Foreign Direct Investment in the South Pacific Island Countries
A Case Study of Fiji

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INTRODUCTION

The South Pacific island countries (SPICs) for the past two decades have been lagging behind in growth in comparison to similarly placed island countries elsewhere. While average rates of growth of island countries in the Caribbean and the Indian Ocean regions during 1981-2000 were around 3% and 6% respectively, the SPICs recorded a growth rate of around 1.5%. A major reason attributed to the lackluster economic growth is the prevailing poor domestic investment climate in SPICs, resulting in low inflows of foreign direct investment (FDI). The FDI inflows to the Caribbean and Indian Ocean island countries during 1991-2000 ranged from 3% of gross national product (GNP) in the case of Barbados and 6% of GNP for Mauritius, as against 0.8% GDP in the case of Fiji in the South Pacific.

The objective of this paper is to undertake a study of determinants of FDI inflows in Fiji, as a case study. The choice of Fiji is influenced by more than one reason. Aside from data availability, Fiji has the distinction of being a leading country in the region with a relatively large manufacturing base, natural resource endowments and skilled labour. The paper is organized into four sections. The first section gives a brief background of FDI inflows in the region and their contribution to growth. The second section is a review of past studies, whereas the third section discusses the methodology employed for the empirical analysis and reports the results. The last section presents some conclusions.

FDI INFLOWS IN THE SOUTH PACIFIC

The SPICs, since their independence in the second half of the last century have been assisted by official development assistance (ODA) in terms of bilateral grants from international donors, especially from their past colonial masters. These grants provided substantial budgetary support. The annual aid flows were used for both financing recurrent expenditures of running the government machinery as well as enabling the governments undertake capacity enhancing public investments in infrastructure.

Since the early 1990s, there has been a downward trend in ODA for budgetary support. Increasingly, SPICs have been forced to pay attention to capital inflows as an alternative to foreign aid. Since SPICs' financial and capital markets are undeveloped and domestic investment activities are small, capital inflows have not been remarkable. Further, there are considerable institutional and structural rigidities in factor markets as well, which have been attributed to customary land tenure, restricting availability of land. As a result, no financial assets have emerged to be substitutable and attractive enough from overseas investors' point of view.

Furthermore, interest rates in SPICs are found non-expensive in the short run to shifts in supply and demand. Prices do not adjust to equilibrate the demand for and supply of the limited financial assets, and most of the adjustment falls on quantities rather than on prices. In these circumstances, interest settings do not play any role in either attracting or deterring short term flows and hence monetary policy has limited scope for influencing short-term capital inflows (Morling and Singh 1998). In a way, it was a blessing in disguise. When East Asia suffered from the adverse impact of

sudden withdrawal of hot money flows, the SPICs were left unaffected by the contagion, which soon spread across the globe.

The SPICs are increasingly appreciative of the fact that in the light of the declining aid flow, it would be more prudent to place emphasis on FDI inflows, which have been acknowledged to be the most constructive of all flows for the emerging markets. Further, they are less volatile and less prone to sudden withdrawal due to shift in sentiment. The term FDI would normally refer to substantial equity stake and effective control of enterprises. However, in the context of growing services sector in developing countries, a broader definition seems to have been emerging. This now refers to non-equity participation by foreigners by way of licensing, franchising, joint ventures with limited equity participation and R&D cooperation (de Mello 1997). The SPICs have become increasingly receptive to FDI for the reason that FDI inflows as non-debt creating flows, not only supplement domestic savings, but also contribute to fostering domestic managerial skills and transfer of technology (Jayaraman 1998).

Historical ties with the United Kingdom, Australia and New Zealand have largely influenced FDI flows to SPICs in some specific areas. As noted by Hill and Athukorla (1998), most of the FDI inflows were primarily of the natural resource exploiting type. The SPICs are no exception. The most notable investment has been sugar in Fiji. The Australian–owned Colonial Sugar Refinery (CSR), which was a plantation venture in the 19th century became a successful export oriented investment type as well. The CSR sold its interests to Fiji government in 1973. Its successful operation for almost a century in Fiji inspired similar patterns of development in the Solomon Islands. The latter specialized in palm oil and cocoa plantations in 1960s owned by the British interests, and tuna fisheries and canning by Japanese investors.

The third type of investment, known as market seeking, was mainly limited to retail trade, as the populations of SPICs were small. These included retailers including Burns Philp and Carpenters of Australia, which set up supermarket chains. In the early 1990s, Japanese investors showed interest in setting up export-oriented type of investments in light industries. The Yazaki automobile wiring harness plant in Samoa is a leading example, which exported its products to car assembling plants in Japan. The newly industrialized countries such as Korea, Malaysia and Singapore also entered the scene. Their interests were confined to the services sector, including tourism related activities, which included hotel and resorts. In recent years, with increased prospects of regional integration under the recently concluded Pacific Island Countries Trade Agreement (PICTA) signed in 2002, FDI inflows into SPICs are expected to be geared to production of consumer goods for a regional market under phased dismantling of trade barriers.

Tables 1 (a and b) present the net resource flows to five major SPICs including Fiji in comparison with all developing countries. The net resource flows to the SPICs, except Fiji, have been dominated by ODA flows. While portfolio investment has been absent in all SPICs, net FDI flows to Vanuatu have been high both in absolute figures and in terms of percentages of GNP.

Table 1a Net Resource and FDI Flows to all DCs and SPICs

All Developing Countries	1996	1997	1998	1999	2000	2001
Total Net Resource Flows(billion US$)	273.9	316.3	317.5	261.2	235.2	207.1
Official Flows	27.8	26.7	28.2	29.4	29.6	29.5
Portfolio Flows	33.6	26.7	7.4	14.9	26.1	5.9
FDI	127.8	169.3	174.4	179.2	160.6	171.7
Total Net Resource Flows(% of GNP)	4.9	5.3	5.3	4.7	4.0	3.5
Official Flows (% of GNP)	0.5	0.4	0.5	0.5	0.5	0.5
Portfolio Flows (% of GNP)	0.6	0.4	0.1	0.3	0.4	0.1
FDI (% of GNP)	2.3	2.8	2.9	3.3	2.7	2.9

Source: World Bank (2003)

Table 1b Net Resource and FDI Flows to SPICs

Fiji	1996	1997	1998	1999	2000	2001
Total Net Resource Flows (million US$)	-5.4	16	103.3	27.8	-75.7	-10.9
Official Flows	18.8	14.4	13.7	14.6	9.3	5.1
FDI	2.4	15.6	107	-33.2	-69.3	-24
Total Net Resource Flows (% of GNP)	-0.3	0.8	6.6	2.5	-6.4	-0.9
Official Flows (% of GNP)	0.9	0.7	0.9	1.3	0.8	0.4
FDI (% of GNP)	0.1	0.8	6.8	-3.0	-5.8	-1.9
Samoa	1996	1997	1998	1999	2000	2001
Total Net Resource Flows(million US$)	14.8	27.1	15.3	4.4	5.8	20.9
Official Flows	13.1	7.6	11.9	5.8	4.9	19.9
FDI	1.2	20	3	2	-1.5	1.2
Total Net Resource Flows(% of GNP)	6.5	11.1	6.8	1.9	2.5	8.3
Official Flows (% of GNP)	5.8	3.1	5.3	2.5	2.1	7.9
FDI (% of GNP)	0.5	8.2	1.3	0.9	-0.6	0.5
Solomon Islands	1996	1997	1998	1999	2000	2001
Total Net Resource Flows(million US$)	23.7	50.4	30.1	24.3	47.2	51
Official Flows	18.6	15.9	10.5	12.7	48.7	43
FDI	5.9	33.8	8.8	9.9	1.4	-5.1
Total Net Resource Flows(% of GNP)	7.0	14.1	10.2	8.3	17.1	19.3
Official Flows (% of GNP)	5.5	4.4	3.5	4.3	17.7	16.3
FDI (% of GNP)	1.7	9.4	3.0	3.4	0.5	-1.9
Tonga	1996	1997	1998	1999	2000	2001
Total Net Resource Flows(million US$)	16.2	11.9	11.9	10.3	10.6	11.6
Official Flows	12.3	8.1	5.6	7.1	6.9	9.7
FDI	2	3	2	2	2	1.8
Total Net Resource Flows(% of GNP)	9.7	7.0	7.3	6.7	6.7	8.2
Official Flows (% of GNP)	7.3	4.7	3.4	4.6	4.4	6.9
FDI (% of GNP)	1.2	1.8	1.2	1.3	1.3	1.3
Vanuatu	1996	1997	1998	1999	2000	2001
Total Net Resource Flows(million US$)	45.5	37.5	38.9	25.8	40.9	28.4
Official Flows	12.7	7.2	7.1	7.6	12.9	8.5
FDI	32.7	30.2	20.4	13.4	20.3	18
Total Net Resource Flows(% of GNP)	20.6	16.6	17.5	12.1	19.2	13.7
Official Flows (% of GNP)	5.7	3.2	3.2	3.6	6.1	4.1
FDI (% of GNP)	14.8	13.3	9.2	6.3	9.5	8.7

Source: World Bank (2003)

Further, net flows of FDI to Vanuatu remained steady, unlike in the case of Fiji, which were negative in some years. The apparent reason behind Vanuatu being the leading recipient of FDI flows has been its very high degree of openness of the economy associated with its pure tax haven status. The FDI has indeed contributed to economic growth of SPICs. First and foremost, it has added to domestic savings in all countries and reduced the resource gaps and cushioned them against possible adverse effects of current account deficits (Jayaraman 1998). Secondly, it enabled SPICs to step up its export-related activities by specifically focusing on resource development,

employment creation and skills development (Parry 1988). With additional incentives soon after the two military coups of 1987, which led to a temporary period of political and economic isolation resulting in the suspension of bilateral support from the metropolitan governments in the region, Fiji was able to explore and develop new areas of growth such as the export oriented garment industry with FDI from East Asia (Eleck *et al.* 1993). Sustained efforts during the last 12 years made Fiji's garment exports a major foreign exchange earner and number two in the list of most successful exports after sugar.

Gani (1999) in his study on FDI's contribution to Fiji's economic growth process during 1976-1995 utilized the Granger causality test methodology and established a statistically significant, positive, one-directional causal relationship between FDI and growth. That is, Fiji's annual growth was positively influenced by rise in annual FDI flows while rise in economic growth had no significant influence on FDI flows.

Accordingly, Fiji has been actively promoting FDI favoring the island's economic development through utilization of natural resources and expansion of economy's exports (UNCTAD 2003). The Fiji Islands Investment Board (FTIB) has been set up to provide assistance to potential investors and facilitate the coordination of various governmental agencies. The FTIB appraises foreign investment projects and issues investment certificates signifying their approval. Thereafter, clearance has to be obtained from other agencies including registration with the Registrar of Companies under the 1983 Companies Act and work permits from immigration authorities for expatriate managerial and technical personnel.

The government is aware that there is still some scope for speeding up the clearance process, as delays in the past appeared to have seriously discouraged prospective overseas investors (Reddy 2004). There are some restrictions on foreign investment activities in select areas. The Ministry of Commerce, Business Development and Investment review this list each year. Though apparently, there are no distinctions between domestic and foreign companies regarding corporate tax and individual tax. However, incentives for new FDI ventures are still in existence. So foreign investors have been resorting to periodical name changes so as to take advantage of tax holidays and other import duty exemptions, an anomaly which has been receiving attention from authorities.

Table 2 provides FDI in US million dollars during the recent period (1984-2000) as well in percent of GNP. The stock of FDI in 2002 is reported to be US$1,211 million, which is around 66% of GNP. The FDI flows were highly susceptible to political conditions as evidenced by their decline soon after the 1987 and 2000 coups.

Table 2 FDI Flows (F$ Million and % of GNP)

Year	Net FDI Flows US$ Million	Net FDI Flows % of GNP	Year	Net FDI Flows US$ Million	Net FDI Flows % of GNP
1985	21.8	2.0	1993	91.2	5.7
1986	8.0	0.6	1994	67.5	3.8
1987	-10.8	-1.0	1995	69.5	3.7
1988	23.5	2.2	1996	2.4	0.1
1989	13.1	1.0	1997	15.6	0.8
1990	92.0	6.8	1998	107.0	7.0
1991	5.2	0.4	1999	-33.2	-1.9
1992	103.6	6.6	2000	-69.3	-3.0

Source: Asian Development Bank (2003), various issues.

REVIEW OF PAST STUDIES

The empirical study is based on well-known studies conducted elsewhere (Rolfe and White 1992, Reuber *et al.* 1973). The theoretical framework behind these studies is the one that comprises

various hypotheses relating to a number of factors, which have a bearing on FDI (Mellahi and Guermat 2002). The factors can be broadly categorized into two: economic and non-economic. All the hypotheses linking FDI and the two groups of factors may not hold well for all countries and in all circumstances. However, a starting point for our study is that FDI is related to market size. Early studies (Bandera and White 1968, Scaperlanda and Mauer 1969, Schneider and Frey 1985, Yu 1990) focusing on FDI in different countries found a strong correlation between level of FDI and gross domestic product (GDP). More recent studies including Loree and Guisinger (1995) and Globerman and Shapiro (1999), which experimented with per capita GDP as a proxy for GDP, found a more emphatic relationship between FDI and market size.

It is also hypothesized that a growing economy represented either by real GDP growth rate or real per capita GDP growth rate, would be an attractive place for investing. Another economic factor, which influences FDI inflows, is the real effective exchange rate (REER) of the country. If domestic inflation relative to that of the rest of the world is higher due to expansionary fiscal policies, there would be an appreciation of real exchange rate and consequently, FDI flows into export-oriented activities would get dried up. Thus, a rising real exchange rate would exercise a negative influence on FDI. On the other hand, export-oriented FDI activities are positively related to competitive real exchange rate. Accordingly, FDI flows are postulated to register an increase, if the host country follows non-inflationary fiscal and monetary policies, which are reflected in falling real exchange rate indicating continued competitiveness of country's exports. Another economic factor is the degree of openness of the economy, represented by the ratio of total exports and imports of goods and services to GDP.

Non-economic factors, which have emerged to be more important in recent years relate to governance factors, which contribute to stability. While economic stability is largely reflected in sound macroeconomic policies, stability in terms of political and constitutional status is determined by a sound institutional background. There are four key pillars: legal framework, business facilitation, a liberalized and robust financial system, and promotion of the country as a friendly one for prospective investors from the overseas. In Fiji in particular, Fallon and King (1995) and other studies (Asian Development Bank 1998a and 1998b, Duncan et al 1999) have stressed the need for reforms aimed at, among other objectives, promoting island countries as desirable destinations for FDI. In fact, various reforms including deregulation of the financial sector, laying down an investment code, and a separate government agency for quick processing of FDI proposals have now been in place since 1998 in all SPICs. A catchall variable for capturing the impact of successful policies would be the growth rate of real per capita GDP as well.

METHODOLOGY AND RESULTS OF THE STUDY

Utilizing the aforesaid broad theoretical framework, an empirical model of FDI for estimation purposes is proposed as below. The functional relationship is written as follows:

FDI = f(PCGR, PERCAPGDP, OPENNESS, RER)
Where FDI = percentage of FDI to GDP
PCGR = real per capita GDP growth rate (in percent)
PERCAPGDP = per capita real GDP (in F$)
OPENNESS = total exports and imports as percent of GDP
RER = real exchange rate index

For the empirical study of determinants of FDI in Fiji, data on Fiji's FDI inflows and other macroeconomic data, covering a 32-year period (1970-2001) were taken from World Development Indicators (2003).

The properties of individual time series in levels are examined as a first step before undertaking any econometric analysis in order to avoid any spurious regression results (Granger and Newbold

1974) by employing both Augmented Dickey-Fuller (ADF) and Ng and Perron's (2001) unit root tests. Although the ADF test controls for higher-order correlation by adding lagged difference terms of the dependent variable to the right-hand side of the regression, the usual Dickey-Fuller tests of the unit root null hypothesis can have little power when the root is very close to the unit circle and decreases as deterministic factors are added (Perron 1989). As a result, Ng and Perron (2001) modified the Phillips-Perron (PP) tests and constructed unit root tests (GLS-MZ) with good size and power. The proposed test has a high power in the local frontier to unit in the presence of different estimates for deterministic factors and, accordingly, is highly appropriate for the purpose of the study. The results of the tests (Table 3) indicate that all series were non-stationary and are of I[1].

Table 3 Results of Unit Root Tests

	ADF Test		Ng and Perron Test, MZa	
Variable	Level (Constant with Trend)	First Difference (Constant without Trend)	Level (Constant with Trend)	First Difference (Constant without Trend)
FDI	-2.8187 (1)	-6.8661* (1)	-15.3061 (1)	-26.7446* (1)
PCGR	-2.9704 (2)	-7.3660* (1)	-14.6734 (0)	-9.5148* (0)
PERCAPGDP	-2.5525 (0)	-6.9896* (0)	-8.1767 (0)	-14.7061* (0)
OPENESS	-3.0190 (0)	-5.4116* (0)	-10.5985 (0)	-18.3389* (0)
RER	-0.3403 (0)	-4.1763* (0)	-1.2863 (0)	-14.7032 (0)

Note: The ADF critical value at 5% level is –2.9640 and –3.5629 for constant without trend and constant with trend regressions, 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.

Multivariate Cointegration Test

Problem of any multicollinearity among the variables was ruled out by an examination of the correlation matrix (Table 4).

Table 4 Correlation Matrix

	FDI	**PCGR**	**PERCAPGDP**	**OPENNESS**	**RER**
FDI	1.0000	0.0226	-0.2463	-0.0842	-0.4516
PCGR	0.0226	1.0000	-0.0062	0.0787	-0.0812
PERCAPGDP	-0.2463	-0.0062	1.0000	0.6140	0.7869
OPENNESS	-0.0842	0.0787	0.6140	1.0000	0.5645
RER	-0.4516	-0.0812	0.7869	0.5645	1.0000

For investigating the linear relationship between macroeconomic variables (Engle and Granger, 1987; Johansen and Juselius, 1990, Johansen, 2000), a cointegration test is performed. The procedure adopted is the Johansen and Juselius (1990) and Johansen (2000) method, which was

[1] The cointegration equation with dummy variable for political unrest due to impact of military coups is

FDI = 276.12 + 10.39 PCGR + 75.35 PERCAPGDP + 72.29 OPENNESS - 0. 17 RER –4.16 DM

(2.63) (4.40) (2.65) (8.85) (-0.75)

(The figures in the brackets are calculated t values)

All variables are significant at 5% level, except the dummy variable.

designed to examine the restrictions imposed by cointegration on the unrestricted vector autoregression (VAR) model.

The VAR model is estimated with maximum likelihood framework and has the advantage of allowing the joint determination of FDI, PCGR, PERCAPGDP, OPENES and RER. Moreover, it takes into account the short-run dynamics of the variables, while permitting the system of variables to return to their long-run steady-state equilibrium level.

The variables to be tested can be written as the following 5-dimensional VAR model:

$$Z_t = \Gamma_0 + \sum_{i=1}^{k} \Gamma_i Z_{t-i} + u_t \qquad (1)$$

where Z_t is 5×1 vectors of I(1) variables, Γ_1 is 5×5 matrix of parameters and Γ_0 is 5×1 vectors of constant term. The vector u_t is white noise, which may be contemporaneously correlated. We rewrite equation (1) into error correction model (ECM) as follows:

$$\Delta Z_t = \Gamma_0 + \Gamma_1 \Delta Z_{t-1} + \ldots + \Gamma_{k-1} \Delta Z_{t-k+1} + \Pi Z_{t-k} + u_t \qquad (2)$$

where ΔZ_t is the vector of changes in period t and:

$$\Gamma_m = -I + \sum_{i=1}^{m} \Gamma_i, \qquad m = 1, 2, \ldots m-1$$

$$\Pi = -I + \sum_{i=1}^{k} \Gamma_i,$$

where Γ is the short-run dynamics and I is an identity matrix. Π is the long-run matrix and the rank r determines the number of cointegrating vectors of Z_t. For $0 < r < n$, there exists r cointegrating vectors. In that case, Π can be factorized as $\alpha\beta'$, where both α and β are $n\times r$ matrices. This model reflects a dynamic equilibrium relation, in which the expression βZ_{t-1} represents the extent the system is deviated from the long-run export equilibrium relationship.

In estimating the long-run relationship between a set of variables, both maximum eigenvalue and trace test statistics are applied. The level of significance chosen is at 5% level. The trace test is a likelihood ratio test for maximum r cointegrating vectors against the alternative equals to n. The maximum eigenvalue test has an identical null hypothesis as trace test, with its alternative hypothesis of $(r+1)$ cointegrating vectors. Both tests have a non-standard asymptotic distribution and the critical values for the rank tests are tabulated in Johansen and Juselius (1990) and Osterwald-Lenum (1992). For taking into account of the impact of military coups of 1987 and 2000, a dummy variable was included. Although the coefficient of the dummy variable with value of unity for years of political unrest and zero for normal years had the expected negative sign, it was found statistically not significant. Hence, it was dropped from the regression analysis. The results of the tests are presented in Table 5.

Results indicate the rejection of null hypothesis of no cointegrating relation, against the hypothesis of one cointegrating vector between FDI and the selected macroeconomic variables, which is based on the trace test statistic. The finding is also confirmed by the maximum eigenvalue test, which also indicates that there is one cointegrating vector in the system.

Table 5 Results of Johansen and Juselius Multivariate Procedure (VAR with 2 lags)

Variables: FDI, PCGR, PERCAPGDP, OPENNESS and RER
Sample Period: 1970-2001 (32 observations)

I. Eigenvalue
0.7955 0.4390 0.3301 0.2761 0.0929

Ho:rank=p	Maximum Eigenvalue Test Statistic	95%	Trace Test Statistic	95%
p == 0	46.03*	33.88	86.61*	69.82
p <= 1	16.77	27.58	40.58	47.86
p <= 2	11.62	21.13	23.82	29.80
p <= 3	9.37	14.26	12.20	15.49
p <= 4	2.83	3.84	2.83	3.84

II. Diagnostic Checking
VEC Residual Serial Correlation LM Tests
H_0: no serial correlation at lag order h

Lags	LM-Stat	Lags	LM-Stat
1	16.92 [0.8844]	3	24.45 [0.4931]
2	22.05 [0.6323]	4	21.70 [0.6528]

VEC Residual Normality Tests
H_0: residuals are multivariate normal
Jacque-Bera Normality = 3.24 [0.1976]

Notes: * indicates significant at 5% levels. Figures in bracket [ ] refer to probability value. Figures in square parentheses ( ) refer to *t*-test statistics.

The estimated coefficients of the cointegrating vector (with figures in brackets being calculated *t* values) are given by the following equation:

$$FDI = -58.40 + \underset{(2.85)}{3.77\,PCGR} + \underset{(4.24)}{13.53\,PERCAPGDP} + \underset{(4.81)}{18.49\,OPENNESS} - \underset{(-9.32)}{0.04\,RER}$$

The estimated coefficients of explanatory variables are found significant at 5% level. The results, which fulfill a battery of tests including residual serial correlation LM tests and residual normality tests, confirm that economic growth, market size and the openness have a positive and significant impact on FDI inflows; and the declining real exchange rate significantly contributes to rise in FDI inflows, which are generally geared to export oriented and tourism activities in Fiji.

Granger Causality Test within Vector Error-Correction Modelling (VECM)
Since an earlier study by Gani (1995), as noted earlier, established causal relationship in one direction, namely from FDI to growth during 1970-1992, it would be appropriate to examine whether such a relationship continued to exit beyond 1992. Accordingly, an error correction model (ECM) is estimated, not only to assess the causal relationship but also to gauge the speed of adjustment towards equilibrium. The ECM shows how the system converges to the long run equilibrium by the cointegrating regression as estimated above.

As noted by Engle and Granger (1987), if two series (say, X_t and Y_t) are individually I and cointegrated, a causal relationship exists in at least one direction. So long as the two variables have a common trend, causality in the Granger sense must exist at least in one direction. If these variables are cointegrated, the finding of noncausality in either direction is ruled out. In this case, the dynamic relationship among the selected variables is more correctly specified by an ECM of the following form:

$$\Delta Z_t = \Gamma_0 + \Gamma_1 \Delta Z_{t-1} + ... + \Gamma_{k-1} \Delta Z_{t-k+1} + \theta \varepsilon_{t-1} + u_t \qquad (3)$$

The ECM expresses changes in the dependent variable as a function of the level of disequilibrium in the cointegrating relationship (captured by the error-correction term) as well as changes in the explanatory variables. ε_{t-1} is the lagged value of the ε from the cointegrating equation (2) and Z_t is a vector contains both dependent and explanatory variables, which consists of five selected variables for the country. The coefficient of the lagged error correction term represents the response of the dependent variable in each period departure from equilibrium.

Based on the VECM formulation, the summary results are presented in Table 5. The error-correction term (ECT) captures the changes in FDI required to eliminate past departures of actual values of the selected variables from the equilibrium levels. The ECTs are presented in the last column of Table 6.

Table 6 Summary of Temporal Causality Results based on Vector Error-Correction Model

	Short-run lagged differences					
	ΔFDI	ΔPCGR	ΔPERCAPGDP	ΔOPENNESS	ΔRER	
Dependent Variables	F-statistics					Lagged ECT (t-statistics)
ΔFDI	-	7.5019*	14.7767*	6.8229*	24.6558*	-0.6596*
ΔPCGR	6.6768*	-	1207.6920*	6.6545*	15.3066*	-0.1602*

Note: The ECT was derived by normalizing the cointegrating vector on FDI (FDI equation) and PCGR (PCGR equation). Figures presented in the last column are estimated *t*-statistics testing the null that the lagged ECT is statistically insignificant for each equation. All other estimates are asymptotic Granger *F*-statistics. The VECM was estimated including an optimally determined (Akaike's FPE) lag structure of 3 for all lagged-difference terms and a constant.
* indicates significance at 5% level.

The ECT has emerged with statistical significance as well as with the correct negative sign. This implies that FDI and PCGR adjust downward whenever they get too high relative to other variables. Further, the results indicate there is a bi-directional causality between FDI with PCGR.

Unlike the finding by Gani (1999), our study shows that the causality between FDI and income growth is bi-directional. Results of diagnostic tests are summarized in Table 7. It confirms the hypothesis that the effectiveness of macroeconomic policies is crucial in creating the economic environment attractive to FDI. In turn, FDI promotes economic growth via the "catch-up" process in technology and through knowledge transfer. The conclusion is in accordance with results obtained in other regions (Borensztein *et al.* 1998).

Table 7 Summary of Diagnostic Tests for Equations Used in Causality Tests

Equation	Summary Statistics
ΔFDI	$\bar{R}^2$ = 0.9002; NORM = 0.6603 [0.7188]; AR(4) = 0.2511 [0.9030]; ARCH(4) = 0.8657 [0.5014]; RESET(4) = 1.6831 [0.2234]
ΔPCGR	$\bar{R}^2$ = 0.9986; NORM = 0.7323 [0.6933]; AR(4) = 1.4924 [0.3016] ARCH(4) = 0.7655 [0.5614]; RESET(1) = 2.0439 [0.1833]

Note: $\bar{R}^2$ is the adjusted R^2. Distributional properties of diagnostics are respectively: AR(4) as $\chi^2(p)$ testing for the null of *p* order serial correlation among the residuals; Heteroskedasticity: a $\chi^2(p)$ test for *p* order ARCH effects; and the Jarque-Bera (JB) $\chi^2(2)$ LM test for normality of residuals.

SUMMARY AND CONCLUSIONS

This paper undertook a study of the factors that determine a long-run equilibrium relationship between FDI and growth in Fiji. Our conclusion is that the rate of economic growth, market size, openness policy and real exchange rate are crucial determinants of FDI inflows into Fiji's economy.

Moreover, the Granger non-causality test procedure based on VECM shows that there is bi-directional causal linkage between FDI and economic growth. Fiji's policy makers have been implementing various reforms in order to attract FDI inflows by deregulating of the financial sector, laying down an investment code, and a separate government agency for quick processing of FDI proposals. There has, however, been a great deal of concerns regarding to the sustainability of these policies in promoting of economic growth.

A major policy implication of our study is that Fiji's policy makers should continue to attract the growth-inducing FDI inflows and that concerted efforts should be must be made to stimulate and to implement liberalization measures. Fiji will stand to gain by promoting a suitable policy environment for attracting FDI inflows, as they act as crucial catalysts in sustaining and stimulating economic performance.

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