

**SCHOOL OF ECONOMICS**

WORKING PAPER

**A Note on Measuring Liquidity in Fiji's Banking System:  
Two Procedures**

T.K. Jayaraman  
School of Economics  
Faculty of Business and Economics  
The University of the South Pacific  
Fiji Islands

**No. 2009/15**

**December 2009**

This paper presents work in progress in the School of Economics at USP.  
Comments, criticisms and enquiries should be addressed to the corresponding author.  
*Copyright © 2009 by the authors. All rights reserved.*

# **A Note on Measuring Liquidity in Fiji's Banking System: Two Procedures**

**T.K. Jayaraman**

## **Abstract**

This paper examines liquidity in the banking system under a fixed exchange rate regime. By employing two measurement procedures, it is found during last 15-year period (1994-2008) and particularly, in recent months, there have been large fluctuations in liquidity. They are partly influenced by changes in net foreign assets and changes in domestic credit, as well as in commercial banks' decision in regard to keeping precautionary reserves, over and above the statutorily required reserves.

## **I. Introduction**

Liquidity position in Fiji's banking system has been attracting attention from time to time. There were reports on concerns expressed by bankers and businessmen. The objective of this paper is to define and measure liquidity in the banking system in Fiji through theoretical and practical approaches as adopted by monetary authorities. The paper is organized on the following lines: the second section gives a background as well as a discussion on components of money supply with an outline on liquidity measurement procedures; the third section presents estimates of liquidity and the fourth and final section presents a summary and conclusions.

## **II. A Background**

In late January and early February 2009, when the banks' lending rates of interest in Fiji tended to go up and flows of credit to private sector recorded declines, commercial banks attributed the situation to the tightening of liquidity in the banking system. There were concerns whether it was due to any measures taken by the country's central bank, the Reserve Bank of Fiji (RBF) to reduce money supply.

In a press statement in February 2009, RBF clarified the position stating that the market liquidity had been "a direct result of outflows of foreign reserves and not from any deliberate policy actions of the Reserve Bank" (RBF 2009a). As foreign exchange reserves declined further in the next few months, money supply got reduced further. With a view to alleviating the situation, RBF took a series of important monetary policy actions beginning as early as January 2009. These included (i) reduction in central bank lending rates effective January 22, on borrowings by commercial bank: the secured borrowing rate was reduced to 3 percent from 6 percent; and unsecured borrowing to 11 percent from 16 percent; (ii) announcement of Export Finance Facility under which banks could borrow from central bank at 2 percent for lending to exporters; (iii) reduction in the statutory reserve deposit (SRD) ratio to 5 percent from 6 percent, which became effective from April 7. Additionally on April 15, RBF announced the devaluation of the currency by 20 percent, which automatically led to re-valuation of the existing stock of net foreign assets upwards by 20 percent, contributing to a strong rise in money supply and consequently improving liquidity (RBF 2009b).

### *Money supply in Fiji*

While interest rate is determined in the market place by the interaction of supply and demand for credit, money supply in Fiji under the fixed exchange rate regime is primarily influenced by changes in the stock of net foreign assets and domestic credit (Ali and Jayaraman 2001).

The linkage is best understood by looking at the consolidated balance sheet of the banking system and the central bank. The balance sheet of the commercial banks is given by assets on left-hand side and liabilities on the right hand side:

$$LP + GB + RCB = DD + DST + CB \quad (1)$$

where,

LP = loans to the non-bank public;  
 GB = loans to the government;  
 RCB = reserves with the central bank;  
 DD = demand deposits with commercial banks;  
 DST = savings and time deposits with commercial banks; and  
 CB = Credit from central bank

The central bank's balance sheet is given as assets on left hand side and liabilities on right hand side.

$$NFA + CG + CB = CP + RCB \quad (2)$$

where,

NFA = net foreign assets;  
 CG = credit by central bank to government;  
 CB = credit by central bank to commercial banks;  
 CP = currency held by non-bank public; and  
 RCB = reserves of commercial banks with central bank.

The consolidated balance sheet of the banking system is obtained by combining equations (1) and (2) as

$$NFA + CG + LP + GB = CP + DD + DST \quad (3)$$

The right hand side of (3) is money supply (MS), which comprises currency held by public and the demand deposits and savings deposits and time deposits held by public with the commercial banks. The left hand side is the sum of net foreign assets held by central bank and commercial banks, and domestic credit (DC) by the banking system, which comprises credit to government and credit to the public both by commercial banks and credit to the government by the central bank.

Therefore, we derive the following equation

$$NFA + DC = MS \quad (4)$$

where,

DC = (CG + LP + GB)  
 MS = (CP + DD + DST); money supply

Thus, we identify the factors responsible for influencing money supply.

If net foreign assets (consisting of those held by RBF and those held by commercial banks) rise, they cause a rise in money supply. An increase in domestic credit, that is, any increase in loans to the public by commercial banks, loans to the government by the commercial banks and by the central bank, would lead to rise in money supply.

Table 1 presents details of these components of money supply. Besides MS and DC, we have an adjusting item, known as other items, given in column (4). As it could be seen, money supply declined in recent years, notably from F\$ 3,325.9 million in 2007 to F\$ 3,097.7 million in 2008 and thereafter to F\$ 2,970.6 million in March 2009. The primary cause was attributed to fall in foreign reserves from F\$ 732.2 million in 2007 to F\$ 466.3 million in 2008 and F\$ 329.5 million in March 2009. It is worth noting during this period, domestic credit did not decline as much as foreign reserves. In fact, domestic credit rose all along from F\$ 3,166.4 million in December 2008, the historical high to newer heights to F\$ 3,208 million in March 2009, just a month before devaluation of the currency in April 2009.

After devaluation of the currency by 20 percent in April 2009, money supply has been rising: it was F\$ 3,060.5 million in April 2009, F\$ 3,108.7 million in May 2009 and F\$ 3,112.1 million in June. As the foreign reserves held by the monetary authorities touched the record high figure of F\$ 1 billion on September 22, 2009<sup>1</sup>, after beating the previous record of F\$ 912 million achieved in 2000, money supply in September 2009 was at F\$ 3,256.2 million.

<b>Year</b>	<b>Net Foreign Assets (\$ Mill)</b>	<b>Domestic Credit (\$ mill)</b>	<b>Other Items (\$ Mill)</b>	<b>Money Supply (M2) (\$ Mill)</b>
1994	380.9	1256.7	-223.2	1414.4
1995	464.4	1268.9	-257.6	1475.7
1996	526.6	1322.0	-400.2	1448.4
1997	505.2	1187.6	-334.3	1358.5
1998	688.3	1232.2	-566.7	1353.8
1999	747.9	1285.1	-486.9	1546.1
2000	841.7	1358.8	-686.6	1513.9
2001	752.6	1324.6	-610.1	1467.1
2002	617.1	1391.7	-426.3	1582.5
2003	683.3	1662.9	-365.7	1980.5

<sup>1</sup> This is due to measures resorted to by RBF to safeguard foreign reserves as well as allocation of F\$ 190 million by IMF (RBF 2009 c).

2004	750.7	1871.2	-436.2	2185.7
2005	479.6	2368.7	-334.5	2513.8
2006	441.7	2927.6	-357.0	3012.3
2007	732.2	3020.1	-426.4	3325.9
2008	466.3	3166.4	-539.0	3093.7
2009 Jan	442.2	3187.5	-550.2	3079.5
Feb	364.5	3223.5	-578.6	3009.4
Mar	329.5	3208.1	-567.0	2970.6
Apr	533.3	3214.9	-687.7	3060.5
May	568.1	3230.1	-689.5	3108.7
June	554.8	3237.1	-679.8	3112.1
July	629.4	3242.6	-721.3	3150.7
Aug	813.4	3295.7	-909.8	3199.3
Sep	905.8	3287.7	-937.3	3256.2

In fact, as money supply rose due to both rise in net foreign assets as well as in domestic credit in September 2009, RBF thought it fit to raise the statutory reserve deposit ratio effective December 2009 to 7% from the current requirement at 5%, which has been in vogue since April 2009. The grounds advanced by RBF were: the amount of liquidity in the banking system has been on an upward trend rising significantly in the September quarter by around F\$ 170 million to around F\$ 350 million from levels of below F\$ 30 million in early April (RBF 2009d)

That brings us to the subject of measurement of liquidity.

### III. Measuring Liquidity

#### *Measurement Procedures*

Commercial banks are required under the current legislation governing the RBF to keep with RBF a certain proportion of their deposit liabilities (D). In addition to the required reserves, which is also known as prudential requirements, banks do keep certain additional reserves to meet the clearance obligations and unexpected withdrawals especially during the holiday seasons. These extra reserves are known as excess reserves.

Thus, we have two components of reserves (R): required reserves (RR) and excess reserves (ER). When the market rate of interest is high, banks would rather prefer to keep a minimum level of excess reserves, as opportunity cost of holding excess reserves in terms of foregone interest income would be relatively high. Thus, during expansion phase of the economy, banks might keep less excess reserves and vice versa.

The excess liquidity is then defined as reserves minus excess reserves. The ratio of excess liquidity to deposits denotes the liquidity; the higher the ratio, the greater the liquidity and lower the ratio, the lower the liquidity. What would be the optimum or desirable level is entirely up to the central bank, depending upon past experiences in regard to inflationary or deflationary pressures on the economy.

### *Two measures*

There are two procedures for deriving Reserves held by commercial banks, which will be examined in this Note. We first delineate the procedure used by International Monetary Fund (IMF) in its recent study on Solomon Islands (IMF 2007). According to this procedure, R is obtained by subtracting currency from monetary base, known as reserve money, as reported (line 42) in IMF's publication *International Financial Statistics* (IMF 2009). The excess reserves are then arrived at by subtracting the required reserves, which are obtained applying the SRD ratio to deposits. Thereafter, the liquidity ratio is calculated by expressing the excess reserves as a ratio of deposits.

In symbols,

$$\begin{aligned} R &= RM - C \quad \dots\dots\dots (1) \\ ER &= R - RR \dots\dots\dots (2) \\ LR &= ER/D \quad \dots\dots\dots (3) \end{aligned}$$

where,

RM = reserve money  
 C = currency outside the banks  
 R = reserves of commercial banks  
 RR = required reserves  
 ER = excess reserves  
 LR = liquidity ratio  
 D = deposits

The other procedure is the one adopted by RBF, according to which excess reserves are derived by subtracting the required reserves from deposits kept by commercial banks with RBF. Thereafter, the liquidity ratio is derived by calculating the percentage of excess reserves as a proportion of deposits.

In symbols,

$$\begin{aligned} ER &= DRBF - RR \quad \dots\dots\dots (4) \\ LR &= ER/D \quad \dots\dots\dots (5) \end{aligned}$$

where, besides symbols already defined,

DRBF = deposits by commercial banks held with RBF

Table 2 presents the ratios calculated as per two procedures. It is seen that excess liquidity ratios calculated by Procedure 2 are higher than the ones reported under Procedure 1.

<b>Table 2: Liquidity Ratios: Procedure 1 and Procedure 2</b>		
<b>Year</b>	<b>Procedure 1</b>	<b>Procedure 2</b>
1994	2.4	2.5
1995	3.3	5.7
1996	3.1	9.0
1997	4.4	8.5
1998	4.9	12.6
1999	13.3	16.9
2000	9.0	11.0
2001	13.7	14.9
2002	13.9	16.3
2003	17.0	22.9
2004	9.0	14.1
2005	6.4	8.3
2006	6.6	6.2
2007	14.5	14.1
2008	5.6	2.6

Notes: Procedure 1 as adopted by IMF (2008)  
Procedure 2 as adopted by RBF (2009c)

Table 3 presents the ratios for each month during 2008 and up to September 2009. Since IFS data, utilized on the basis of October 2009 CD ROM ((IMF 2009), cover the period up to June 2009, the ratios for July to September 2009 under procedure 1 could not be worked out. Table 3 shows that for the first eight months of 2008, the ratios obtained under two procedures are quite similar and for subsequent months, ratios under Procedure 1 are much higher than those obtained under Procedure 2. However, there is a notable rise in trend in the liquidity ratios after April 2009, reflecting the revaluation of net foreign assets and the resultant rise in money supply.



<b>Table 3: Liquidity Ratios: Jan 2008 to Sep 2009</b>			
	<b>Months</b>	<b>Procedure 1</b>	<b>Procedure 2</b>
<b>2008</b>	Jan	15.5	12.6
	Feb	13.4	12.5
	Mar	13.0	12.4
	April	14.1	13.2
	May	11.4	10.7
	June	11.9	11.6
	July	10.7	10.6
	Aug	11.7	10.5
	Sep	11.0	9.7
	Oct	8.7	6.6
	Nov	7.6	5.3
	Dec	5.6	2.6
<b>2009</b>	Jan	5.2	1.9
	Feb	3.7	0.6
	March	4.3	0.9
	April	6.5	3.6
	May	7.7	5.8
	June	8.9	7.1
	July	NA	8.7
	Aug	NA	10.4
	Sep	NA	11.7

Notes: Procedure 1 uses IMF Procedure (2008)  
NA = Not available.

#### **IV. Summary and Conclusions**

This short note utilized two procedures for calculating liquidity in the banking system. The first employs the calculation procedure from reserve money or monetary base as a starting point, whereas the second procedure begins from the deposits kept with RBF for covering the required reserves and settlement balances as well as precautionary reserves. Both procedures confirm that since September 2008, liquidity ratios were declining reaching quite low levels. That is also the period when net foreign assets were declining. Since April 2009, which witnessed re-valuation of the net foreign assets consequent to devaluation, liquidity position had improved.

While banks would always keep certain level of precautionary reserves besides the required reserves under law, involuntary excess liquidity is influenced by economic conditions, including the prevailing investment climate. Central banks are aware of potential inflationary effects when the involuntarily held excess reserves beyond the precautionary levels tend to be lent out rapidly. In such situations, rise in domestic credit would increase money supply and liquidity, when actually monetary authorities would like to tighten liquidity. Precautionary excess liquidity, on the other hand, is likely to be “less footloose and pose less of a risk in terms of inflation.” (IMF 2006).

This opens up further research possibilities. These include investigations on why and under what circumstances banks in Fiji and other five Pacific island countries, which have independent currencies, hold higher reserves exceeding the normally held level of precautionary reserves and how such situations are dealt with by monetary authorities.

## References

- Ali, A and T.K. Jayaraman (2001), *Monetary and Fiscal Policy Coordination*, Working Paper 01/01. Suva: Reserve Bank of Fiji.
- International Monetary Fund (IMF) (2009), *International Financial Statistics, CD Rom*, October 2009.
- IMF (2007), *Solomon Islands: Article IV Consultation: Staff Report*, Country Report, 07/304, Washington D.C.: IMF.
- Saxegaard, M. (2006), *Excess Liquidity and Effectiveness of Monetary Policy: evidence from Sub-Saharan Africa*, IMF Working Paper, WP/06/115, Washington, D.C.: IMF
- Reserve Bank of Fiji (RBF) (2009b), *Statement by Governor of the RB: Reserve Bank Announces the following Monetary Policy Changes*, Press Release, 15 April 2009.
- RBF (2009b), *Statement by Governor of the RBF: Monetary Policy Statement*, Press Release, 19 June 2009.
- RBF (2009c), *Economic Review: September 2009*, Vol. 26, No.3, 2009.
- RBF (2009d), *Reserve Bank Increases Statutory Reserve Deposit Requirement for Commercial Banks in Fiji*, Press Release, 6 November 2009.

## Recent Working Papers

### 2009/WP:

- 14 T.K Jayaraman and Evan Lau “*AID and Growth in Pacific Island Countries: A Panel Study*”
- 13 T. K. Jayaraman and Chee-Keong Choong “*Shocking*” *Aspects of Globalization and Pacific Island Countries: A Study of Vanuatu*
- 12 P.J.Stauvermann and G.C. Geerdink “*A Pleading for Policy - independent Institutional Organisation*”
- 11 P.J. Stauvermann and G.C. Geerdink *Competition between Regions with regard to Subsidies*
- 10 P.J. Stauvermann, G.C. Geerdink and A.E. Steenge *Innovation, Herd Behaviour and Regional Development*
- 9 T. K. Jayaraman, Chee-Keong Choong and Ronald Kumar *Nexus between Remittances and Economic Growth in Pacific Island Countries: A Study of Samoa*
- 8 Azmat Gani and Saia Kami *Food prices and health outcomes in Pacific Island Countries*
- 7 Biman C. Prasad *Sustaining Development in Pacific Island Countries in a Turbulent Global Economy*
- 6 T.K Jayaraman *Monetary Policy Response of Pacific Island Countries to Global Economic Downturn*
- 5 Peter J. Stauvermann and Sunil Kumar *Can the Fijian Economy Gain from Ethanol Production?*
- 4 T.K.Jayaraman and Chee-Keong Choong *Monetary Policy Transmission Mechanism in Vanuatu*
- 3 T.K.Jayaraman and Chee-Keong Choong *How does Monetary Policy Work in Solomon Islands?*
- 2 T.K.Jayaraman and Chee-Keong Choong, *Monetary Policy Transmission Mechanism in Vanuatu*
- 1 T.K.Jayaraman and Chee-Keong Choong, *Is Money Endogenous In The Pacific Island Countries?*

**2008/WP:**

- 20 T.K.Jayaraman and Evan Lau, *Rise in Oil price and Economic growth in Pacific Island: An Empirical Study.*
- 19 T.K.Jayaraman and Chee-Keong Choong, *External current account and domestic imbalances in Vanuatu: A Study on Causality Relationships.*
- 18 T.K.Jayaraman and Chee-Keong Choong, *Channels of Monetary policy Transmission mechanism in pacific island countries: A Case Study of Fiji: 1970-2006.*
- 17 T.K.Jayaraman and Chee-Keong Choong, *Impact of high oil price on Economic Growth in small Pacific island countries.*
- 16 T.K. Jayaraman and Evan Lau, *Causal Relationships between current account Imbalances and budget deficits in Pacific island countries: A panel Cointegration Study.*
- 15 T.K. Jayaraman, *Do Macroeconomic Fundamentals Influence External Current Account Balances?*
- 14 T.K. Jayaraman and Chee-Keong Choong, *Is Fiji's Real Exchange Rate Misaligned.*
- 13 T.K.Jayaraman, Chee-Keong and Siong-Hook Law, *Is Twin Deficit Hypothesis in Pacific Island Countries valid? An Empirical Investigation.*
- 12 Tausi Taupo, *Estimating the production function for Fiji.*
- 11 Tausi Taupo, *Estimating demand for money in Philippines.*
- 10 Filipo Tokalau, *The Road that is; for whom and why: Impacts of tourism Infrastructural development on Korotogo Village, Fiji islands.*
- 9 Mahendra Reddy, *Sequential Probit modeling of the determinants of child Labour: Is it a case of luxury, distributional or Substitution Axiom?*
- 8 Neelesh Gounder, Mahendra Reddy and Biman C. Prasad, *Support for Democracy in the Fiji Islands: Does Schooling Matter?*
- 7 Sunil Kumar, *Fiji's declining formal sector economy: Is the informal sector an answer to the declining economy and social security?*
- 6 T K Jayaraman and Evan Lau, *Does External Debt Lead to Economic Growth in the Pacific Island Countries: An Empirical Study*
- 5 Gyaneshwar Rao, *The Relationship between Crude and Refined Product Market: The Case of Singapore Gasoline Market using MOPS Data*
- 4 Bill B Rao and Saten Kumar, *A Panel Data Approach to the Demand for Money and*

- the Effects of Financial Reforms in the Asian Countries.*
- 3 Bill B Rao and Rup Singh, *Contribution of Trade Openness to Growth in East Asia: A Panel Data Approach.*
- 2 Bill B Rao, Rup Singh and Saten Kumar, *Do We Need Time Series Econometrics?*
- 1 Rup Singh and Biman C Prasad, *Small States Big Problems Small Solutions from Big Countries.*

**2007/WP:**

- 24 Biman C Prasad, *Changing Trade Regimes and Fiji's Sugar Industry: Has the Time Run-out for Reform or is there a Plan and Political Will to Sustain it?*
- 23 B Bhaskara Rao and Rup Singh, *Effects of Trade Openness on the Steady State Growth Rates of Selected Asian Countries with an Extended Exogenous Growth Model.*
- 22 T K Jayaraman and Jauhari Dahalan, *How Does Monetary Policy Transmission Mechanism Work in Samoa?*
- 21 T K Jayaraman and Chee-Keong Choong, *More on "Shocking Aspects" of A Single Currency For Pacific Island Countries: A Revisit*
- 20 Biman C Prasad, *Economic Integration and Labour Mobility: Are Australia and New Zealand Short-Changing Pacific Forum Island Countries?*
- 19 T K Jayaraman and C K Choong, *Monetary Policy Transmission Mechanism In The Pacific Islands: Evidence From Fiji.*
- 18 K L Sharma, *High-Value Agricultural Products of The Fiji Islands: Performance, Constraints And Opportunities*
- 17 Saten Kumar, *Income and Price Elasticities of Exports in Philippines.*
- 16 Saten Kumar *Determinants of Real Private Consumption in Bangladesh*
- 15 K.L Sharma, *Public Sector Downsizing in the Cook Islands: Some Experience and Lessons*
- 14 Rup Singh and B C Prasad, *Do Small States Require Special Attention or Trade Openness Pays-off.*
- 13 Rup Singh, *Growth Trends and Development Issues in the Republic of Marshall Islands.*

- 12 B. Bhaskara Rao and G Rao, *Structural Breaks and Energy Efficiency in Fiji.*
- 11 Rup Singh, *Testing for Multiple Endogenous Breaks in the Long Run Money Demand Relation in India*
- 10 B.B Rao, Rukimini Gounder and Josef Leoning, *The Level And Growth Effects in the Empirics of Economic Growth: Some Results With Data From Guatemala*
- 9 B. Bhaskara Rao and K.L Sharma, *Testing the Permanent Income Hypothesis in the Developing and Developed Countries: A Comparison Between Fiji and Australia.*
- 8 T. K Jayaraman and Chee K Choong, *Do Fiscal Deficits Cause Current Account Deficits In The Pacific Island Countries? A Case Study of Fiji*
- 7 Neelesh Gounder and Mahendra Reddy, *Determining the Quality of Life of Temporary Migrants using Ordered Probit Model.*
- 6 T K Jayaraman, *Fiscal Performance and Adjustment in the Pacific Island Countries: A Review.*
- 5 Yenteshwar Ram and Biman C Prasad Assessing, *Fiji' Global Trade Potential Using the Gravity Model Approach.*
- 4 Sanjesh Kumar and Biman C Prasad, *Contributions of Exports of Services Towards Fiji's Output*
- 3 Paresh Kumar Narayan, Seema Narayan, Biman Chand Prasad and Arti Prasad, *Tourism and Economic Growth: a Panel Data Analysis for Pacific Island Countries*
- 2 T.K. Jayaraman and Chee-Keong Choong, *Will External Borrowing Help Fiji's Growth.*
- 1 Arti Prasad Paresh Kumar Narayan and Biman Chand Prasad, *A Proposal for Personal Income Tax Reform For The Fiji Islands*

**2006/WP:**

- 34 Paresh K Narayan and Arti Prasad, *Modelling Fiji-US Exchange Rate Volatility.*
- 33 T.K. Jayaraman and Chee-Keong Choong, *Why is the Fiji Dollar Under Pressure?*
- 32 T.K. Jayaraman and Baljeet Singh, *Impact of Foreign Direct Investment on Employment in Pacific Island Countries: An Empirical Study of Fiji*
- 31 B. Bhaskara Rao and Toani B Takirua, *The Effects of Exports, Aid and Remittances on Output: The Case of Kiribati*
- 30 B. Bhaskara Rao and Saten Kumar, *Cointegration, Structural Breaks and the Demand for Money in Bangladesh*

- 29 Mahendra Reddy, *Productivity and Efficiency Analysis of Fiji's Sugar Industry*.
- 28 Mahendra Reddy, *Preferential Price and Trade Tied Aid: Implications on Price Stability, Certainty and Output Supply of Fiji's Sugarcane*.
- 27 Maheshwar Rao, *Challenges and Issues in Pro-Poor Tourism in South Pacific Island Countries: The Case of Fiji Islands*
- 26 TK Jayaraman and Chee-Keong Choong, *Structural Breaks and the Demand for Money in Fiji*
- 25 B. Bhaskara Rao and Saten Kumar, *Structural Breaks and the Demand for Money in Fiji*
- 24 Mahendra Reddy, *Determinants of Public Support for Water Supply Reforms in a Small Developing Economy*.
- 23 Mahendra Reddy, *Internal Migration in Fiji: Causes, Issues and Challenges*.
- 22 Mahendra Reddy and Bhuaneshwari Reddy, *Analyzing Wage Differential by Gender Using an Earnings Function Approach: Further Evidence from a Small Developing Economy*.
- 21 Biman C. Prasad Trade: *"WTO DOHA Round: An Opportunity or a Mirage for Fiji*.
- 20 Benedict Y. Imbun, *Review of Labour Laws in Papua New Guinea*
- 19 Benedict Y. Imbun, *Review of Labour Laws in Solomon Islands*
- 18 Rup Singh Cointegration, *Tests on Trade Equation: Is Devaluation an Option for Fiji?*
- 17 Ganesh Chand, *Employment Relations Bill: An Analysis*.
- 16 TK Jayaraman and Chee-Keong Choong, *Public Debt and Economic Growth in the South Pacific Islands: A Case Study of Fiji*
- 15 TK Jayaraman and Chee-Keong Choong, *Aid and Economic Growth in Pacific Islands: An Empirical Study of Aid Effectiveness in Fiji*.
- 14 Rup Singh, *A Macroeconometric Model for Fiji*.
- 13 Rup Singh and Saten Kumar, *Private Investment in Selected Asian Countries*.
- 12 Ganesh Chand, *The Labour Market and Labour Market Laws in Fiji*
- 11 Carmen V-Graf, *Analysis of Skilled Employment Demand and Opportunities in the Pacific Labour Market*
- 10 Philip Szmedra, Kanhaiya L Sharma and Cathy L Rozmus, *Health Status, Health Perceptions and Health Risks Among Outpatients with Non-communicable Diseases in Three Developing Pacific Island Nations*



- 9 Heather Booth, Guangyu Zhang, Maheshwar Rao, Fakavae Taomia and Ron Duncan, *Population Pressures in Papua New Guinea, the Pacific Island Economies, and Timor Leste*
- 8 Mahendra Reddy, *Technical efficiency in Artisanal Fisheries: Evidence from a Developing Country.*
- 7 Paresk K Narayan and Biman C Prasad, *Macroeconomic Impact of the Informal Sector in Fiji*
- 6 Biman C Prasad, *Resolving The Agricultural Land Lease Problem in The Fiji Islands; Current Discussions and The Way Forward.*
- 5 Rup Singh & Saten Kumar, *Demand For Money in Developing Countries: Alternative Estimates and Policy Implications.*
- 4 B. Bhaskara Rao, Rup Singh & Fozia Nisha, *An Extension to the Neoclassical Growth Model to Estimate Growth and Level effects.*
- 3 Rup Singh & Saten Kumar, *Cointegration and Demand for Money in the Selected Pacific Island Countries.*
- 2 B. Bhaskara Rao & Rup Singh, *Estimating Export Equations.*
- 1 Rup Singh, *An Investment Equation for Fiji*

**2005/WP:**

- 27 Neelesh Gounder & Biman C. Prasad, *What Does Affirmative Action Affirm: An Analysis of the Affirmative Action Programmes for Development in the Fiji Islands*
- 26 B.Bhaskara Rao, Fozia Nisha & Biman C. Prasad *The Effects of Life Expectancy on Growth*
- 25 B. Bhaskara Rao, Rup Singh, & Neelesh Gounder, *Investment Ratio in Growth Equations*
- 24 T.K. Jayaraman, *Regional Economic Integration in the Pacific: An Empirical Study*
- 23 B. Bhaskara Rao & Maheshwar Rao, *Determinants of Growth Rate: Some Methodological Issues with Time Series Data from Fiji*
- 22 Sukhdev Shah, *Exchange Rate Targeting of Monetary Policy*
- 21 Paresk Narayan and Baljeet Singh, *Modeling the Relationship between Defense Spending and Economic Growth for the Fiji Islands*

- 20 TK Jayaraman, *Macroeconomics Aspects of Resilience Building in Small States*
- 19 TK Jayaraman, *Some “Shocking Aspects” of a Regional Currency for the Pacific Islands.*
- 18 Bimal B. Singh and Biman C. Prasad, *Employment-Economic Growth Nexus and Poverty Reduction: An Empirical Study Based on the East Asia and the Pacific Region*
- 17 Biman C. Prasad and Azmat Gani, *Savings and Investment Links in Selected Pacific Island Countries*
- 16 T.K. Jayaraman, *Regional Integration in the Pacific.*
- 15 B. Bhaskara Rao, *Estimating Short and Long Run Relationships: A Guide to the Applied Economist.*
- 14 Philip Szmedra, KL Sharma, and Cathy L. Rozmus, *Managing Lifestyle Illnesses in Pacific Island States: The Case of Fiji, Nauru and Kiribati.*
- 13 Philip Szmedra and KL Sharma, *Lifestyle Diseases and Economic Development: The Case of Nauru and Kiribati*
- 12 Neelesh Gounder, *Rural Urban Migration in Fiji: Causes and Consequences.*
- 11 B. Bhaskara & Gyaneshwar Rao, *Further Evidence on Asymmetric US Gasoline Price Responses*
- 10 B. Bhaskara Rao & Rup Singh, *Demand for Money for Fiji with PC GETS*
- 9 B. Bhaskara Rao & Gyaneshwar Rao, *Crude Oil and Gasoline Prices in Fiji: Is the Relationship Asymmetric?*
- 8 Azmat Gani & Biman C. Prasad, *Fiji’s Export and Comparative Advantage.*
- 7 Biman C. Prasad & Paresh K Narayan, *Contribution of the Rice Industry to Fiji’s Economy: Implication of a Plan to Increase Rice Production*
- 6 Azmat Gani, *Foreign Direct Investment and Privatization.*
- 5 G. Rao, *Fuel Pricing In Fiji.*
- 4 K. Bunyaratavej & Tk Jayaraman, *A Common Currency For The Pacific Region: A Feasibility Study.*
- 3 Sukhdev Shah, *Kiribati’s Development: Review And Outlook.*
- 2 T.K. Jayaraman, B.D. Ward, Z.L. Xu, *Are the Pacific Islands Ready for a Currency Union? An Empirical Study of Degree of Economic Convergence*
- 1 T.K. Jayaraman, *Dollarisation of The South Pacific Island Countries: Results Of A Preliminary Study*

**2004/WP:**

- 15 Vincent D. Nomae, Andrew Manepora'a, Sunil Kumar & Biman C. Prasad, *Poverty Amongst Minority Melanesians In Fiji: A Case Study Of Six Settlement*
- 14 Elena Tapuaiga & Umesh Chand, *Trade Liberalization: Prospects and Problems for Small Developing South Pacific Island Economies*
- 13 Paresh K. Narayan, Seema Narayan & Biman C. Prasad, *Forecasting Fiji's Exports and Imports, 2003-2020*
- 12 Paresh K. Narayan & Biman C. Prasad, *Economic Importance of the Sugar Industry in Fiji: Simulating the Impact of a 30 Percent Decline in Sugar Production.*
- 11 B. Bhaskara Rao & Rup Singh, *A Cointegration and Error Correction Approach to Demand for Money in Fiji: 1971-2002.*
- 10 Kanhaiya L. Sharma, *Growth, Inequality and Poverty in Fiji Islands: Institutional Constraints and Issues.*
- 9 B. Bhaskara Rao, *Testing Hall's Permanent Income Hypothesis for a Developing Country: The Case of Fiji.*
- 8 Azmat Gani, *Financial Factors and Investment: The Case of Emerging Market Economies.*
- 7 B. Bhaskara Rao, *The Relationship Between Growth and Investment.*
- 6 Wadan Narsey, PICTA, PACER and EPAs: *Where are we going? Tales of FAGS, BOOZE and RUGBY*
- 5 Paresh K. Narayan & Biman C. Prasad, *Forecasting Fiji's Gross Domestic Product, 2002-2010.*
- 4 Michael Luzius, *Fiji's Furniture and Joinery Industry: A Case Study.*
- 3 B. Bhaskara Rao & Rup Singh, *A Consumption Function for Fiji.*
- 2 Ashok Parikh & B. Bhaskara Rao, *Do Fiscal Deficits Influence Current Accounts? A Case Study of India.*
- 1 Paresh K. Narayan & Biman C. Prasad, *The Casual Nexus Between GDP, Democracy and Labour Force in Fiji: A Bootstrap Approach.*

**2003/WP:**

- 11 B. Bhaskara Rao & Rup Singh, *Demand For Money in India: 1953-2002.*
- 10 Biman C. Prasad & Paresh K. Narayan, *Fiji Sugar Corporation's Profitability and*

- Sugar Cane Production: An Econometric Investigation, 1972-2000.*
- 9 B. Bhaskara Rao, *The Nature of The ADAS Model Based on the ISLM Model.*
- 8 Azmat Gani, *High Technology Exports and Growth – Evidence from Technological Leader and Potential Leader Category of Countries.*
- 7 TK Jayaraman & BD Ward, *Efficiency of Investment in Fiji: Results of an Empirical Study.*
- 6 Ravinder Batta, *Measuring Economic Impacts of Nature Tourism.*
- 5 Ravinder Batta, *Ecotourism and Sustainability.*
- 4 TK Jayaraman & Rajesh Sharma, *Determinants of Interest Rate Spread in the Pacific Island Countries: Some Evidence From Fiji.*
- 3 T.K. Jayaraman & B.D. Ward, *Is Money Multiplier Relevant in a Small, Open Economy? Empirical Evidence from Fiji.*
- 2 Jon Fraenkel, *The Coming Anarchy in Oceania? A Critique of the 'Africanisation' of the South Pacific Thesis.*
- 1 T.K. Jayaraman, *A Single Currency for the South Pacific Island Islands: A Dream or A Distant Possibility?*