Will External Borrowing Help Fiji’s Growth?

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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 by Pesaran, et al. (2001), it is found that the long-run relationship runs from external debt to economic growth; and while 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 policy conclusion is that Fiji should do well channeling 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.

Keyword(s): External debt, economic growth, exports, bound test, Granger causality
1. Introduction

For the first time in its history, in October 2006 Fiji carried out a bond issue in the international capital market for raising US$150 million. It also marked a departure from its two-decade old policy of keeping the external debt level low. In the immediate years after 1987, which witnessed two military coups, the interim government and the elected governments took deliberate efforts towards reducing the external debt level by prematurely retiring country’s outstanding debt owed to multilateral funding institutions with advanced payment of installments of principal and interest due. Consequently, external debt as a ratio of country’s gross domestic product was brought down from 32.1 percent in 1990 to 8.4 percent in 2000.

External borrowing through international bond issue for meeting the 2007 budget deficit had another objective as well, namely diversification of sources of financing (Reserve Bank of Fiji 2006a: 12). Further, it was defended by the government that (i) nearly two decade old conditions of excess bank liquidity since 1987, which were favourable for domestic borrowing without exercising any upward pressures on interest rate, ceased to exist by mid 2006; and (ii) the economy began to show signs of overheating by mid 2006, resulting in trade deficits and steady depletion of foreign exchange reserves. External borrowing, thus, came to be looked upon as a convenient way of augmenting not only international reserves but also to real resources of the country, thus contributing to both interest rate and price stability.

This raises the legitimate question whether overseas borrowing would help Fiji. There has been increasing concern in regard to intended rise in external debt level, especially when the country was facing a decline in exports in the wake of discontinuance of garment import quotas into by the United States in early 2006 and the impending withdrawal of preferential treatment for Fiji’s sugar exports to European Union by 2008. Rise in debt level has, therefore, implications. These relate to debt service obligations, resulting in transfer of greater real resources to creditors and in eventual 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; and the fifth and final section presents some conclusions with policy implications.
2. Literature Survey on External Debt and Economic Growth

External debt is categorized into two: one is the government and public sector agencies debt, which is guaranteed by government; and the other is private sector debt, which is generally non-guaranteed. If the government and public sector agencies behave like business enterprises, external 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, which would necessarily be in foreign exchange, can be made. Viewed in this light, a country should borrow from overseas only when the projects to be financed are expected to be both productive as well as capable of generating foreign exchange through incremental increase in exports.

It might be argued that such an approach is restrictive: since macroeconomic management is more important, even if some of the projects fail, the better managed economies with relatively higher international reserves would be able to service the debt. The underlying reasoning is that in those economies 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 (Gilis, et al. 1992).

A debt crisis would occur when the government does not have resources in terms of international reserves to service the external debt incurred by the government and the public sector agencies, which were guaranteed by the government. 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 revenues for annual debt service payments and should have adequate international reserves for effecting conversion of incremental revenue for payment. As noted earlier, even if the investments have failed, a well-managed economy would be able to meet its debt-servicing burden in case it happens to have abundant foreign reserves. In the case of non-guaranteed private sector loans, if investments funded by them fail, 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 fully borne by the government and the impact on the scarce foreign reserves is obvious. In such circumstances, the opportunity costs of such transfers of valuable external are severe.

High debt levels would lead to a problem of grave consequences, known as debt overhang. When a country has a high external debt, private investors would be reluctant to invest further, fearing the likely imposition of additional taxes on businesses for servicing the debt. Further, the government would hesitate to invest because returns would rather go largely to service the debt (Kenen 1990, Sachs 1990). Hence, high debt can impair future investment and hurt growth through creating uncertainty and
disincentives, which in turn discourage capital formation, causing repatriation of capital (Krugman 1989). The only way then open would be to reduce debt to jump-start growth. 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. However, Rajan (2005) argues rescheduling would be more appropriate for the emerging economies, but not for certain other countries on the ground that investors in those countries face more significant impediments to investment such as a discouraging business climate and uneven regulation.

Economic analysis of debt crisis would naturally take us to discuss the controversial relationship between external debt and economic growth (Cohen 1995). While, as noted earlier, Kenen (1990), Sachs (1990) and Krugman (1989) believed high 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 effects of devaluation, as remedy for meeting the impact of capital flight would be negligible for small economies. Currency devaluation would only raise the domestic currency costs of servicing external debt, worsen the budget deficit and raise the growth of money supply; and this would result in higher price levels and might lead to deterioration in the terms of trade and 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. The study also did not find support for the Dornbusch (1988) and Krugman (1989) proposition that external debt leads to economic slow down. Hojman (1986) in a study of Chile for he 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 External Debt of Fiji

Among the Pacific island countries (PICs) (Table 1), aid received by Fiji in terms of percentage of GDP is the least, being less than 2%. On the other hand, aid flows to Kiribati, Tuvalu and Vanuatu were in the range of 35% to 40% of GDP and they provided the much needed budgetary support. Fiji’s budget deficits were 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 the newly independent nation, public sector investments relating to physical infrastructures, including roads and power projects, were financed through external borrowing, mostly from international funding agencies, including Asian Development Bank. Since, Fiji has
been categorized as a lower-middle income country, it was not eligible for loans on concessional terms, which are applicable to other poor developing countries.

During the first ten years of independence, external debt was less than 10% of GDP. As the investment momentum picked up in the second half of the 1980s, external debt rose in the next five years. This was the period when domestic investment increased from an earlier five-year (1971-75) average of 21% of GDP to 30.1% of GDP in 1979 and reached a historically high figure of 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.

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


The two military coups of 1987, which marked a watershed in the nation’s history, also signified a change in borrowing policy. The forced isolation of Fiji, due to international economic sanctions against the nation, led the policy makers to gradually reduce the external debt level. There were two favourable factors at work: one by mid 1980s most of the major infrastructure projects, such as Monasavu hydropower project funded by external financing had been either completed or nearing completion; and secondly, Fiji had by then accumulated comfortable international reserves level, which were around six months equivalent of imports of goods. The decision of the interim government in 1987 to reduce the external debt by premature retirement of debt, by advanced payment of installments was also implemented by the subsequent governments 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. Eventually the external debt burden declined, as the ratio of EDT to GDP decreased to around 8% of GDP in 2004 (Table 2).

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, which accounted for two thirds of total debt, signifying the emphasis on use of loans for investment projects, as short-term loans are mostly for temporary accommodation. Secondly, loans on concessional terms comprise less than 20% of total EDT. Further, loans from multilaterals, which were once two-thirds of EDT, are now about 45%.
Since EDT level came down, total debt service cost (TDS), comprising interest and installment payments also decreased over time. The TDS, which were about US$ 105.6 million in 1995, decreased to US$ 14.6 million in 2004. Since debt-servicing ability is influenced by foreign exchange capacity of the country, reflected in the country’s total exports of goods and services (XGS), TDS is expressed as a ratio of XGS. In Fiji’s case the debt-servicing ratio was at the highest level in 1990. It was 12.2% and it decreased steadily to less than 6% in subsequent years.

As Table 3 shows, economic growth has been uneven, displaying high volatility. The major reasons have been periodical natural disasters as well as political uncertainty since 1987. Exports of goods and services, comprising the traditional sugar and the newly emerging tourism were the backbone of the economy. The ratio of XGS to GDP has, however, been subject to variability. In recent years, the ratio has been declining, causing concern to policy makers (Reserve Bank of Fiji 2000b). For jumpstarting the economy, the elected government after the 2000 civilian coup, resorted to aggressive fiscal policy measures, resulting in annual budget deficits during 2001-2005, which were financed by domestic borrowing. During this period, external debt level remained low unlike in the earlier years when the economy grew at a higher average rate.

4. Modeling Strategy and Data

Since external borrowing adds to real resources of the country, use of loan proceeds in productive investment projects is expected to result in higher growth. Further, as growth enhances the image of the country in the eyes of the creditors in particular, higher growth might enable the country to borrow more and on better terms, resulting in further rise in debt level. Growth is also positively associated with rise in exports of goods and services in many ways, as the latter brings in foreign exchange by utilizing domestic resources more gainfully and creating additional jobs in export oriented activities. Hence, it is posited that higher exports contribute to growth.

However, debt servicing has to be effected in foreign exchange. Therefore, debt service obligations associated with higher debt stock would lead to lower availability of foreign exchange for domestic investment. Therefore, it is likely 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 growth.

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

\[ RGDP_t = f(ED_t, BD_t, EXP_t) \]  

In equation (1), the subscript \( t \) refers to the years 1970-2005. \( RGDP \) is the real GDP (in index number); \( ED \) refers to the external debt (as percent of GDP); \( BD \) is the budget deficit (as percent of GDP); and \( EXP \) represents exports of goods and services (as percent
of GDP). The study uses annual data, covering a 35-year period (1970-2004), which are drawn from *Global Development Finance*, an annual publication of World Bank (2006a) and *World Development Indicators*, another annual publication of World Bank (2006b).
Table 2: External Debt and Debt Servicing: 1970-2004

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Total Debt Stock (US$ Million: EDT)</td>
<td>11.7</td>
<td>59.3</td>
<td>281.1</td>
<td>443.7</td>
<td>403.1</td>
<td>246.1</td>
<td>134.2</td>
<td>114.3</td>
<td>140.1</td>
<td>203.1</td>
<td>201.8</td>
</tr>
<tr>
<td>Debt Service ( US$ Million: TDS)</td>
<td>2.7</td>
<td>11.7</td>
<td>35.8</td>
<td>63.6</td>
<td>105.6</td>
<td>66.3</td>
<td>29.7</td>
<td>22.9</td>
<td>21.7</td>
<td>18.3</td>
<td>14.6</td>
</tr>
<tr>
<td>EDT (% of GDP)</td>
<td>5.6</td>
<td>8.8</td>
<td>23.7</td>
<td>40.4</td>
<td>31.3</td>
<td>12.8</td>
<td>8.4</td>
<td>7.3</td>
<td>8.1</td>
<td>9.4</td>
<td>8.1</td>
</tr>
<tr>
<td>EDT (% of Exports of Goods and Services)</td>
<td>NA</td>
<td>NA</td>
<td>47.1</td>
<td>81.7</td>
<td>45.7</td>
<td>21.6</td>
<td>40.7</td>
<td>40.2</td>
<td>44.4</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Short Term Debt (as % of EDT)</td>
<td>0.0</td>
<td>0.0</td>
<td>12.9</td>
<td>4.3</td>
<td>2.9</td>
<td>5.9</td>
<td>11.6</td>
<td>13.9</td>
<td>26.2</td>
<td>42.4</td>
<td>37.3</td>
</tr>
<tr>
<td>Concessional Debt (as % of EDT)</td>
<td>14.5</td>
<td>18.4</td>
<td>21.4</td>
<td>4.5</td>
<td>7.4</td>
<td>8.5</td>
<td>14</td>
<td>15.2</td>
<td>18.7</td>
<td>16.5</td>
<td>17.9</td>
</tr>
<tr>
<td>Multilateral Debt (as % of EDT)</td>
<td>0.0</td>
<td>32.4</td>
<td>23.2</td>
<td>37.5</td>
<td>50.1</td>
<td>60.8</td>
<td>66.1</td>
<td>66.3</td>
<td>55.8</td>
<td>41.5</td>
<td>45.1</td>
</tr>
<tr>
<td>TDS (% of Exports of Goods and Services)</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>11.7</td>
<td>12.2</td>
<td>5.8</td>
<td>6.3</td>
<td>5.5</td>
<td>5.9</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Int.(% of GDP)</td>
<td>0.5</td>
<td>0.4</td>
<td>1.4</td>
<td>2.5</td>
<td>2.6</td>
<td>0.8</td>
<td>0.6</td>
<td>0.3</td>
<td>0.3</td>
<td>0.2</td>
<td>0.3</td>
</tr>
<tr>
<td>Int.(% of Exports of Goods and Services)</td>
<td>NA</td>
<td>NA</td>
<td>2.7</td>
<td>5.0</td>
<td>3.7</td>
<td>1.4</td>
<td>1.8</td>
<td>1.7</td>
<td>1.6</td>
<td>Na</td>
<td>NA</td>
</tr>
</tbody>
</table>

Source: World Bank (2006a)
## Table 3: Fiji: Selected Key Economic Indicators

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>1975-1984 (Average)</td>
<td>2.6</td>
<td>9.0</td>
<td>5.8</td>
<td>24.2</td>
<td>10.1</td>
<td>-3.80</td>
<td>-1.3</td>
<td>6.2</td>
<td>45.1</td>
</tr>
<tr>
<td>1985-1994 (Average)</td>
<td>1.9</td>
<td>6.1</td>
<td>5.3</td>
<td>39.7</td>
<td>20.2</td>
<td>-6.64</td>
<td>2.1</td>
<td>6.1</td>
<td>46.9</td>
</tr>
<tr>
<td>1995-1999 (Average)</td>
<td>3.1</td>
<td>3.3</td>
<td>5.5</td>
<td>44.7</td>
<td>17.1</td>
<td>-0.15</td>
<td>2.1</td>
<td>6.4</td>
<td>56.9</td>
</tr>
<tr>
<td>2000</td>
<td>-1.7</td>
<td>3.0</td>
<td>6.6</td>
<td>41.2</td>
<td>8.4</td>
<td>-2.87</td>
<td>-0.9</td>
<td>7.1</td>
<td>60.2</td>
</tr>
<tr>
<td>2001</td>
<td>2.0</td>
<td>2.3</td>
<td>9.4</td>
<td>45.5</td>
<td>7.3</td>
<td>-7.74</td>
<td>1.2</td>
<td>6.2</td>
<td>72.6</td>
</tr>
<tr>
<td>2002</td>
<td>3.2</td>
<td>1.6</td>
<td>8.7</td>
<td>47.8</td>
<td>8.1</td>
<td>-0.14</td>
<td>2.3</td>
<td>6.1</td>
<td>59.7</td>
</tr>
<tr>
<td>2003</td>
<td>1.0</td>
<td>4.2</td>
<td>9.2</td>
<td>50.3</td>
<td>9.4</td>
<td>-7.79</td>
<td>-1.0</td>
<td>5.7</td>
<td>60.0</td>
</tr>
<tr>
<td>2004</td>
<td>5.3</td>
<td>3.3</td>
<td>6.9</td>
<td>50.2</td>
<td>8.1</td>
<td>-17.12</td>
<td>-2.2</td>
<td>5.0</td>
<td>54.0</td>
</tr>
<tr>
<td>2005</td>
<td>0.7</td>
<td>2.7</td>
<td>4.3</td>
<td>53.4</td>
<td>9.1</td>
<td>-16.65</td>
<td>4.7</td>
<td>4.0</td>
<td>58.3</td>
</tr>
</tbody>
</table>

For examining the existence of possible long-term relationships amongst \( RGDP \), \( ED \), \( BD \) and \( EXP \), we resort to 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. For these reasons, the ARDL procedure has become increasingly popular in recent years and we begin the empirical analysis with this procedure\(^1\).

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:

\[
\Delta RGDP_t = \beta_1 RGDP_{t-1} + \beta_2 ED_{t-1} + \beta_3 BD_{t-1} + \beta_4 EXP_{t-1} + \sum_{i=1}^{n_1} \beta_5 \Delta RGDP_{t-i} + \sum_{i=0}^{n_2} \beta_6 \Delta ED_{t-i} \\
+ \sum_{i=0}^{n_3} \beta_7 \Delta BD_{t-i} + \sum_{i=0}^{n_4} \beta_8 \Delta EXP_{t-i} + \epsilon_t
\]

where \( \epsilon_t \) 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 developed and pioneered by Granger (1986), and Engle and Granger (1987) contributed a significant breakthrough towards testing short-run Granger-causality direction. Based on this framework, if two variables (or more) are cointegrated, the finding of no-causality in either direction can be ruled out. In other words, as long as the two variables share a common trend, causality (in the Granger sense), must exist at least in one direction (Granger, 1986). If we exploit the idea that there may exist co-movements between external debt and economic growth of Fiji and possibilities that they

---

will trend together in finding a long-run stable equilibrium, by the Granger representation theorem we may posit the following testing relationships within the vector error-correction model:

\[
\begin{pmatrix}
\Delta RGDP_t \\
\Delta ED_t \\
\Delta BD_t \\
\Delta EXP_t
\end{pmatrix}
= \begin{pmatrix}
d_{11}(L) & d_{12}(L) & d_{13}(L) & d_{14}(L) \\
d_{21}(L) & d_{22}(L) & d_{23}(L) & d_{24}(L) \\
d_{31}(L) & d_{32}(L) & d_{33}(L) & d_{34}(L) \\
d_{41}(L) & d_{42}(L) & d_{43}(L) & d_{44}(L)
\end{pmatrix}
\begin{pmatrix}
\Delta RGDP_t \\
\Delta ED_t \\
\Delta BD_t \\
\Delta EXP_t
\end{pmatrix}
+ \begin{pmatrix}
\delta_1 ECT_{t-1} \\
\delta_2 ECT_{t-1} \\
\delta_3 ECT_{t-1} \\
\delta_4 ECT_{t-1}
\end{pmatrix} + \begin{pmatrix}
c_1 \\
c_2 \\
c_3 \\
c_4
\end{pmatrix} + \begin{pmatrix}
u_{1t} \\
u_{2t} \\
u_{3t} \\
u_{4t}
\end{pmatrix}
\]

(3)

where \(\Delta\) 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 exposed 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 significance of the sum of the lags of each explanatory variable by a joint \(F\)- or Wald test.

### 5. Results and Interpretation

As a starting point, all the 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 \(RGDP, ED, BD\) and \(EXP\). 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. Therefore, one concludes that all variables are integrated of an order less than 2 since the first differences are \(I(0)\). The different results indicated by both ADF and Ng-Perron unit root tests for \(ED\) have convinced us to use the bound test proposed by Pesaran, et al. (2001) as this technique does not require the same order of each explanatory variable.

Looking at the unrestricted error correction model (UECM) reported in Table 5, the calculated \(F\)-statistic of \(RGDP\) 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 \(ED, BD\) and \(EXP\) is respectively smaller 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 \(RGDP\) is as follows:
\[ RGDP = 5.03 - 0.27ED^{**} - 0.16BD* + 0.60EXP** \]

\begin{align*}
(3.19) & \quad (-3.96) \quad (-1.95) \quad (2.28)
\end{align*}

Note: *, ** and *** indicate significance at 10, 5 and 1 per cent levels. Figures in parentheses are calculated “t” values.

Table 4: Results of Unit Root Tests

<table>
<thead>
<tr>
<th>Variable</th>
<th>ADF</th>
<th>Ng-Perron</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Level</td>
<td>First Difference</td>
</tr>
<tr>
<td><strong>RGDP</strong></td>
<td>-3.0879 (2)</td>
<td>-8.0153** (1)</td>
</tr>
<tr>
<td><strong>ED</strong></td>
<td>-1.2588 (0)</td>
<td>-4.6717** (0)</td>
</tr>
<tr>
<td><strong>BD</strong></td>
<td>-4.7612** (0)</td>
<td>-7.3014** (2)</td>
</tr>
<tr>
<td><strong>EXP</strong></td>
<td>-3.3811 (2)</td>
<td>-6.7437** (0)</td>
</tr>
</tbody>
</table>

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.

Table 5: Bound Test for Cointegration Analysis

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Computed F-statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RGDP</strong></td>
<td>5.71**</td>
</tr>
<tr>
<td><strong>ED</strong></td>
<td>3.22</td>
</tr>
<tr>
<td><strong>BD</strong></td>
<td>1.27</td>
</tr>
<tr>
<td><strong>EXP</strong></td>
<td>0.58</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Critical Value</th>
<th>Pesaran et al. (2001)(^a)</th>
<th>Narayan (2005)(^b)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lower bound value</td>
<td>Upper bound value</td>
</tr>
<tr>
<td>1 per cent</td>
<td>3.41</td>
<td>4.68</td>
</tr>
<tr>
<td>5 per cent</td>
<td>2.62</td>
<td>3.79</td>
</tr>
<tr>
<td>10 per cent</td>
<td>2.26</td>
<td>3.35</td>
</tr>
</tbody>
</table>

\(^a\) 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.
As can be seen from equation (4), the estimated coefficient of exports \((EXP)\) is significant and it has a significant and positive effect on economic growth. This finding is consistent with our early discussion that a high level of export earning capacity raises the availability of foreign exchange in Fiji, thereby facilitating economic growth. In contrast, both external debt and budget deficit seem to have had negative effects on economic growth.

Figures 1 and 2 plot the CUSUM and CUSUMSQ statistics when real GDP \((RGDP)\) is the dependent variable. The results indicate absence of instability in the coefficients as the plot of the CUSUM and CUSUMSQ statistics are confined within the 5% critical bounds of parameter stability. This indicates that the structure of the parameters have not diverged abnormally over the period of the analysis. Besides, various diagnostic tests – tests of normality, autocorrelation, heteroskedasticity in the error term and misspecification error – have been conducted to examine the validity and reliability of the short-run regression models (Table 6).
In order to examine the direction of causality, we now turn to the results based on the VECM formulation presented in Table 7. As shown in the last column of Table 7, the results indicate that the ECT for RGDP equation is significant at 1 percent level and it has a correct sign. This 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 RGDP equation (0.1513) is moderate fast in making the adjustment. In contrast, the ECT is not significant in other equations.

Looking at the short-run causality, it is found that there is unidirectional causality running from both RGDP and ED to EXP, and BD to RGDP, EXP and ED. Besides, the results reveal that the growth-driven export hypothesis holds in Fiji, but not vice versa. Referring to the short-run causality, it is also revealed that both a change in external debt (ED), budget deficit (BD) and real GDP (RGDP) Granger cause growth in exports. 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 and leads to higher level of debt.

### Table 7: Granger Causality Tests

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>F-statistic</th>
<th>ECT (t-statistics)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ΔRGDP</td>
<td>ΔED</td>
</tr>
<tr>
<td>ΔRGDP</td>
<td>-</td>
<td>3.34*</td>
</tr>
<tr>
<td>ΔED</td>
<td>3.84*</td>
<td>-</td>
</tr>
<tr>
<td>ΔBD</td>
<td>0.79</td>
<td>1.38</td>
</tr>
<tr>
<td>ΔEXP</td>
<td>2.78*</td>
<td>5.57***</td>
</tr>
</tbody>
</table>

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

This paper investigated the relationship between external debt and economic growth in Fiji during a 30-year period (1970-2005). Applying the bound testing approach by Pesaran, et al. (2001), it is found that there is a long-run relationship running from external debt, budget deficit, 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. Implementing a prudent debt management policy now, therefore, becomes more urgent, along with the critical need for maintenance of macroeconomic stability and favourable business climate.
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