Determinants of Fiji's Major Exports

Ronal Chand & Dr. Rup Singh

Centre for Economic Policy & Modelling (CEPM)

School of Economics

The University of the South Pacific

Overview

- Trade is the heart of economic growth - domestic exports seem to be its pulse

- Fiji Islands have meaningfully engaged in international trade within and outside the region

- This research explores key determinants of selected exports of Fiji (tourism, sugar and gold). These comprise of 66% of total domestic exports

- Trade can only stimulate economic growth and reverse trade imbalance if income elasticity of exports is higher than income elasticity of imports – Marshall-Learner condition

Introduction

- Developing countries realise that instead of implementing import restrictions, they should engage in export promotion

- They have also resorted to use exchange rate policies to make exports more competitive

- As a result of greater openness, foreign direct investment has supported many countries to acquire new technology and become more efficient

- The nature of trade promotion, trading partner income and global competition, etc. determine export performance but trade dynamics are unpredictable

- Hence, it is vital to identify determinants of Fiji's exports. This will provide support to sectorial-based export promotion and growth policies.

Literature Review - Fiji's Context

- Prakash and Maiti (2014) found a positive and significant impact of real exchange rate on goods and services trade in Fiji.

- Kumar (2009) estimated that income elasticity was 1.08 and relative price elasticity was 0.83 for Fiji - concludes exports can promote growth

- Gani (2010) estimated a variant of Gravity Model and supports that exports impacts incomes of PICs.

- Ram (2003) employed the VAR framework and showed a strong relationship between exports and real trading partner income.

- Narayan and Narayan (2004) estimated income elasticity between 0.70 to 0.81 and exchange rate elasticity between 1.30 to 1.49 – concluded export promotion is important

- Singh (2006) and Rao and Singh (2007) estimated income elasticity is close to unity and relative price elasticity of 1.25
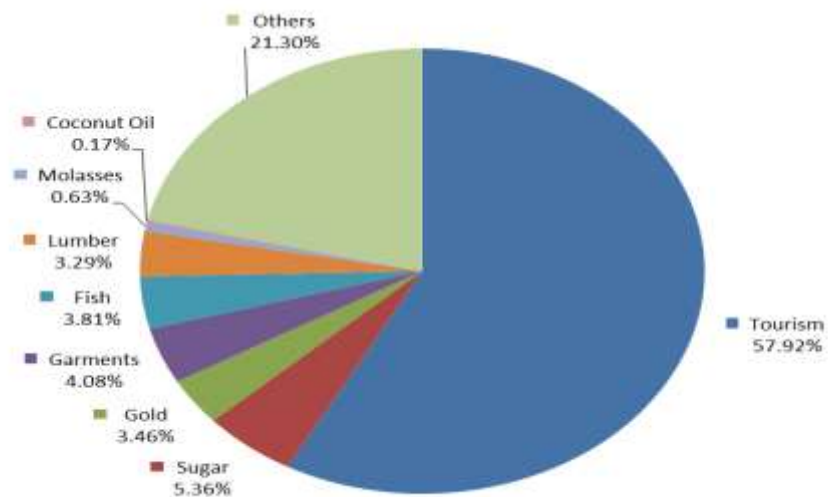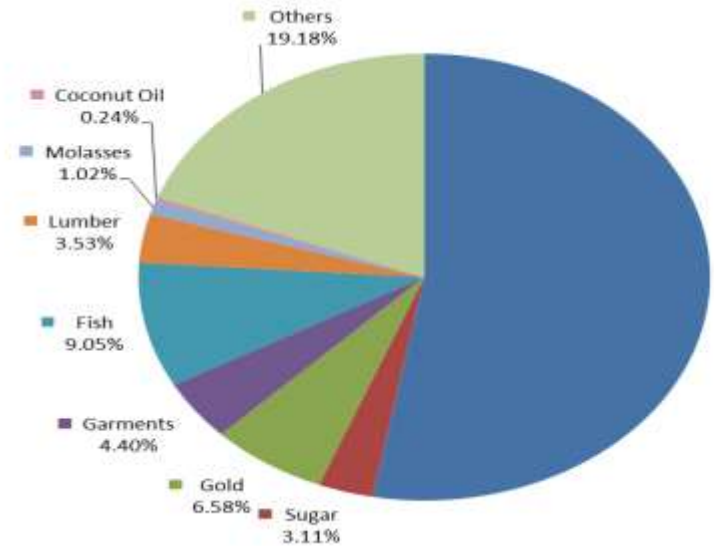
Figure A1 Export share of Fiji in 2015

Others 21.30%
Coconut Oil 0.17%
Molasses 0.63%
Lumber 3.29%
Fish 3.81%
Garments 4.08%
Gold 3.46%
Sugar 5.36%
Tourism 57.92%

Figure A2 Export share of Fiji in 2010

Others 19.18%
Coconut Oil 0.24%
Molasses 1.02%
Lumber 3.53%
Fish 9.05%
Garments 4.40%
Gold 6.58%
Sugar 3.11%

Figure A3 Export share of Fiji in 2005

Others 18.22%
Coconut Oil 0.23%
Molasses 0.60%
Lumber 2.72%
Fish 4.99%
Garments 7.25%
Gold 3.57%
Sugar 13.47%
Tourism 48.96%
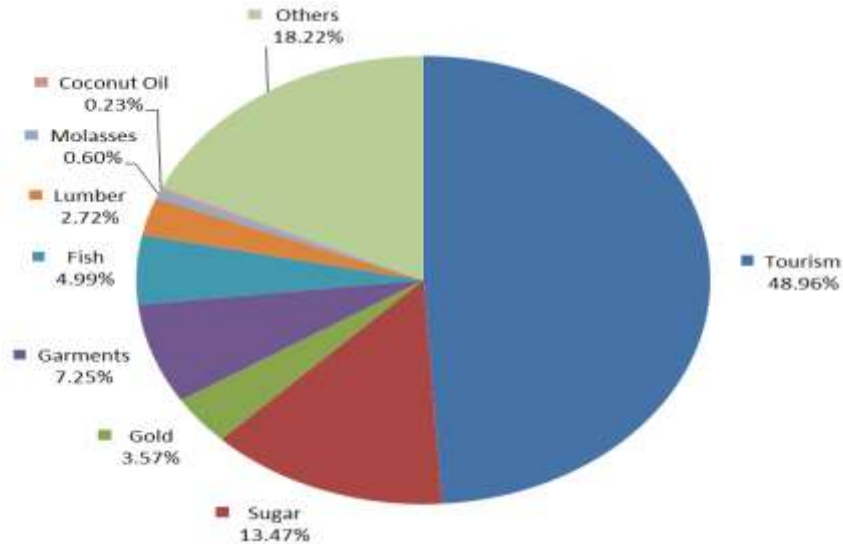
Figure A4 Export share of Fiji in 2000

Others 16.08%
Coconut Oil 0.26%
Molasses 0.68%
Lumber 3.12%
Fish 6.19%
Garments 23.15%
Gold 5.00%
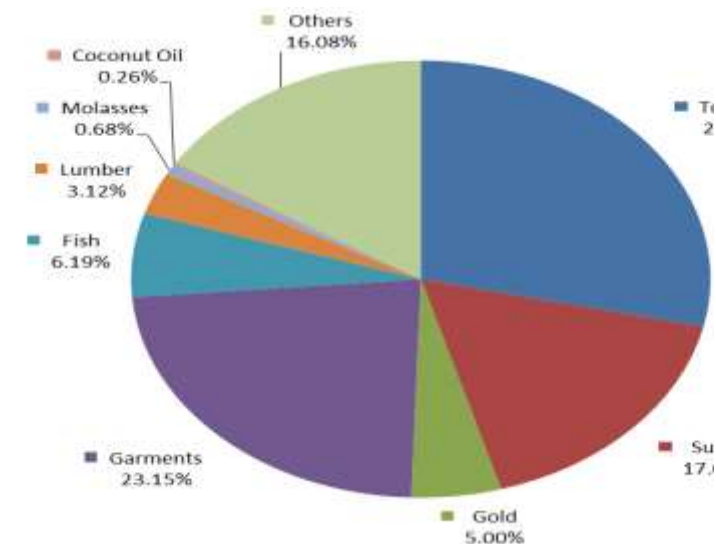
Source: (Fiji Islands Bureau of Statistics)

Export Trends in Fiji

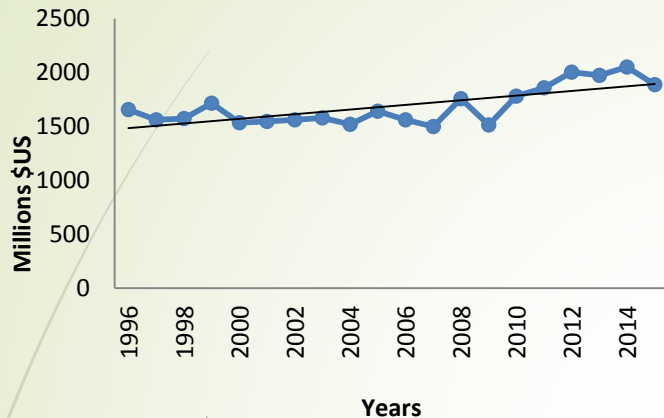**Figure 1 Total Export of Goods & Services, 1996-2015**

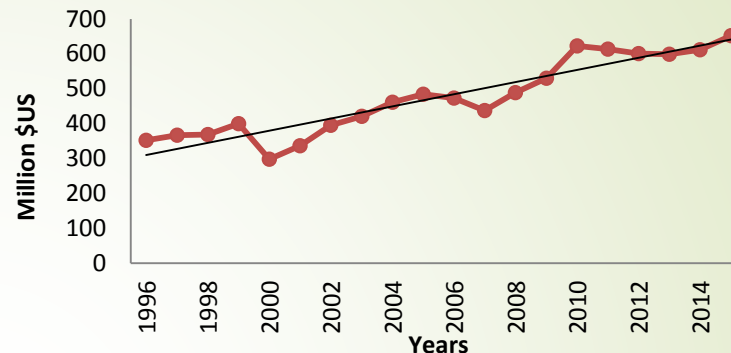**Figure 2   Export of Tourism, 1996-2015**

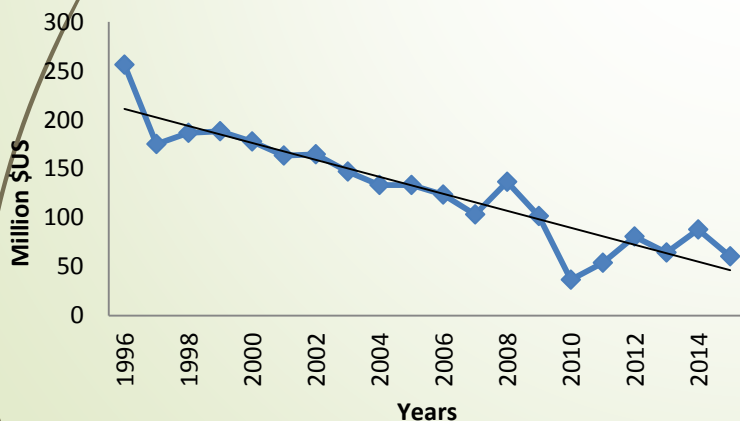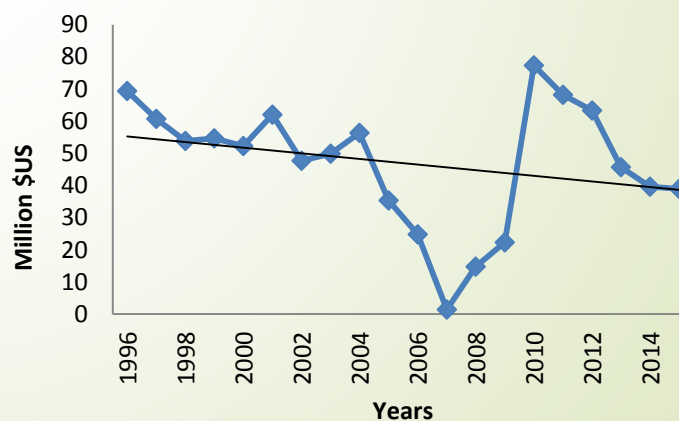**Figure 3   Export of Sugar, 1996-2015**

Figure 4   Export Earnings of Gold, 1996-2015

Source: Reserve Bank of Fiji (Various issues)

Methodology

- A variant of Gravity Model is used to explain demand for Fiji major exports. In basic form the GM is:

$$Trade = f \left[\frac{Dist}{C \operatorname{os} t} \right]$$

- In logs, it is: $\log(Trade) = \log(Dist) - \log(C \operatorname{os} t)$

$$\ln(RX_{it}) = \beta_{0i} + \beta_{1i} \ln(Y_{ti}^{*}) - \beta_{2i} \ln \left[E_{it} \times \frac{P_{it}^{*}}{P_{it}} \right] + \beta_{3i} \ln(Z_{it}) + e_{it}$$

- Relative prices are adjusted with nominal exchange rate – devaluation will promote RX.

- RX is real exports of type (i), Y^{*} trading partner income, P and P* are domestic and trading partner price of exportables, respectively, E is nominal effective exchange rate and e is the *niid* errors term

Empirical Results – 1 What determines exports?

Table 1 Long Run Elasticities (1970-2015)

	Aggregate	Sugar	Tourism	Gold
Constant	2.950(0.00)	12.142(0.00)	2.242(0.00)	-0.007(0.96)
$\ln Y_t^*$	0.912(0.00)	1.212(0.06)	0.711(0.00)	0.267(0.00)
$\ln\left(E \times \dfrac{P_{it}^*}{P_{it}}\right)$	-0.224 (0.05)	-0.811(0.03)	-0.260(0.02)	-0.167(0.02)
Time	---	-0.071(0.03)	---	---
$\ln SS_t$	---	-1.848(0.00)	---	---
COUP	---	---	-0.108(0.00)	---
$\ln QS_t$	---	---	0.373(0.07)	---
$\ln SC_t$	---	---	---	0.429(0.00)
$\ln RW_t$	---	---	---	-0.248(0.03)
Notes: (1) standard errors are in brackets. (2) Phillips-Hansen (1990) method is used with truncation lags where the coefficients stabilised, normally at 1/3 of the sample size.				

Results – 2a Does trade promote growth?

	A	B	C	D	E-2SIV
Constant	0.007[0.82]	-0.118[0.00]**	0.047[0.91]	-0.149[0.00]**	-0.191[0.01]**
$\Delta \ln HK_{t-1}$	13.991[0.01]**	10.351[0.00]**	9.747[0.01]**	12.905[0.00]**	16.279[0.01]**
$\Delta \ln RX_{t-2}$	0.054[0.13]	0.0532[0.08]	.0578[0.09]	0.056[0.05]*	0.075[0.06]
$\Delta \ln GOV_{t-1}$	0.137[0.02]*	---	---	---	---
$\Delta \ln IRAT_{t-2}$	0.054[0.09]	---	---	---	---
$POLITY2_{t-1}$	0.002[0.14]	0.002[0.06]	0.003[0.15]	0.003[0.03]*	0.003[0.04]*
$\Delta \ln GG_t$	---	0.0176[0.00]**	0.168[0.00]**	0.279[0.00]**	0.374[0.03]*
$\Delta \ln GG_{t-2}$	---	0.178[0.00]**	0.184[0.01]**	0.219[0.00]**	0.264[0.01]**
$\ln(GG \times RX)_{t-1}$	---	---	0.014[0.68]	---	---
$\Delta \ln(GG \times RX)_{t-1}$	---	---	---	0.054[0.11]	0.089[0.06]
COUP	-0.082[0.00]**	-0.074[0.02]*	-0.075[0.00]**	-0.080[0.00]**	-0.092[0.00]**
$\overline{R}^2$	0.503	0.634	0.602	0.697	0.663[0.614]
SER	0.020	0.017	0.018	0.015	0.017
$\chi^2_{(sc)}$	5.57[0.02]*	3.17[0.08]	3.48[0.06]	0.900[0.34]	0.061[0.80]
$\chi^2_{(ff)}$	0.15[0.70]	2.10[0.15]	2.71[0.10]	0.007[0.93]	0.258[0.61]
$\chi^2_{(n)}$	1.30[0.52]	1.37[0.50]	1.22[0.54]	1.934[0.38]	4.279[0.12]
$\chi^2_{(hs)}$	0.74[0.39]	1.79[0.18]	0.94[0.33]	1.721[0.19]	0.002[0.96]

Notes: (1) Standard errors are reported beside the coefficients. (2) Variables significant at 5% are denoted with * and those at 1% with **. (3) Chi-square tests (LM version) are for serial correction *(SC)*, functional from mis-specification *(ff)*, normality in residuals *(n)* and heteroscedasticity *(hs)*.

Conclusion and policy

- Trade policy surrounding devaluation and import substitution have failed in Fiji - their impactions have been short-lived requiring further adjustments

- Specifically on devaluation, the theoretically consistent J-curve effect fails to persist, implying unless domestic capacity is developed, trade performance will not improve

- Exports promotion, especially in large scale commercial agriculture, based on the principle of comparative advantage may work

- Important factors that promote Fijian exports are: supportive private investment, relative prices, trading partner incomes, productivity and supply shocks

- However, their impact on individual exports are different - exchange rate affects sugar more significantly than tourism; while trading partner incomes strongly affects tourism than gold. For gold, both these effects are relatively small

Conclusion and policy

- Fiji seems to have good potential for tourism and gold, especially if quality and costs are adequately controlled.

- Sugar sector needs to align to the dynamics of the market and gold production needs increase in scale

- However, sugar and gold requires managing uncertainties surrounding productivity through serious reforms

- Income and relative price elasticities vary across three major tradable commodities, implying a general trade policy may not work - interventions must be specific to the needs of each industry

- Growth effects of exports is significant and positive, but could be amplified through better export promotion and trade facilitation.

- The dynamics of exports are explained by structural variables, such as political situation, devaluation policy, climatic changes, scale effects, quality of exports and real wages.

Conclusion and policy

- Higher productivity, more private investment & sectorial funding together with better trade facilitation will promote competiveness of Fiji's exports

- Although exports promoted through good governance positively contribute to Fiji's growth, the change in the manner in which governance and exports co-operate also makes a significant contribution to growth in Fiji.

- The key to promoting trade-based growth in Fiji is good governance with higher export productivity

- Fiji needs to be professionally productive!

THANK YOU

Email: chand_rn@usp.ac.fj

Phone: 9767846