A Re-examination of Private Consumption in Fiji

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Abstract

Recently the Reserve Bank of Fiji (RBF) claimed that private consumption expenditure in Fiji has grown considerably in past years. For policy purposes, it is important to re-investigate the determinants of consumption in Fiji. This paper used alternative time series techniques to estimate real private consumption for Fiji using annual data from 1975-2005. It is found that the income and availability of consumer credit elasticities are significant and plausible. A stable real private consumption function is also attained using CUSUM and CUSUMSQ tests.

Keywords: Real Private Consumption, Income Elasticity and Availability of Consumer Credit Elasticity.

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1. Introduction

According to the simple Keynesian consumption function, consumption depends solely on disposable income in the current period. However, it does not consider individuals' expected path of income or time preference for consumption, which would be captured by the real rate of interest, representing the opportunity cost of spending. Therefore, there are contradictions between the simple Keynesian consumption function and empirical evidence. Friedman's (1957) permanent income hypothesis (PIH) takes into account lifetime income and is more general and better than the Keynesian absolute income hypothesis (AIH). Many economists treat PIH and Life Cycle Hypothesis (LCH) equal. The Hall's (1978) Random Walk Model (RW) suggests that both LCH and PIH are unsatisfactory and further modifications should be made.

Consumption has the largest share of aggregate expenditure and has implications for long run growth policies. The aim of this paper is to estimate the long run elasticities of real private consumption for Fiji. We have used the alternative time series techniques of General to Specific (GETS) and Johansen's Maximum Likelihood (JML) to estimate the consumption function for Fiji using annual data from 1975-2005. Our results imply that the income elasticity is around unity and the elasticity with respect to availability of consumer credit at its mean rate of 4.11% is around 0.20.

Our paper is organized as follows: Section 2 briefly discuss the trends in private consumption growth in Fiji. Section 3 provides empirical literature of consumption in Fiji and Section 4 details our specification and methodology. Empirical results are discussed in Section 5. Conclusion is stated in the final Section 6.

2. Trends in Private Consumption Growth

We now briefly discuss the broad trends in the variables of interest to provide a backdrop and to discuss the policy implications of our findings. The average growth rates of real private consumption ($\Delta \ln C$), real disposable income ($\Delta \ln Y$), the GDP deflator ($\Delta \ln P$),

and the availability of consumer credit (R) are given in Table 1 for the period 1975-2005 and for two sub-periods 1975-1990 and 1991-2005.

Table 1. Averages rates of growth of real private consumption, real disposable income, GDP deflator and the availability of consumer credit.

	$\Delta \ln C$	$\Delta \ln YD$	$\Delta \ln P$	R
1975-2005	3.75	2.15	6.31	4.11
1975-1990	3.49	2.43	10.23	2.06
1991-2005	5.45	1.46	3.62	4.09

Over the period 1975 -2005, consumption growth has been quite volatile mainly due to fluctuations in domestic demand. Generally, demand for durables and non-durables has been fluctuating due to changes in the market forces such as prices, product promotion polices, supply etc. The rate of inflation in Fiji was high at 10 percent during 1975-90 due to the high worldwide inflation rates caused by the two oil shocks in the mid and late 1970's. The inflation rate declined subsequently to an average of 3.6 percent. During 1975-90, the rate of growth of real private consumption was 3.5 percent. In contrast, real private consumption grew at 5.5 percent over the period 1991-2005. This clearly indicates that consumption expenditure had been rising overtime in Fiji. Between these two periods, the rate of growth of disposable income declined by almost one percentage point, from 2.43 to 1.46, and the availability of consumer credit increased by around two percentage points, from 2.06 to 4.09.

The high growth rate of consumption spending led to high imports in the country. This is of concern to Fiji because exports are declining and imports are rising and thus, the foreign exchange reserves are deteriorating. In the past two years the Reserve Bank of Fiji (RBF) has been raising the interest rates (bank rates) to curtail the consumption expenditure by households. From a policy perspective it is interesting to examine whether

this policy action by the RBF has been successful in reducing the consumption expenditure in Fiji.

3. Empirical Studies on Fiji

There has been extensive theoretical and empirical literature on consumption in the industrial countries. Some influential works that evaluated consumption functions in the industrial countries are Flaven (1981), Cambell and Mankiw (1990), Davidson et.al (1978) and Molana (1991). Davidson et.al (1978) and Molana (1991) used error correction framework and inferred that there is a longrun relationship of consumption in the United Kingdom (UK). Along similar findings, Flaven (1981) argues that consumption is largely determined by income which she claims is excess sensitivity of consumption. Cambell and Mankiw (1990) investigates PIH and finds little support for the conjecture in the UK. Lately, Cambell and Mankiw framework had been widely used to evaluate consumption functions in industrial and developing countries.

Empirical studies on consumption for developing countries had increased lately. However, there are few empirical works on Fiji. Singh (2004) estimated real private consumption for Fiji from 1979-2001 using Engle- Granger time series approach. He found an implausibly low income elasticity of 0.43. For a developing country like Fiji, the income elasticity is expected to be close to unity. Though he found wealth as a significant determinant of consumption in his model, it is unlikely that wealth will have significant effects on consumption in a developing country. This is because most consumers do not have sufficient wealth to finance their consumption expenditure. The fact is that there is low and volatile per capita incomes in Fiji and mainly consumers face difficulties to accumulate substantial income and wealth.

Murphy (1992) estimated a consumption function for Fiji from 1974-1986. His estimated consumption equation is as follows:[2]

[2] The R bar squared is not reported by the author.

$$\ln C_t = -0.063 + 1.000 \ln YD_t - 0.021\ R_t - 0.012\ TREND \qquad (1)$$
$$(0.65) \qquad (c) \qquad (0.616) \qquad (2.68)$$

$$\bar{R}^2 = ---, \quad SER = 0.054$$

where C_t is real private consumption expenditure, YD_t is the real disposable private income (computed as $YD_t = [(1- t_i)Y / (1+ t_c)]$ where t_i is the income tax rate and t_c is consumption tax rate) and R_t is the credit availability proxy calculated as spread of nominal short- term and long- term interest rates. It is worth noting that the constraint unit income elasticity has expected sign and is plausible.

To verify results attained by Murphy (1992), Rao and Singh (2004) estimated Keynesian consumption function for Fiji from 1975- 2002 using GETS and JML approaches. In JML, their cointegrating vector normalized on $\ln C_t$ is:[3]

$$\ln C_t = 0.909 \ln YD_t + 0.034\ R_t - 0.008\ TREND \qquad (2)$$

The implied income elasticity is around 0.9 and the elasticity with respect to availability of consumer credit is about 0.30. These crucial estimates are significant with expected signs. The results of their short run dynamic model imply that expected inflation have significant adverse effects on consumption.

Further, Rao (2005) tested the significance of PIH and AIH for Fiji from 1974- 2002. His estimated model with *p* values in parentheses below the coefficients is:

[3] where C_t is real private consumption expenditure, YD_t is the real disposable private income and R_t is the consumer credit availability proxy. Absolute *t*- ratios are below the coefficients. * and ** indicates significance at 5% and 10%, respectively.

$$\Delta \ln C_t = -0.068 + 0.753\ \Delta \ln YD_t + 0.018 R_t - 0.053\ VAT \qquad (3)$$
$$(0.05)^* \quad (0.05)^* \quad (0.04)^* \quad (0.00)^*$$

where C_t is real per capita private consumption, YD_t is real per capita private income after income tax computed as $YD_t = [(1-T_x)Y]$ where T_x is the income tax rate and Y is the real per capita private sector gross income, R_t is credit availability proxy and VAT is consumption tax dummy variable[4]. Rao found that VAT seems to have significant but temporary negative effects on consumption. He claims that inter- temporal substitution is limited in Fiji. This is because consumers have low and volatile per capita incomes. His estimates show that current income is the main determinant (about 75%) of consumption in Fiji. He also argues that availability of consumer credit is an important determinant of consumption and therefore an effective tool for monetary policy in Fiji.

4. Specification and Methodology

4.1. Specification

In what follows, we detail our specification for real private consumption:

$$\ln C_t = \beta_0 + \beta_1 \ln YD_t + \beta_2 R_t + \epsilon_t \qquad (4)$$

where C_t is real private sector consumption including durables, YD_t is real private sector income net of income tax computed as $YD_t = Y_t\,(1-T_x) + RGNT_t$, where T_x is the average direct tax rate and $RGNT_t$ is the sum of grants and current transfers received by the private sector deflated by GDP deflator, R_t is availability of consumer credit proxy computed as the spread between nominal short- term and long- term interest rates and ϵ_t is an error term. The availability of consumer credit proxy is well known and can be derived from the *ISLM* model. When money supply increases, *LM* shifts down, causing a decline in the nominal (short- term) rate of interest. However, since more money means higher inflationary expectations, the nominal (long- term) rate of interest increases.

[4] The VAT dummy was used as 1 in 1992, 1993 and zero in all other years.

Consequently, the spread between the short and long- term interest rates increases and thus it is a reasonable proxy for the liquidity in the economy. Our *prior* expectations are that income elasticity is around unity and the elasticity with respect to availability of consumer credit is expected to be significant and positive.

An important issue regarding private consumption specification is whether to include rate of interest as an explanatory variable. As Rao (2005) suggests that if consumers are weak risk aversion that is if the elasticity of inter- temporal substitution is high, financial variables will have significant effects on consumption and saving decisions. This would be the case in developed countries. However, in developing countries the elasticity of inter- temporal substitution is likely to be low and most of the consumers have low and volatile per capita incomes. As a result, consumption is less likely to respond to changes in interest rate. Microfit 4.1 of Pesaran and Pesaran (1997) was used for estimation. We used annual data from 1975- 2005. The definitions of variables and sources of data are in the Appendix.

4.2. Methodology

The London School of Economics (LSE)- Hendry's GETS approach was developed before the present developments in time series methods. It does not conflict with the Cowles Commission approach, essentially based on Partial Adjustment Methods (PAM), since GETS is only an alternative and more attractive method for dynamic specification. GETS originated because the econometricians at LSE were concerned with the methodological conflict between the static nature of equilibrium relationships and the data that is used to estimate them. It is argued that the data is collected from the world which is seldom in equilibrium. In addition, the economic theory provides no guidance on how the dynamic adjustments take place. Thus, it is hard to determine an equilibrium relationship with dis-equilibrium data. In the past, this gap was reconciled by the arbitrary lag specifications like PAM and Almond lags. As Rao (2007) notes, it is only appropriate to determine the dynamic adjustment structure by using the data itself so that these are consistent with the Data Generating Process (DGP).

GETS is popular because it can be easily conducted with ordinary least squares (OLS) or non linear least squares (NLLS). GETS is a single equation approach and assumes that there is only one cointegrating vector. The three main steps in GETS approach are as follows:

1. Specification of the underlying error- correction model (ECM).
2. Specification of a general (ARDL) dynamic scheme.
3. Search for a parsimonious equation.

The longrun specification of the real private consumption is:[5]

$$\ln C_t = \beta_0 + \beta_1 \ln YD_t + \beta_2 R_t + \epsilon_t \qquad (5)$$

The above equation can be written as

$$\Delta \ln C_t = \beta_0 + \beta_1 \ln C_{t-1} + \beta_2 \ln YD_{t-1} + \beta_3 R_{t-1} + \beta_4 \Delta \ln C_{t-1} + \epsilon_t \qquad (6)$$

The general dynamic specification will have more lagged values of $\Delta \ln C$, $\Delta \ln YD$ and ΔR. The general dynamic equation can be specified as:

$$\Delta \ln C_t = \beta_0 + \beta_1 \ln C_{t-1} + \beta_2 \ln YD_{t-1} + \beta_3 R_{t-1} + \sum_{i=0}^{n} \lambda_i \Delta \ln YD_{t-i} + \sum_{i=0}^{m} \gamma_i \Delta R_{t-1} + \sum_{i=1}^{j} \tau_i \Delta \ln C_{t-1} + \epsilon_t \qquad (7)$$

β_0, β_1, β_2 and β_3 are the equilibrium long run coefficients. We know that the level variables $\ln C$, $\ln YD$ and R contains unit roots and their first differences $\Delta \ln C$, $\Delta \ln YD$ and ΔR are stationary. Therefore, the error term will be stationary and implies no violation of the classical assumptions.

[5] See Equation (4) for definition of the variables.

The JML cointegration technique is a variant of the vector auto-regression (VAR) approach. However, unlike VAR, in JML, all coefficients are identified and close attention is paid to the underlying economic theory. It is also the most widely used approach in applied time series studies and the routines are found in most econometric software. In JML, pre-testing of variables for unit root is important and all variables are assumed to be endogenous before exogeneity is confirmed with formal tests. The test for the existence of the cointegrating vector(s) are conducted with a procedure that allows for (un) restricted intercept and restricted / no trend options for the VAR. In the JML, the null of no cointegration can be rejected / not rejected with the computed eigenvalue and trace test statistics which are detailed in standard econometric texts or software manuals.

Further, the exogeneity tests for block Granger Non- Causality with the null that the coefficients of the lagged values of dependent variables are insignificant in the equations of independent variables are conducted. The computed LAR test indicates if there is endogeneity bias, ie, whether the dependent variable Granger causes the independent variable(s).[6] Identification is tested by regressing the first difference of each variable on the one period lagged residuals normalized on respective variables. It is confirmed if respective ECMs are significant with correct negative signs in their own equations.

5. Empirical Results

5.1. The GETS Approach

To determine the nature of the relationship described by equation (4), the three variables in the consumption equation- that is, real private consumption, real disposable income and availability of consumer credit- must be tested for the presence of a unit root. The unit-root hypothesis is tested using the Augmented-Dickey-Fuller (ADF) test. The ADF test is applied for both levels and their first differences with an intercept and trend. The time trend is included because it is significant in the levels and first differences of the variables. The results indicate that they are non-stationary in levels but are stationary in

[6] As explained by Rao (2007), the Granger causality test is not a cause and effect test but a test of precedence and in itself does not indicate causality used in the more common sense.

their first differences, see Table-1A in the Appendix for details. There is no point in applying more sophisticated unit root tests because, compared to the ADF test, alternative unit root tests like the generalized least squares ADF test and the Elliot, Rothenburg and Stock test have more power against the unit root null. Now, we detail our results obtained with the GETS approach where consumption equation was estimated with a lag structure of 4 periods. These were later reduced to manageable parsimonious version as reported in Table 2. The *VAT* dummy variable is negative and highly significant implying that in the early stages of its introduction *VAT* did decrease consumption expenditure mildly but did not have a lasting effect. Similarly, the growth in expected inflation ($\Delta^2 \ln P$) seems to have significant temporary negative effects on consumption.

It is noteworthy that the coefficient of the availability of consumer credit proxy is positive and highly significant, implying that an increase in the liquidity in the economy stimulates consumption expenditure mildly. The implied income elasticity of consumption is unity. When we tested for the constraint that the income elasticity is unity with the Wald test, this constraint is accepted at 5% level as the computed X^2 test statistic and *p*-value in parenthesis 0.526 (0.468) is insignificant. In equation GETS(1), the coefficients of $\Delta \ln C_{t-2}$, $\Delta^2 \ln P_t$ and $\Delta^2 \ln P_{t-1}$ are close and when tested for constraint, the null was easily accepted as the Wald computed X^2 statistic (with *p*-value in parenthesis) of 2.367 (0.12) is insignificant. Thus, GETS(2) in Table 2 is our preferred equation with these constraints.

The $\bar{R}^2$ in our preferred equation indicates fairly good fit[7]. The X^2 summary statistics indicate that there is no serial correlation, functional form misspecification, non-normality and heteroscedasticity in the residuals. Our preferred equation GETS (2) in Table 2 is tested for temporal stability and neither the CUSUM nor CUSUM SQUARES test showed any instability. The CUSUM SQUARES stability test is given by Figure 1 in the Appendix.

[7] A regression between the actual and fitted values of the change in logarithm of consumption gives an intercept of zero and a slope of one.

5.2. The JML Approach

We now compare our results with the systems based JML approach. The optimum lag length of the VAR was tested with a 4th order model. The Akaike Information Criteria (AIC) and Schwartz Bayesian Criteria (SBC) criteria were used to select the lag length of the VAR. We do argue that SBC and AIC often gives different lag lengths, however in this case both indicated lag length of 4 periods. Using the unrestricted intercept and unrestricted trend option, the Eigenvalues rejected no cointegration at 90% while Trace rejected at 95%. Both did not reject the null of one long-run relationship. Details of the Trace and Eigenvalues statistics are in Table 2A in the Appendix. The implied cointegrating vector (CV) normalized on $\ln C_t$ is as follows:

$$\ln C_t = 0.804\ \ln YD_t + 0.059\ R_t \qquad (8)$$
$$(2.61)^* \quad (3.20)^*$$

The implied income elasticity of consumption is 0.80. The elasticity with respect to availability of consumer credit at the mean rate of 4.11% is 0.24. These elasticities are highly significant with expected signs. However, as is required, we subjected the above CV (Equation (8)) to further tests. First, we tested for identification by regressing the first difference of each variable on their respective one period lagged residuals obtained by normalizing the CV on the respective variables. When the CV is normalized on real consumption, its residual is denoted as $ECMC_t$. Similarly, $ECMYD_t$ and $ECMR_t$ are the residuals of CV normalized on disposable income and availability of consumer credit, respectively. The results suggest that the implied long-run relation represent consumption since only the $ECMC_{t-1}$ term was significant with correct negative sign in $\Delta \ln C_t$ equation. $ECMYD_{t-1}$ and $ECMR_{t-1}$ were insignificant in their respective regressions. The computed coefficients for each of these lagged ECM's and their *t*-ratios in parentheses are reported in Table-3A in the Appendix.

Further, following Enders (2004) another set of ECM equations were estimated to test for the endogeneity. It is found that $ECMC_{t-1}$ was only significant with the correct negative

sign in the equation where the dependent variable was $\Delta \ln C_t$. In other words, the one period lagged error correction term of income and availability of consumer credit are insignificant in their respective models. Therefore, we can treat $\ln YD_t$ and R_t as being weakly exogenous variables in consumption equation. Further, close estimates between the GETS and JML is an indication that there is no endogeneity problem.

Since the identification and weak exogeneity tests were satisfactory, we proceed further to estimate shortrun dynamic consumption equation. Adopting the lag search procedure used in the GETS equation in the second stage, we arrived at the parsimonious JML equations reported in Table 2. The X^2 summary statistics of JML equations in Table 2 are reasonable. The coefficients of the lagged error term ($ECMC_{t-1}$) has correct sign and are significant at the conventional level. This implies the presence of negative feedback mechanism and in particular, if there are departures from equilibrium in the previous period, the departure is reduced by about 10 percent in the current period. The growth in expected inflation ($\Delta^2 \ln P$) and VAT seems to have significant temporary negative effects on consumption. Further, we tested if the coefficients of $\Delta \ln C_{t-2}$, $\Delta^2 \ln P_t$ and $\Delta^2 \ln P_{t-1}$ in JML(1) are close. The null was easily accepted as the Wald computed $X^2(1)$ statistic (with p-value in parenthesis) of 2.470 (0.12) was insignificant. Therefore, JML(2) are our preferred estimates with these restrictions. When we tested our preferred JML(2) equation for stability, neither the CUSUM nor CUSUM SQUARES test showed any instability. Figure 2 is the CUSUM SQUARES test in the Appendix.

Table 2: Consumption Results obtained with GETS and JML[8]

	GETS(1)	**GETS(2)**	**JML(1)**	**JML(2)**
Intercept	0.036 (8.41)*	0.033 (8.18)*	-0.294 (4.13)*	-0.338 (5.01)*
λ	-0.335 (5.03)*	-0.349 (5.14)*		
$\ln YD_{t-1}$	0.894 (13.98)*	1.000 (c)		
R_{t-1}	0.052 (4.59)*	0.050 (4.61)*		
$\Delta \ln C_{t-2}$	0.521 (7.73)*	0.593 (11.01)*	0.711 (13.56)*	0.782 (24.48)*
ΔR_t	0.013 (5.30)*	0.014 (5.37)*	0.011 (4.04)*	0.012 (4.62)*
$\Delta^2 \ln P_t$	-0.598 (11.38)*	-0.593 (c)	-0.795 (24.28)*	-0.782 (c)
$\Delta^2 \ln P_{t-1}$	-0.570 (9.43)*	-0.593 (c)	-0.768 (18.07)*	-0.782 (c)
VAT	-0.042 (2.17)*	-0.047 (2.39)*	-0.040 (1.79)**	-0.050 (2.25)*
$ECMC_{t-1}$			-0.102 (3.82)*	-0.119 (4.67)*
$\bar{R}^2$	0.963	0.972	0.950	0.957
SEE	0.033	0.033	0.044	0.042
X^2_{sc}	(0.788)	(0.655)	(0.818)	(0.444)
X^2_{ff}	(0.136)	(0.183)	(0.130)	(0.110)
X^2_{n}	(0.220)	(0.679)	(0.545)	(0.573)
X^2_{hs}	(0.578)	(0.507)	(0.424)	(0.433)

[8] Absolute *t*- ratios for coefficients and *p*- values for X^2 tests are in parentheses. * and ** indicate significance at 5% and 10% levels, respectively. λ is the speed of adjustment in the model.

6. Conclusion

In this paper, we examined the previous works on consumption in Fiji. Studies by Rao and Singh (2004) and Rao (2005) are meaningful and can be used for policy in Fiji. However, we have applied time series methods of GETS and JML to estimate consumption function for Fiji. Our results imply that a cointegrating relationship between real private consumption, real disposable income and availability of consumer credit exists in Fiji.

The major finding is that the income elasticity is unity and the elasticity with respect to availability of consumer credit at its mean rate of 4.11% is around 0.20. These crucial elasticities are significant with expected signs. The availability of consumer credit can stimulate consumption expenditure even in a small developing country like Fiji with a significant urban population. The growth in expected inflation and consumption tax like Value Added Tax (*VAT*) seem to have significant but a temporary negative effect on consumption expenditure. Nevertheless, our stability tests show that the consumption function is stable in Fiji. Therefore, our analysis adds support to similar findings about private consumption by Rao and Singh (2004).

The growth in consumption expenditure has been rising overtime and in contrast the growth in disposable income is falling. During the 1975-90, the rate of growth of consumption was 3.5 percent and it further grew to 5.5 percent over the period 1991-2005. However, the rate of growth of disposable income declined by almost one percentage point (from 2.43 to 1.46) between these two periods (1975-90 and 1991-05). So far the RBF has been using the rate of interest as a monetary policy instrument to reduce the consumption expenditure. However, there has been no significant change in consumption spending by households. This is because in a developing country like Fiji, the elasticity of inter- temporal substitution is probably low and consumers have low and volatile per capita incomes. Therefore, interest rates will have insignificant effects on consumption in Fiji. We recommend that it would be worthwhile for the RBF to use the availability of consumer credit to target consumption expenditure.

Data Appendix

C_t = Nominal private consumption expenditure including durable and non- durables deflated by GDP deflator. Source: International Financial Statistics (IFS-2005) and Asian Development Bank (ADB) database (2005).

P_t = Real GDP deflator (IFS-2005) and ADB database(2005).

YD_t = Real private sector disposable income. YD_t is computed as: $Y_t * (1-T_x) + RGNT_t$, where Y_t is the real GDP at factor cost, T_x is the average direct rate and $RGNT_t$ is the sum of grants and current transfers received by the private sector deflated by GDP deflator. Current Economic Statistics (various years) for Fiji, (IFS-2005) and ADB database (2005).

R_t = Consumer credit availability proxy computed as the spread between the nominal short- term RBF 91- day bond or treasury bill rate, and the long term interest rates- 5 year government bond yields. RBF Quarterly Review (various years) and (IFS-2005).

VAT = Temporary VAT dummy for the introduction of Value Added Tax in Fiji. Data constructed as 1 from 1992- 1994 and zero in other periods.

Table 1A: ADF Unit Root Tests

Lags	lnC_t	ΔlnC_t	$lnYD_t$	$\Delta lnYD_t$	R_t	ΔR_t
[0,0,4,0,4,4]	2.032	5.399	1.926	5.449	1.311	4.265

Notes:

1. The respective 5% critical values for ADF test is 3.567.
2. Lag lengths for the variables are selected using AIC and SBC criteria. For example, (0,1) indicates that lag 0 and 1 are significant in 1st and 2nd variables, respectively.

Table 2A: JML Cointegration Tests

	Eigenvalues			Trace		
	Test-Stat	95%	90%	Test-Stat	95%	90%
r = 0	22.840	24.350	22.260	40.587	39.330	36.280
r<=1	15.814	18.330	16.280	17.747	23.830	21.230

Notes:

1. r is the number of cointegrating vectors estimated with the JML procedure.
2. r = 0 is rejected at 90% by the eigenvalues.

Table 3A: Identification and Exogeneity Tests

	$\Delta \ln C_t$	$\Delta \ln YD_t$	ΔR_t
$ECMC_{t-1}$	-0.119 (4.67)*	0.014 (0.27)	1.402 (1.26)
$ECMYD_{t-1}$		0.061 (0.94)	
$ECMR_{t-1}$			-0.139 (1.26)

Notes:

1. The absolute t- ratios are reported below the coefficients. Significance at 5% are indicated by *.
2. $ECMC_{t-1}$, $ECMYD_{t-1}$ and $ECMR_{t-1}$ are the lagged residuals of the CV's normalized on consumption, disposable income and the credit availability respectively.

Figure 1: Stability Tests for Consumption in Fiji (GETS)

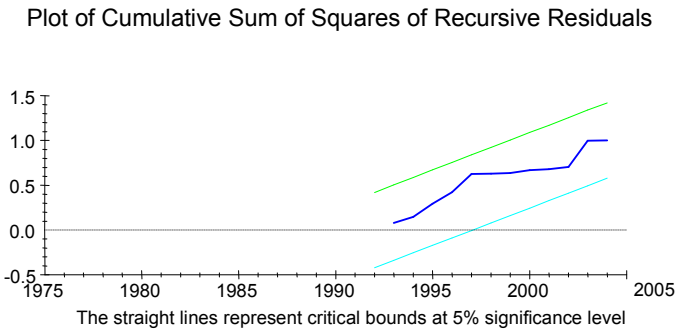
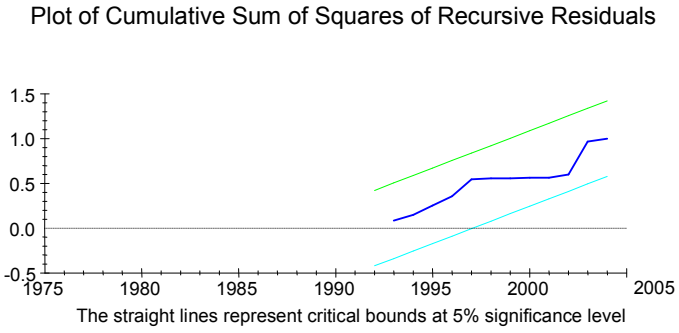


Figure 2: Stability Tests for Consumption in Fiji (JML)



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