

DETERMINANTS OF EXPORTS IN FIJI

Sangita Prasad

Working Paper

2000/04

June 2000

Economics Department

Reserve Bank of Fiji

Suva

Fiji

The author is grateful to Mr Steven Morling and Mrs Annie Rogers, for their assistance and many helpful suggestions. The views expressed herein are those of the author and do not necessarily reflect those of the Reserve Bank of Fiji.

Abstract

This paper identifies some of the main determinants of exports in Fiji. A single equation model for exports is developed in which trading partner income and relative prices play a central role. The underlying conceptual framework is an imperfect substitution model, in which the key assumption is that exports are not perfect substitutes for domestic goods in importing countries. A distinguishing feature of the analysis is the incorporation of the effects of agricultural supply-side shocks in the export equation.

The results show that in the long run, trading partner income largely drives movements in Fiji's exports. In the short run, exports are mainly influenced by changes in factors which affect the output capacity of agricultural production, such as weather conditions and industrial disputes, as well as relative prices and changes in foreign demand.

1.0 Introduction

In Fiji, the monetary policy objectives of the central bank are price stability and the maintenance of an adequate level of foreign reserves. The latter objective is largely to ensure that the country has sufficient reserves to meet its requirements for debt servicing and import payments. Like many small developing countries, Fiji's inflow of foreign exchange is heavily dependent on export earnings from primary commodities and tourism.

Accordingly, central banks need to understand the forces that influence its major source of foreign exchange earnings. Recent overseas studies¹, particularly those that include developing countries, have identified foreign demand and relative prices as factors that have a very strong correlation with exports (Catão and Falcetti, 1999; Reinhart, 1995; Samiei, 1994; Menzies and Heenan, 1993). Other factors, such as supply-side influences, have also been found to be important, particularly in developing countries.

To date, little research has been done on factors influencing export growth in Fiji. Papers by Rogers (2000) and Joynson (1997) provide some analysis of Fiji's imports while Fontana (1998) provides an analysis of Fiji's balance of payments. To better understand factors affecting Fiji's exports, this paper develops an empirical model of exports for Fiji. The model relates the growth in Fiji's exports to a number of variables including trading partner income, the real effective exchange rate and

¹ The literature on export demand is large. A comprehensive survey is contained in Goldstein and Khan (1985). More recent papers, which include both surveys of earlier work and new studies, include Hooper and Mann (1989) and Marquez (1995). Bayoumi (1999) and Clarida (1994) provide models with strong theoretical underpinnings.

agricultural supply-side shocks. This empirical framework is an error-correction model.

Foreshadowing the findings of the paper, foreign demand appears to be the dominant influence on Fiji's exports in the long-run. In the short run, agricultural supply-side shocks have a strong influence on exports, while Fiji's competitiveness and foreign demand have a moderate influence.

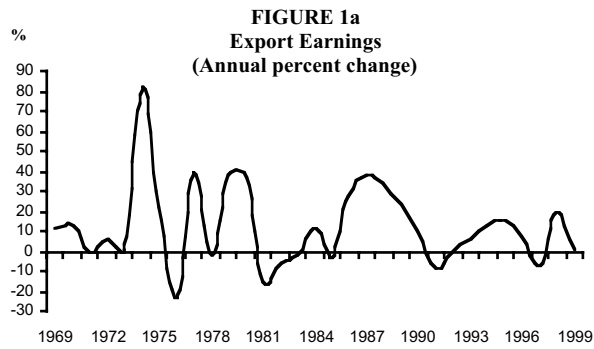
The remainder of the paper is organised as follows: Section two provides some background on export trends over the past three decades with particular attention to respective domestic and foreign factors. Section three outlines the conceptual framework adopted in the study. Section four provides the empirical results, while section five concludes the paper.

2.0 Fiji's Export Trends

The process of Fiji's integration with the global economy in past decades has been accompanied by important changes in its balance of payments. One such change is the marked increase in the nation's export orientation, corresponding to a rise in export growth. Over the past three decades, export growth in Fiji has been largely influenced by the nature of Fiji's preferential trade arrangements, exchange rate arrangements and the country's openness.

Fiji's domestic exports, which are largely comprised of agricultural commodities, are subject to sharp fluctuations from internal and external disturbances. As in most developing economies, the commodity concentration of Fiji's exports has long been regarded as a major factor contributing to the short-term instability of exports. Volatility in international prices for agricultural commodities introduces considerable uncertainty about export earnings from one year to the next (Figure 1a). Other factors, such as the susceptibility of exports to adverse weather conditions has also introduced considerable volatility into export earnings. This uncertainty has stimulated interest in national policies and encouraged export diversification² as a means of improving and stabilising Fiji's external position.

² In the Budget Address 2000 (p.15), the Government allocated a sum of \$250,000 to assist the private sector with Research and Development work on new products and will be rewarding those who contribute to the broadening of Fiji's export-base.

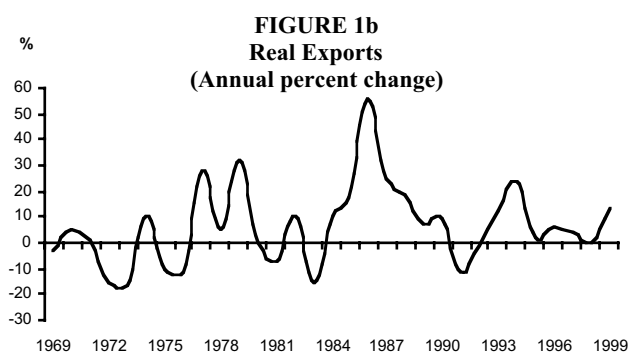


Fortunately, trade arrangements such as the Sugar Protocol under the Lome Convention and the South Pacific Regional Trade and Economic Cooperation Agreement have to a large extent helped to moderate the effects of these adverse shocks. These preferential agreements act as a ‘safety net’ in the event of price shocks to exports. In 1999, around 69 percent of sugar, Fiji’s major commodity export, was sold under preferential arrangements.³ Sugar earnings are boosted as Fiji receives a fixed preferential price under these arrangements, which is higher than the world market price. The remainder of sugar exports, around 31 percent, was traded under the volatile world market price. Since a lower quantity of sugar is traded at a price determined by world market forces, the effect of price shocks is likely to be lower.

The volatility of export receipts has not only been due to commodity price fluctuations; export volumes have also been volatile. Although Fiji’s export growth has been relatively strong, averaging

³ Sugar is exported under three different preferential arrangements. Under the Sugar Protocol, sugar is sold to the EU market at a fixed price around three to four times higher than the world market price. Under the Special Preferential Sugar Agreement, sugar is sold to Portugal and Finland at around 85 percent of the price Fiji earns under the Sugar Protocol. Fiji also sells around 10,000 tonnes of sugar to the United States at prices higher than the world market price.

around six percent, the pattern of growth has been erratic with periods of strength interspersed with periods of weaknesses. A mix of domestic and foreign factors has contributed to these results.

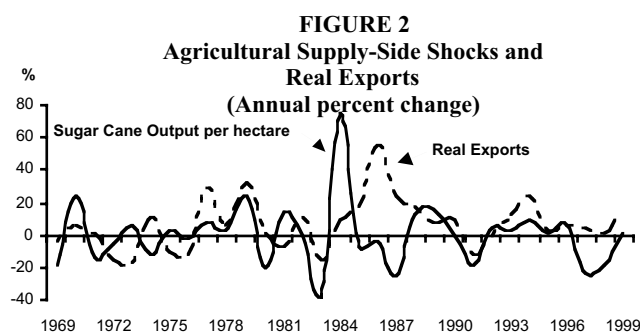


2.1 Domestic Factors

On the domestic front, a major structural weakness of the Fiji economy is the concentration of economic activity in the agricultural sector. A substantial part of Fiji's exports is comprised of agricultural-related products, currently around 33 percent. The fragility of the agricultural sector became apparent in the early 1980s and 1990s when growth in exports fluctuated due to a series of natural disasters and, in some instances, industrial disputes in the sugar industry. In addition, uncertainty

surrounding land leases⁴ also has significant negative ramifications for productivity in the agricultural sector.

This volatility is evident in Figure 2, which shows the annual production of sugar cane per hectare over the past 30 years. This is only a crude measure of the fluctuations in agricultural production, but it clearly shows the positive and negative supply-side shocks originating from this sector. The trend in Fiji's total exports broadly resembles fluctuations in sugar output over the past 3 decades largely due to the concentration of Fiji's exports in this sector. Overseas studies find that supply shocks have an important effect on exports, particularly in developing countries (see Bond 1987).



In addition to the volatility in agricultural exports, gold exports have also been volatile. On the other hand, non-agricultural exports, in particular garments, have grown considerably since the late 1980's and have become Fiji's leading export earner. In line with the literature that suggests manufactured exports are generally less subject to instability

⁴ The expiry of agricultural land leases is a major concern in Fiji. In the sugar industry a large portion of Indian sugarcane farmers are cultivating on land leased from the indigenous Fijian community

than agricultural products, Fiji's manufacturing exports, particularly garments have grown more smoothly than other exports.

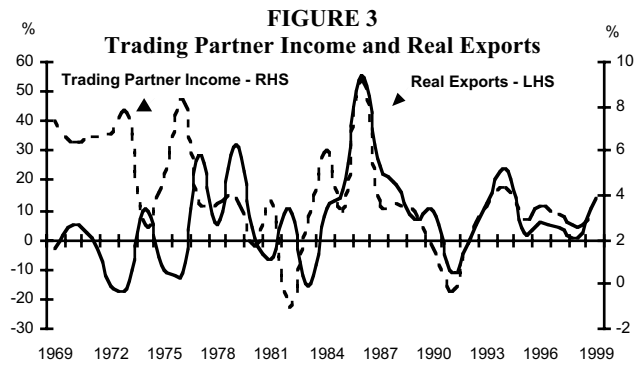
2.2 Foreign Factors

Fiji is a very small open economy heavily dependent on overseas economies for demand for its products. The price and quantity demanded of Fiji's major export, sugar, is generally pre-determined under trade arrangements. However, prices of other exports are generally determined by world market forces. Therefore, the demand for Fiji's exports traded in the world market, is affected by fluctuations in foreign income.

Over the last 30 years, the pattern of export growth in Fiji has generally tracked income patterns of our major trading partners. Fiji's openness has boosted trade relations with its major trading partners and has subjected the economy to increased external disturbances. A study by Fontana (1998) shows that external shocks are reflected in Fiji's balance of payments via fluctuations in foreign demand. The variability of foreign income is directly transmitted to Fiji's exports as a result of strong trade and financial linkages.

Graphically, there is strong evidence of a positive correlation between foreign economic activity and export growth (Figure 3). Although the direction of changes in exports in Fiji accord reasonably well with changes in Fiji's main trading partners' income, there also appears to be a lag relationship between foreign income and changes in exports. Underpinning this co-movement are production constraints and shipment delays, which slow the export response.

(native land). Ownership insecurity impacts farm productivity via the supply of investment capital available to farmers.

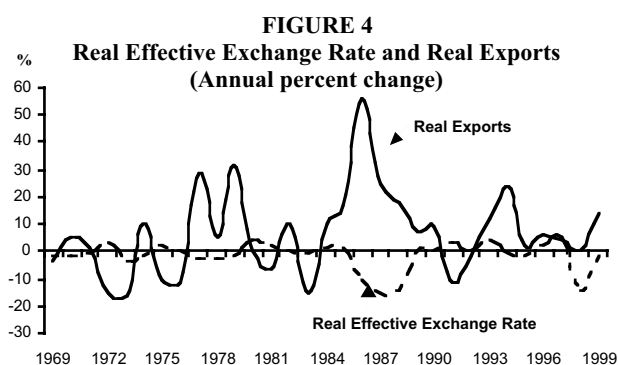


While broad movements in export volumes seem to be largely underpinned by supply-side considerations and foreign demand, there also appears to be a correlation with relative prices. In theory, real effective exchange rate movements are negatively correlated with the growth in real exports.⁵ An increase in the real effective exchange rate means a real appreciation of the domestic currency, which makes exportable items more costly. If the real exchange rate appreciates, the demand for exports is likely to fall, and the reverse is likely to occur if the real exchange rate depreciates.

As in most small island economies, the exchange rate has a significant influence on the demand for exports and hence production. In Fiji, the real effective exchange rate has been fairly stable over the study period, except for the devaluations in 1987 and 1998. Stability in the exchange rate has allowed Fiji's exporters to secure markets with their counterparts, and has reduced uncertainty associated with exchange rate risk.

⁵ The nominal exchange rate adjusted for inflation differentials between a country and its trading partners.

Graphically, to varying degrees, each of the periods of appreciation corresponds to a decline in real exports (Figure 4). Similarly, depreciations tend to be associated with a rise in the growth rate of exports. Overseas studies, including Bayoumi (1999), Menzies and Heenan (1993), Jones and Wilkinson (1990) and Goldstein and Khan (1985) also show an inverse relationship of relative prices to exports.



In Section 3 these supply-side as well as demand-side factors are incorporated into the export model that is used for estimation and testing purposes.

3.0 Conceptual Framework

The standard approach for specifying and estimating foreign trade equations is the imperfect substitutes model, in which the key assumption is that exports are not perfect substitutes for domestic goods in the importing countries. The empirical specification of the demand function for Fiji's exports is based on this model. Thus, the resulting export demand function represents the quantity demanded as a function of the level of real income in the importing countries and of relative prices.

Satisfactory results have been obtained in many studies that applied the model in its basic form, to both developed and developing countries, and for agricultural and manufactured exports (Goldstein and Khan, 1978; Okonkwo, 1989; Lukonga, 1994; Giovannetti and Samieli; 1995). Catão and Falcetti (1999) used a broader set of explanatory variables to estimate export functions.⁶

The imperfect substitution model used here is specified within the error correction framework. This approach provides information on long-run relationships as well as short-term dynamics.

Giovannetti and Samieli (1995) provide a straightforward derivation of the conventional demand function for exports that assume imperfect substitution within an error correction model framework. The general form of the equation of the model below follows their work closely.

⁶ Export functions included relative prices of exports, real exchange rate volatility, real domestic absorption and aggregate net capital stock as explanatory variables. In this model, only variables specified in equation (1) were used, due to data constraints.

The general form of the model⁷ is:

$$\Delta X_t = \alpha_0 + \sum_{i=0}^l \beta_1 S_{t-i} + \sum_{i=0}^m \beta_2 \Delta REER_{t-i} + \sum_{i=1}^n \beta_3 \Delta Y_{t-i} + c_1 X_{t-1} + c_2 Y_{t-1} + v_t$$

(1)

where X is the logarithm of real exports, S is the sugar cane production per hectare (a supply-side shock variable), Y is the logarithm of trading partner income, REER is the logarithm of the real effective exchange rate and v is an error term.

Apart from the standard form of the export equation, a distinguishing feature, the sugar cane per hectare variable, was included to measure agricultural supply-side shocks from changes in weather conditions. A similar variable was applied by Williams and Morling (2000) to capture the influence of weather on agricultural production.⁸ Any fluctuation in agricultural production caused by weather-related conditions is expected to affect exports. In the case of a severe supply-side shock, it is very difficult for Fiji to influence export prices as the demand for Fiji's exports is expected to be very elastic. Any price increase will mean a loss of Fiji's market share to its competitors.

The long-run relationship is specified as

$$X = -\left(\frac{\alpha_0}{c_1}\right) + \left(\frac{c_2}{c_1}\right)Y \quad (2)$$

with the long-run constant (α_0 / c_1) and long-run elasticity of exports with respect to trading partner income (c_2 / c_1).

⁷ The level of the real effective exchange rate was also initially included in the general model but was dropped after early testing, as the coefficient was insignificant. A dummy for the periods 1988 to 1998 was applied as during this time garments exports picked up sharply. However, it was dropped from the model, as it was not significantly different from zero.

⁸ This variable plays a similar role to the Southern Oscillation Index used by Gruen and Shuetrim (1994) to capture the influence of weather on growth of the economy.

4.0 Empirical Results

4.1 Data

The data are largely sourced from various issues of the Current Economic Statistics, although in some cases data from the IMF International Financial Statistics are used. Some of the series were constructed from primary data. Appendix 1 provides a description of data sources and construction. All series are available from 1968 to 1998.

The degree of integration or stationarity of each individual data series is determined first before estimating the model. Augmented Dickey-Fuller (ADF) (Said and Dickey 1984) and the Phillips and Perron (1988) tests were performed on each of the variables, where a unit root null hypothesis is tested against a stationary alternative. Each of the original variables is in logs except the sugar cane production per hectare (S), which is in levels. Real exports (X), trading partner GDP (Y) and the real effective exchange rate (REER) series, were stationary in their first difference. The sugar production series was stationary in levels.

Table 1: Unit Root Tests

Variable	Estimation period: 1968 – 1998			
	Dickey-Fuller Test		Phillips – Perron Test	
	I(1)	I(2)	I(1)	I(2)
Real Exports(X)	-0.5127	-3.4126*	-0.3525	-4.9862**
Sugar Production (S)	-2.9284		-5.9078**	
Trading Partner GDP (Y)	-1.0408	-4.1183**	-1.8372	-4.3835**
Real Effective Exchange Rate ($REER$)	-0.4867	-3.0547*	-0.4817	-2.6779

Note: **(*) denotes significance at the one (five) percent levels. The critical values for the Augmented Dickey – Fuller tests are -3.6752 and -2.9665 at the one and five percent levels respectively. The critical values for the Phillips – Perron tests are -3.6752 and -2.9665 at the one and five percent levels respectively.

4.2 Estimation

Several methods have been adopted to model cointegrating relationships for export equations. In this paper, the cointegrating relationship between export volumes and its explanators is tested and estimated using an unrestricted error correction model (ECM) procedure. The estimation period is from 1968 to 1998. The ECM technique allows the long and short-run dynamics to be estimated in a single step. The constant term of the single error correction framework is a combination of the short-run and long-run constant.

This technique has an advantage as it isolates the ‘speed of adjustment’ parameter, c_1 , which indicates how quickly the system returns to equilibrium after a random shock. Kremers, Ericsson and Dolado (1992) have shown this test to be more effective than the Dickey Fuller test applied to the residuals of a static long-run relationship.

Another reparameterisation, the Bewley (1979) transformation, isolates the long run or equilibrium parameters and provides t-statistics on those parameters. In order for the transformation to avoid endogeneity bias and be numerically equivalent, the model was estimated by using instrumental variables in the two-stage least squared estimation settings.

To obtain the preferred equation, insignificant regressors were sequentially deleted to arrive at the preferred specification reported in Table 3.

4.3 Diagnostics

The export model was tested for normality, serial correlation, autoregressive conditional heteroskedasticity and stability. Diagnostic tests carried out on the data (reported in Table 2) reveal the model is reasonably well specified. Diagnostics tests also indicated that the residuals are normally distributed, homoskedastic and serially uncorrelated and the parameters appear to be stable.

Table 2: Diagnostics

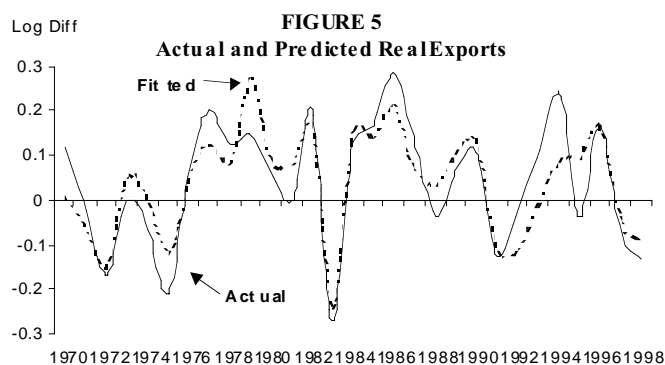
			Probability
Normality:			
Jarque-Bera Statistics	χ^2 - statistics	0.835	0.659
Serial Correlation			
Breusch-Godfrey Serial Correlation LM Test	F - statistics	0.472	0.631
	χ^2 - statistics	1.372	0.504
AR Cond. Heteroskedasticity:			
ARCH LM Test	F - statistics	2.338	0.138
	χ^2 - statistics	2.310	0.129
Heteroskedasticity:			
White Heteroskedasticity Test	F - statistics	0.562	0.854
	χ^2 - statistics	10.432	0.730
Stability:			
Chow Breakpoint Test (mid sample)	F - statistics	1.147	0.396
	LR - statistics	15.492	0.050
Chow Forecast Test (mid sample)	F - statistics	1.634	0.211
	LR - statistics	23.195	0.006
Specification Error:			
Ramsey RESET Test	F - statistics	1.390	0.252
	LR - statistics	1.949	0.163

Note: **(*) denotes significance at the one (five) percent levels. No terms were significant at these levels.

4.4 Results

The outcome is in line with the standard export model used as an explanation for the determinants of exports in Fiji. The findings are consistent with trade theory, many results in overseas studies, and the perception of the structure of Fiji's economy. The results, shown in Figure 5, suggest that trading partner income, the real effective exchange

rate and agricultural supply-side shocks account for a substantial part of the evolution of exports in Fiji.



Overall, the model fits the data reasonably well, although the standard errors suggest that, from a forecasting perspective, there is still a substantial margin of error. The wide standard deviation reflects the sharp swings in exports experienced over the sample period. It also indicates the quality of the data and those factors influencing exports that are not quantifiable or statistically unexplainable. Detailed results are presented in Table 3.

Table 3: *Determinants of Exports (Unrestricted ECM)*

Dependent Variable: real exports; estimation period 1968 - 1998

	(1)	(2)
Explanatory Variables: short run		
Constant	-5.502 (-4.724)**	
Sugar Production t	0.012 (4.776)**	
Sugar Production t_{-1}	0.007 (1.859)	
△ Trading Partner GDP t	1.213 (1.218)	
△ Trading Partner GDP t_{-1}	2.037 (1.926)	
△ Real Effective Exchange Rate t	-0.724 (-2.281)*	
Explanatory variables: long run,		
Exports t_{-1}	-0.398 (-4.371)**	
Trading Partner GDP t_{-1}	0.972	2.442 (14.484)**
Summary statistics		
Adjusted R ²	0.638	
σ	0.084	

Notes: t-values are in parentheses. **(*) denotes significance at the one (five) percent levels. For long-run explanatory variables the implied long-run coefficients (column 2) were calculated as the ratio of the relevant long-run ECM coefficients to the long-run coefficient on the lagged dependent variable; the Bewley transformation was applied to obtain interpretable t-statistics. The cointegration test proposed by Kremers, Ericsson and Dolado (1992) is employed. σ is the standard error of equation.

Short-run

In the short-run, the results highlighted the substantial impact of the volatility in the agricultural supply-side shock variable on real exports. The current as well as previous year's agricultural supply-side shock variable, which largely explains the sharp swings in real exports, was very significant. The result is not surprising given the dominance of the agricultural sector in Fiji's economy.

Other factors influencing the volume of exports appear to be economic conditions in Fiji's trading partners and Fiji's competitiveness. The one-year lag of foreign market conditions is significant with a reasonably large coefficient. A one percent rise in this variable a year ago, would cause export volumes to expand by nearly two percent in the current year. As expected, the strong significance of Fiji's competitiveness as well as an almost one-for-one coefficient suggests that an exchange rate depreciation will promote export volumes during the same year.

Long-run⁹

One of the strongest results to emerge from the study is the strong empirical support for a positive relationship between Fiji's exports and its major trading partners' income. The estimated equation provides strong evidence of a cointegrating vector with the relevant ECM coefficient very significant. The long-run income elasticity of demand is around 2.4 indicating that, over the past two or three decades, exports in Fiji's economy have moved more than twice with that of Fiji's main trading partners' income. This is not surprising given Fiji's increasing openness to its major trading partners in terms of investment and trade relations.

⁹ The Bewley's transformation was applied to obtain interpretable t-statistics. It was necessary to estimate the equation using instrumental variable technique, as the endogeneity bias would arise because the current level of LX_t enters both sides of the equation. In order for this transformation to be numerically equivalent, the appropriate instrument for ΔLX_t , which is LX_{t-1} was used.

5.0 Conclusions

This paper has attempted to provide useful insights into the behaviour of export growth in Fiji. A combination of supply-side and demand-side factors was used to construct an empirically tractable export model in accordance with traditional theoretical models and the underlying structure of Fiji's economy.

Fiji's exports, as in most small island economies, are continually subjected to a range of domestic and external factors. Over the past 30 years, export growth has rarely moved along a smooth growth profile. Nevertheless, it is still possible to identify the key exogenous factors underlying the short-term fluctuations in exports. In the short-run, supply-side shocks dominate the pattern of export growth. Empirically, the movements in the agricultural supply-side shock variable account for close to two-thirds of the annual change in exports. Stability in the exchange rate is also a factor in improving and promoting Fiji's exports. External factors also play an important role with fluctuations in foreign demand playing a significant role.

In the long run, empirical results generally support the view that foreign market conditions strongly influence Fiji's export behaviour. A study by Williams and Morling (2000) found that Fiji's economy moves roughly one-for-one with its trading partner economies. Developments in our trading partner economies are quickly transmitted to the Fiji economy as Fiji has strong trade and investment links with these economies.

The results suggest both domestic and external shocks largely influence movements in exports. Some of the shocks cannot be controlled by policymakers. The best policy prescription in such a situation would

be to put in place broad-based macroeconomic conditions, which could dampen the effect of these shocks. Diversification of exports through further research and development should be a part of this prescription. Continued stability in exchange rates and a concerted move towards diversifying Fiji's export market would improve economic fundamentals and help bring about sustained growth in export earnings.

Appendix: Data Sources and Construction

Series	Sources and Construction
Real Exports	Nominal domestic exports divided by domestic export unit values. Bureau of Statistics, Current Economic Statistics, various issues.
Agricultural supply shocks	Proxied by average sugar cane production per hectare in tonnes. Bureau of Statistics, Current Economic Statistics, various issues.
Real Effective Exchange Rate	Real Effective Exchange Rate Index (Base 1990 = 100), as calculated by the Reserve Bank of Fiji. For the period prior to 1979 an index was constructed using the trade-weighted consumer price indices and bilateral exchange rates of Fiji's five major trading partners. IMF International Financial Statistics Yearbook (1998); IMF International Financial Statistics, various issues.
Trading partner income	Trade-weighted average real gross domestic product of Fiji's four major trading partners: Australia, New Zealand, the United States of America and Japan. Reserve Bank of Fiji, Quarterly Review, various issues

References

- Bayoumi, T. (1999). Estimating Trade Equations from Aggregate Bilateral Data, *International Monetary Fund Staff Paper*, pp. 4-7.
- Bewley, R.A. (1979). The Direct Estimation of the Equilibrium Response in a Linear Dynamic Model, *Economic Letters*, 3, pp. 357-61.
- Bond, M. (1987). An Econometric Study of Exports of Manufactures from Developing Countries, *International Monetary Fund Working Paper*, p. 12.
- Bullock, M., S. Grenville and G. Heenan (1993). The Exchange Rate and the Current Account, *Proceedings of a Conference, The Exchange Rate, International Trade and the Balance of Payments*, Reserve Bank of Australia.
- Catão, L. and E. Falcetti (1999). Determinants of Argentina's External Trade, *International Monetary Fund Staff Paper*, p. 10-11.
- Clarida, R. (1994). Co-integration, Aggregate Consumption, and the Demand for Imports: A Structural Econometric Investigation, *American Economic Review*.
- Dell' Ariccia, G. (1999). Exchange Rate Fluctuations and Trade Flows: Evidence from the European Union, *Staff Papers*.

- Feder, G. (1987). Land Ownership Security and Farm Productivity: Evidence from Thailand, *Journal of Development Studies*, 24 (1), pp. 16-29.
- Fontana, M. (1998). The Effects of Monetary Policy on the Balance of Payments in Fiji, *Pacific Economic Bulletin*, 13 (1), pp. 57-71.
- Giovannetti, G. and H. Samieli (1995). Hysteresis in Exports, *International Monetary Fund Staff Paper*, 52.
- Goldstein, M. and M. Khan (1978). The Supply and Demand for Exports: A Simultaneous Approach, *Review of Economics and Statistics*, LX, pp. 275-86.
- Goldstein, M. and M. Khan (1985). Income and Price Effects in Foreign Trade, *Handbook of International Economics*, pp. 104 – 105.
- Gonzago, G. and M.C. Terra (1997). Equilibrium Real Exchange Rate, Volatility and Stabilisation, *Journal of Development Economics*, 54, pp. 77-100.
- Gruen, D. and G. Shuetrim (1994). Internationalisation and the Macroeconomy, *Proceedings of a Conference, International Integration of the Australian Economy*, Reserve Bank of Australia.
- Guie, L. H. and H. Weng (1994). Export Promotion Strategies: Malaysia, *Export Promotion Strategies of the SEACEN Countries*, pp. 335-46.

- Hooper, P. and C. Mann (1989). *The Emergence and Persistence of the US External Imbalance*, Princeton Essays in International Finance, Princeton, International Finance Section.
- Jones, M.T. and J. Wilkinson (1990). Real Exchange Rates and Australian Export Competitiveness, RBA, *Research Discussion Working Paper*, 5.
- Joynson, N. (1997). Determinants of Import Values, Reserve Bank of Fiji, *Working Paper*, unpublished.
- Kremers, J.J.M., N.R. Ericsson and J.J. Dolado (1992). The Power of Cointegration Tests, *Oxford Bulletin of Economics and Statistics*, 54 (3) pp. 325-48.
- Kumar, M.S. (1992). Econometric Analysis of Industrial Country Commodity Exports, *International Monetary Fund Working Paper*, 4.
- Lukonga, I. (1994). Nigeria's Non-Oil Exports: Determinants of Supply and Demand, 1970-90, *International Monetary Fund Working Paper*, 59.
- Marquez, J. (1995). A Century of Trade Elasticities for Canada, Japan and the United States, US Board of Governors of the Federal Reserve System, *International Finance Discussion Papers*, 531.

- Menzies, G. and G. Heenan (1993). Explaining the Recent Performance of Australia's Manufactured Exports, Reserve Bank of Australia, *Research Discussion Paper*, 10.
- Ministry of Finance and Ministry of National Planning (1999). *Economic and Fiscal Update: Supplement To The 2000 Budget Address*, Republic of the Fiji Islands, p. 15.
- Phillips, P. and P. Perron (1988). Testing for a Unit Root in Time Series Regression, *Biometrika*, 75, pp. 335-46.
- Pindyck, R. and D. Rubinfeld (1981). *Econometric Models and Economic Forecasts*, McGraw-Hill Book Co., Singapore.
- Okonkwo, I.C. (1989). The Erosion of Agricultural Exports in an Oil Economy: The Case of Nigeria." *Journal of Agricultural Economics*, 40, (3).
- Reinhart, C.M. (1995). Devaluations, Relative Prices and International Trade, *International Monetary Fund Staff Papers*, 42(2), pp. 290-312.
- Rogers, A. (2000). An Analysis of the Determinants of Fiji's Imports, Reserve Bank of Fiji, *Working Paper*, 00/03.
- Said, S.E. and D.A. Dickey (1984). Testing for Unit Roots in Autoregressive Moving Average Models of Unknown Order, *Biometrika*, 71, pp. 599-607.

Samiei, H. (1994). Exchange Rate Fluctuations and UK Manufacturing Exports, *International Monetary Fund Working Paper*, 132, p. 9.

Williams, G. and S. Morling (2000). Modelling Output Fluctuations in Fiji, Reserve Bank of Fiji, *Working Paper*, 00/01.