct investment,

The test for cointegration is based on the following unrestricted error correction model (UECM) of the ARDL model pertaining to the four variables of interest:

$$\Delta GR_t = \beta_1 GR_{t-1} + \beta_2 ED_{t-1} + \beta_3 BD_{t-1} + \beta_4 EXP_{t-1} + \sum_{i=1}^{n1} \beta_5 \Delta GR_{t-i} + \sum_{i=0}^{n2} \beta_6 \Delta ED_{t-i} + \sum_{i=0}^{n3} \beta_7 \Delta BD_{t-i} + \sum_{i=0}^{n4} \beta_8 \Delta EXP_{t-i} + \varepsilon_t \quad (2)$$

where ε_t is the disturbance term. The null hypothesis of testing the long-run relationship of this model is $\beta_1 = \beta_2 = \beta_3 = \beta_4 = 0$, and the alternative hypothesis is at least one $\beta_j (j=1,2,3,4)$ does not equal to zero. If the computed F -statistic of ARDL bound testing is higher than the upper bound value, then we reject the null and conclude that there is a long-run equilibrium relationship among variables. In contrast, if the F -statistic is lower than the lower bound value, we cannot reject the null of no long-run equilibrium relationship among variables. However, if the F -statistic lies within the upper bound value and lower bound value, then the results are inconclusive.

The cointegration technique, which was developed and pioneered by Granger (1986), and Engle and Granger (1987), contributed a significant breakthrough towards testing short-run Granger-causality direction. If two variables (or more) are cointegrated, causality (in the Granger sense), must exist at least in one direction (Granger, 1986). We posit the following testing relationships within the vector error-correction model:

$$\begin{pmatrix} \Delta GR_t \\ \Delta ED_t \\ \Delta BD_t \\ \Delta EXP_t \end{pmatrix} = \begin{pmatrix} d_{11}(L) & d_{12}(L) & d_{13}(L) & d_{14}(L) \\ d_{21}(L) & d_{22}(L) & d_{23}(L) & d_{24}(L) \\ d_{31}(L) & d_{32}(L) & d_{33}(L) & d_{34}(L) \\ d_{41}(L) & d_{42}(L) & d_{43}(L) & d_{44}(L) \end{pmatrix} \begin{pmatrix} \Delta GR_t \\ \Delta ED_t \\ \Delta BD_t \\ \Delta EXP_t \end{pmatrix} + \begin{pmatrix} \delta_1 ECT_{t-1} \\ \delta_2 ECT_{t-1} \\ \delta_3 ECT_{t-1} \\ \delta_4 ECT_{t-1} \end{pmatrix} + \begin{pmatrix} c_1 \\ c_2 \\ c_3 \\ c_4 \end{pmatrix} + \begin{pmatrix} u_1 \\ u_2 \\ u_3 \\ u_4 \end{pmatrix} \quad (3)$$

where Δ is a difference operator, ECT represents the error-correction term derived from long-run cointegrating relationship via the ARDL model, $c_i (i=1,2,3,4)$ are constants, and $u_i (i=1,2,3,4)$ are serially uncorrelated random disturbance terms with mean zero.

Through the ECT, the VECM opens up an additional channel for Granger-causality to emerge. The long-run causality can be tested through the statistical significance of the lagged ECTs, $\delta_i (i=1,2,3,4)$ by a t -test while the short-run causality can be examined through

the statistical significance of a joint test applied to the sum of the lags of each explanatory variable, known as F - or Wald test.

As a starting point, all four variables in levels and their first differences were subjected to unit root examination using both Dickey-Fuller (ADF) (Dickey and Fuller, 1979) and Ng and Perron (2001) unit root tests. Table 4 presents the results of the tests for the levels and first differences of GR , ED , RD and RXP . It can be seen that all level variables are non-stationary at the 95 per cent level of confidence, except for budget deficit (BD) if ADF test is used. On the other hand, all variables are stationary in their first differences. We proceed to employ the bound test proposed by Pesaran *et al.* (2001), as this technique does not require the same order of each explanatory variable.

TABLE 4 - Results of Unit Root Tests

Variable	ADF		Ng-Perron	
	Level	First Difference	Level	First Difference
GR	-3.0879 (2)	-8.0153** (1)	-16.5495 (0)	-8.6292** (0)
ED	-1.2588 (0)	-4.6717** (0)	-2.6447 (1)	-16.8339** (0)
BD	-4.7612** (0)	-7.3014** (2)	-16.378 (0)	-15.7497** (0)
EXP	-3.3811 (2)	-6.7437** (0)	-11.2334 (0)	-17.5694** (0)

Note: The ADF critical value at 5% level is -2.9640 and -3.5629 for constant without trend (first difference) and constant with trend regressions (level), respectively. These critical values are based on McKinnon. The optimal lag is selected on the basis of Akaike Information Criterion (AIC). The Ng and Perron critical value is based on Ng and Perron (2001) critical value and the optimal lag is selected based on Spectral GLS-detrended AR based on SIC. The null hypothesis of the test is: a series has a unit root. The asterisk ** denotes the rejection of the null hypothesis at the 5% level of significance. The figures in brackets denote number of lags.

Results of the unrestricted error correction model (UECM), which are reported in Table 5, show that the calculated F -statistic of GR equation is statistically significant. Hence, the null hypothesis of no cointegration relationship is rejected. On the other hand, the calculated F -statistic in the equations of ED , RD and RXP is less than the respective lower bound value (either using both Pesaran *et al.*'s, 2001 or Narayan's, 2005 critical values), thus leading us to conclude that there is only one cointegration equation. The long-run estimated equation of GR is as follows:

$$GR = 0.021 - 0.158ED^{**} - 1.360BD^{***} + 0.232EXP^{**} \quad (4)$$

(0.45) (-2.59) (-3.55) (2.59)

Note: figures in parentheses are calculated "t" values.

** and *** indicate significance at 5 and 1 per cent levels.

In the equation (4), we find that the estimated coefficient of exports (*EXP*) is significant, confirming that it has a positive effect on economic growth. This finding indicates that in the long-run a high level of export earning capacity facilitates economic growth. On the other hand, the coefficients of both external debt and budget deficit are negative, indicating their negative influence on economic growth.

TABLE 5 - Bound Test for Cointegration Analysis

Dependent Variable		Computed F-statistic		
GR		29.68***		
ED		3.01		
BD		1.17		
EXP		0.24		
Critical Value	Pesaran <i>et al.</i> (2001) ^a		Narayan (2005) ^b	
	Lower bound value	Upper bound value	Lower bound value	Upper bound value
1 per cent	3.41	4.68	4.54	6.37
5 per cent	2.62	3.79	3.13	4.44
10 per cent	2.26	3.35	2.58	3.86

^a Critical values are obtained from Pesaran *et al.* (2001), Table CI(iii) Case III: unrestricted intercept and no trend, p. 300.

^b Critical values are obtained from Narayan (2005), Table Case III: unrestricted intercept and no trend, p. 1988.

*** indicates significance at 1% level.

Figures 1 and 2, present the CUSUM and CUSUMSQ statistics. The results indicate absence of any instability in the coefficients as the plot of the CUSUM and CUSUMSQ statistics are confined within the 5% critical bounds of parameter stability. Further, various diagnostic tests, relating to normality, autocorrelation, and heteroskedasticity in the error term, establish the validity of the regression models (Table 6)

FIGURE 1 - Plot of CUSUM Test

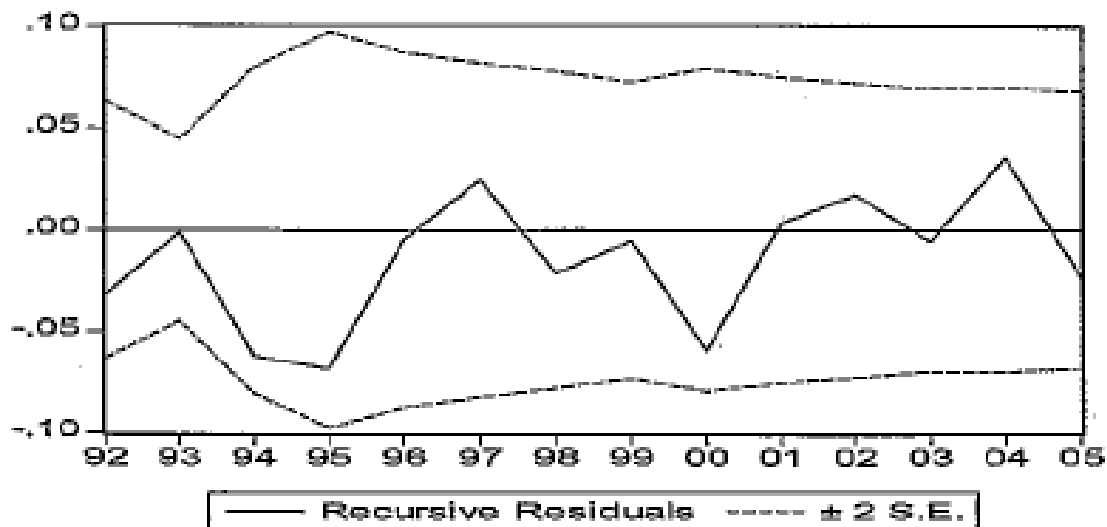
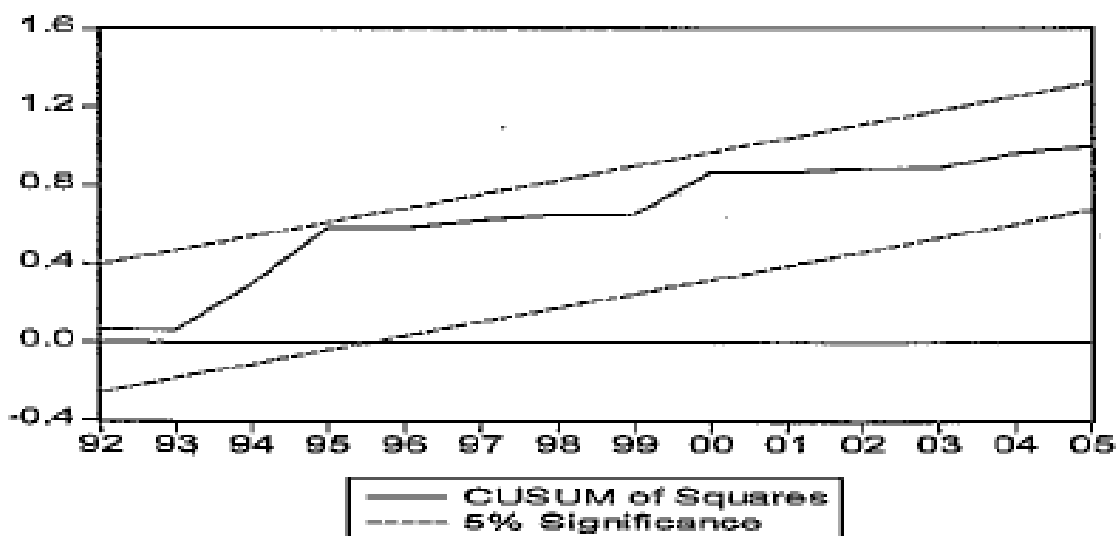


FIGURE 2 - Plot of CUSUM of Squares Test



In order to examine the direction of causality, we now turn to the results based on the VECM formulation, which are presented in Table 7. As shown in the last column of Table 7, we find that the error correction terms in *GR* and *EXP* equations are significant. Further, they have the correct sign, which implies that when there is a deviation from any long-run equilibrium cointegrating relationship, each explanatory variable endogenously adjusts to clear the disequilibrium. The speed of adjustment in *GR* equation (0.4454), however, is faster

than the corresponding one in *EXP* equation (0.0562). In contrast, the error correction term is not significant in other equations.

TABLE 6 - Diagnostic Tests for Equation (4)

Diagnostic Test	Null Hypothesis	Equation (4)
Jarque-Bera test	H_0 : Normality of error term	$\chi^2 = 0.3809$ [0.8265]
Breusch-Godfrey Serial Correlation LM Test	H_0 : No autocorrelation	$F(1) = 0.5141$ [0.4861]
ARCH Test	H_0 : Homoskedasticity	$F(1) = 0.4583$ [0.5047]
Ramsey RESET Test	H_0 : The model is correctly specified	$F(2) = 1.9088$ [0.1907]

Note: figures in square brackets are probability values of the test statistics. Figures in parentheses are the lag lengths used for the appropriate diagnostic tests

TABLE 7 - Granger Causality Tests

Dependent Variable	F-statistic				ECT (t-statistics)
	ΔGR	ΔED	ΔBD	ΔEXP	
ΔGR	-	5.17**	6.18**	0.97	-0.4454** (-2.63)
ΔED	5.41**	-	0.98	0.49	-0.0051 (-0.06)
ΔBD	0.50	0.27	-	1.10	-0.0035 (-0.03)
ΔEXP	2.75*	3.19**	13.58***	-	-0.0562*** (-3.59)

Note: *, ** and *** indicate significance at 10%, 5% and 1% levels, respectively. Figures in parentheses are calculated t-statistics.

Looking at the short-run causality, we observe that there is unidirectional causality running from *ED* and *BD* to *EX*, and *BD* to *GR*. Further, the results reveal that the growth-driven export hypothesis holds in Fiji, but not vice versa. Both *ED* and *BD* Granger cause economic growth and high rate of economic growth leads to high rate of exports growth. Although the export variable does not Granger cause economic growth in the short-run, it does promote economic growth in the long-run, as indicated by the error correction term in the *EXP* equation. This is consistent with the finding reported in equation (4). The results also indicate the existence of a bi-directional linkage between external debt and growth in the short-run. While

external debt results in growth, growth also enhances the credibility of the country as a debtor, which leads to higher level of debt.

5. SUMMARY AND POLICY IMPLICATIONS

This paper investigated the relationship between external debt and economic growth in Fiji during a 30-year period (1970-2005). Applying Pesaran's bound testing approach, (Pesaran *et al*, 2001), it is found that there is a long-run relationship running from external debt, budget deficit and exports to economic growth. The long-run estimated parameters indicate that both external debt and budget deficit have negative impact on economic growth while exports of goods and services have a positive effect on growth. As Borenzstein (1989: 55) argues, the impact of budget deficit on foreign debt depends primarily on its effect on the productive capacity of the traded sector in the long-run. If the external borrowing had been for investment in export activities, the effect of debt on growth would be positive. It is apparent that Fiji's past external loan proceeds were not properly employed in productive areas.

Policy implications are clear: it is imperative that Fiji needs to channel its future external borrowings into those activities promoting exports of goods and services, in which the country has a clear comparative advantage rather than for consumption of non-traded goods. This would enable Fiji to service its debt through export growth rather than by import compression. Since Fiji's current external debt level is not high, there are no immediate concerns. The fears of a debt overhang would become real only when export earnings become increasingly insufficient to service the debt, which would eventually lead to higher debt. Debt overhang theories suggest that large external debt causes a negative effect on investment (Keren, 1990; Sachs, 1990; Borenzstein, 1990). Implementing a prudent debt management policy now, therefore, becomes more urgent and critical, along with maintenance of macroeconomic stability and favourable business climate.

TIRU K. JAYARAMAN

*University of the South Pacific, Faculty of Business and Economics,
School of Economics, Suva, Fiji Islands*

CHEE-KEONG CHOONG

*University Tunku Abdul Rahman, Faculty of Accountancy and
Management, Department of Economics, Selangor, Malaysia*

REFERENCES

- ADB (2004), *Key Indicators of Asian and Pacific Developing Countries 2004*, Asian Development Bank: Manila.
- ADB (2006), *Key Indicators 2006*, Asian Development Bank: Manila.
- Atkins, F.J. and P.J. Coe (2002), "An ARDL Bounds Test of the Long-run Fisher Effect in the United States and Canada", *Journal of Macroeconomics*, 24(2), 255-266.
- Bahmani-Oskooee, M. and G.G. Goswami (2003), "A Disaggregated Approach to Test the J-curve Phenomenon: Japan versus her Major Trading Partners" *Journal of Economics and Finance*, 27(1), 102-113.
- Bahmani-Oskooee, M. and R.C.W. Ng (2002), "Long-run Demand for Money in Hong Kong: An Application of the ARDL Model", *International Journal of Business and Economics*, 1(2), 147-155.
- Borensztein, E.R. (1989), "Fiscal Policy and Foreign Debt", *Journal of International Economics*, 26(1-2), 53-75.
- Borensztein, E.R. (1990), "Debt Overhang, Credit Rationing, and Investment", *Journal of Development Economics*, 32(2), 315-335.
- Bulow, J. and K. Rogoff (1990), "Cleaning up the Third World Debt without Getting Taken to the Cleaners", *Journal of Economic Perspectives*, 4(1), 31-42.
- Choong, C.K., Z. Yusop and S.C. Soo (2005), "Foreign Direct Investment and Economic Growth in Malaysia: The Role of Domestic Financial Sector" *The Singapore Economic Review*, 50(2), 245-268.
- Chowdhury, K. (1994), "A Structural Analysis of External Debt and Economic Growth: Some Evidence from Selected Countries in Asia and Pacific", *Applied Economics*, 26(12), 1121-1131.
- Cohen, D. (1995), "Large External Debt and (Slow) Economic Growth: A Theoretical Analysis", *Journal of Economic Dynamics and Control*, 19(5-7), 1141-1163.
- Dickey, D.A. and W.A. Fuller (1979), "Distribution of the Estimation for Autoregressive Time Series with a Unit Root", *Journal of the American Statistical Association*, 74(366), 427-431.
- Dornbusch, R. (1988), *Our LDC Debts*, in: M. Felsitic (Ed.), "The United States in the World Economy", Chicago University Press: Chicago.
- Engle, R.F. and C.W.J. Granger (1987), "Cointegration and Error Correction: Representation, Estimation, and Testing", *Econometrica*, 55(2), 251-276.
- Ghatak, S. and J. Siddiki (2001), "The Use of the ARDL Approach in Estimating Virtual Exchange Rates in India", *Journal of Applied Statistics*, 28(5), 573-583.
- Gilis, M., D.H. Perkins, M. Romer and D.R. Snodgrass (1992), *Economics of Development*, W.W. Norton & Company: New York.

- Granger, C.W.J. (1986), "Developments in the Study of Cointegrated Economic Variables", *Oxford Bulletin of Economics and Statistics*, 48(3), 213-228.
- Hojman, D.E. (1986), "The External Debt Contribution to Output, Employment, Productivity and Consumption: A Model and an Application to Chile" *Economic Modelling*, 3(1), 53-68.
- IMF (2006), International Financial Statistics, CD ROM March 2006, International Monetary Fund: Washington, D.C.
- Kenen, P.B. (1990), "Organizing Debt Relief: The Need for a New Institution", *The Journal of Economic Perspectives*, 4(1), 7-18.
- Krugman, P.R. (1989), *Market Base Debt Reduction Schemes*, in: J. Frenkel, M.O. Dooley & P. Wickham (Eds), "Analytical Issues in Debt", International Monetary Fund: Washington, D.C.
- Liu, X.H. and C. Shu (2004), "Consumption and Stock Markets in Asian Economies", *International Review of Applied Economics*, 18(4), 483-496.
- Narayan, P.K. (2005), "The Saving and Investment Nexus for China: Evidence from Cointegration Tests", *Applied Economics*, 37(17), 1979-1990.
- Narayan, P.K. and R. Smyth (2005), "The Determinants of Aggregate Import Demand in Brunei Darussalam: An Empirical Assessment using a Cointegration and Error Correction Approach", *The Singapore Economic Review*, 50(2), 197-210.
- Nieh, C.C. and Y.S. Wang (2005), "ARDL Approach to the Exchange Rate Overshooting in Taiwan", *Review of Quantitative Finance and Accounting*, 25(1), 55-71.
- Nowzad, B. and R.C. Williams (1981), *External Indebtedness of Developing Countries*, International Monetary Fund: Washington, D.C.
- Pattichis, C. and M. Kanaan (2004), "The Balassa-Samuelson Hypothesis and Oil Price Shocks in a Small Open Economy: Evidence from Cyprus", *Open Economies Review*, 15(1), 45-56.
- Pesaran, M.H., Y. Shin and R. Smith (2001), "Bounds Testing Approaches to the Analysis of Level Relationships", *Journal of Applied Econometrics*, 16(3), 289-326.
- Rajan, R. (2005), "Debt Relief and Growth", *Finance and Development*, 42(2), 56-57.
- RBF (2006a), Monetary Policy Statement November 2006, Reserve Bank of Fiji: Suva.
- RBF (2006b), Monetary Policy Statement May 2006, Reserve Bank of Fiji: Suva.
- Sachs, J.D. (1990), "A Strategy for Efficient Debt Reduction", *Journal of Economic Perspective*, 4(1), 19-30.
- Tang, T.C. (2004), "Demand for Broad Money and Expenditure Components in Japan: An Empirical Study", *Japan and the World Economy*, 16(4), 487-502.
- UNDP (2006), Human Development Report 2006, United Nations Development Programme: New York.

- UNESCAP (2004), *Economic and Social Survey 2004*, United Nations Economic and Social Commission for Asia and the Pacific: Bangkok.
- UNESCAP (2006), *Economic and Social Survey 2006*, United Nations Economic and Social Commission for Asia and the Pacific: Bangkok.
- Vita, G.D. and A. Abbott (2002), "Are Saving and Investment Cointegrated? An ARDL Bounds Testing Approach", *Economics Letters*, 77(2), 293-299.
- World Bank (2006a), *Global Development Finance, Volume II: Summary and Country Tables*, World Bank: Washington, D.C.
- World Bank (2006b), *World Development Indicators 2006*, CD-ROM, World Bank: Washington, D.C.

ABSTRACT

This paper examines the relationship between external debt and economic growth in Fiji during a 30-year period (1970-2005). Applying the bound testing approach of Pesaran *et al.*, (2001), it is found that the long-run relationship runs from external debt to economic growth. Whilst both external debt and budget deficit had a negative impact on economic growth, exports of goods and services positively influenced growth. The Granger causality test results reveal the existence in the short-run of a bi-directional linkage between external debt and growth. The study conclusion is that Fiji would benefit from channeling its future external borrowings into activities promoting exports of goods and services, in which the country has a clear comparative advantage, rather than for consumption; by so doing the likelihood of any debt overhang can be avoided.

Keywords: External Debt, Economic Growth, Exports, Bound Test, Causality, Debt Overhang

JEL Classification: E52, E63, H62

RIASSUNTO

Debito estero e crescita negli stati insulari del Pacifico

Questo studio esamina la relazione tra debito estero e crescita economica nelle Fiji durante il trentennio 1970-2005. Con l'applicazione *bound testing* di Pesaran *et al.* (2001) si è dimostrato che, nel lungo periodo, tale relazione va dal debito estero alla crescita economica. Mentre sia il debito estero sia il deficit di bilancio hanno avuto un effetto negativo sulla crescita, le esportazioni di beni e servizi l'hanno influenzata positivamente. Il *Granger-causality test* mostra l'esistenza di un legame bi-direzionale, nel breve periodo, tra debito estero e crescita. Nel caso delle Fiji, la conclusione è che si trarrebbero più benefici se i futuri prestiti esteri fossero indirizzati verso attività che promuovono l'export di beni e servizi, piuttosto che i consumi. Si potrebbe evitare così la tendenza al sovraindebitamento.