# Offshore Financial Centre institutions in small jurisdictions in a globalised world: an empirical study of Vanuatu

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**Abstract:** Capital mobility and absence of direct taxation have made Vanuatu, an attractive Offshore Financial Centre (OFC) in the Pacific, since its independence in 1980. Consequently, Vanuatu has been depending on trade taxes. As Vanuatu would become part of a Pacific free trade area by 2015, policy makers are exploring new sources of tax revenue. An empirical investigation undertaken in this study shows that contribution of OFC institutions to Vanuatu's growth since its independence in 1980 was negligible and insignificant. The paper points out to the direction that Vanuatu has to move and overcome its reluctance to introduce direct taxation.

**Keywords:** OFC; offshore financial centre; financial development; economic development; cointegration; causality.

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# 1 Introduction

In the context of the ongoing world recession following the financial crisis in 2008, world leaders have been focusing on financial sector reforms, including bank supervision and regulation. One of the areas for attention is transparency in cross border transactions by removing secrecy provisions pursued by financial institutions in some countries to protect their bank depositors. Further, advanced countries have also been keeping a watch on OFCs in various countries in the Caribbean and in the South Pacific region, which are also referred to as tax havens due to their low levels of taxation or absence of any taxes. They came under a cloud as they were suspected of gun-running and money laundering activities since the late 1990s.[1] The situation became more serious after the terror attacks of 9/11 on the USA.

The OFCs in the Pacific Island Countries (PICs), namely Cook Islands, Samoa, Vanuatu and Nauru, which were established in 1981, 1988, 1971 and 1972 respectively, have not been doing uniformly well since 2000. While OFCs in the Cook Islands and Vanuatu have held steady since 2000, Samoa's offshore centre has grown rapidly. The offshore industry in Nauru is the only vestigial after the repeal of its offshore banking legislation in 2004. A common characteristic, which marks all the four PICs, is the decline in the importance of OFCs due to their adverse publicity in 1999–2000 as well as increased regulatory requirements imposed in the wake of outside pressure from various multilateral organisations (Sharman, 2008).

It has been estimated that OFCs in PICs make only a modest direct contribution to employment in each country, ranging from 10 employees in Nauru to 60 in Samoa, 70 in the Cook Islands and 115 in Vanuatu (Sharman, 2008). However, it has been claimed that with the exception of OFC in Nauru, OFCs in PICs make a valuable contribution to GDP, besides foreign exchange earnings and government revenue. In terms of ratio of GDP, OFC's contribution in early 2000 represents about 3% of GDP in Samoa, 5% in Vanuatu, and up to 8% in the Cook Islands (Sharman, 2008).

There has been no recent, empirical study done on the contribution of OFC to GDP over time in any of the aforesaid PICs. Recent studies undertaken in this area have been more qualitative than quantitative (Bois-Singh, 2008; Sharman, 2008; Van Fossen, 2002, 2008). This paper seeks to fill the gap by updating an earlier study, which is more than a decade old (Jayaraman, 1998) on Vanuatu, which is a pure tax haven with no direct taxation of any kind. Specifically, the objective of the paper is therefore to evaluate the contribution of OFC institutions in Vanuatu[2] in terms of its impact on output. The rest of the paper is organised as follows: Section 2 provides a brief survey of literature on OFCs and related developments in recent times; Section 3 reviews trends in OFC development in Vanuatu over the last two decades; Section 4 outlines the modelling procedure, empirical methodology adopted and the data sources utilised for the study;

Section 5 reports results; and Section 6 presents a summary and conclusions with policy implications.

## 2 A brief literature survey

An Offshore Finance Centre (OFC) comprises various types of institutions offering a wide range of incentives to holders of funds to move their funds from those jurisdictions with high taxation to those with low or no taxation (Economist Intelligence Unit, 1987). The range of services to offshore investors offered depends upon whether the concerned OFC is notional or functional (McCarthy, 1979). The notional OFC is a 'paper' concept, which simply refers to loan booking activity, such as the one relating to former Eurocurrency centres. In the 1970s, when Hong Kong residents had to face 15% tax, Vanuatu emerged as a satellite centre for Hong Kong as loan booking centre for the latter's residents desiring to avoid the tax (Johns, 1983). A functional OFC on the other hand offers a full range of financial services, including international banking, offshore fund and trust management, legal services, insurance and a host of related services.[3] Vanuatu, which is the focus of study in this paper has since then graduated to a full fledged functional centre.

Van Fossen (2008) defines a tax haven as a jurisdiction which allows residents or foreigners to minimise their tax payments, with at least one significant institution primarily oriented toward accepting deposits and investment funds. Further, government policies in such jurisdictions are specifically oriented toward attracting the business of foreigners by creating legal entities and structures, or facilitating immigration, naturalisation, residence, or the acquisition of passports to allow foreigners to minimise taxes, regulation, loss of assets, unwanted financial disclosure and forced disposition of property. The governments of the small island countries in the Caribbean and in the South Pacific with no substantial physical resources in terms of land and minerals, look upon tourism and OFC activities as engines of growth.

A pure tax haven is the jurisdiction with absence of direct taxation of any kind, including personal and corporate income taxes, capital gains taxes and death duties for both residents, citizens or expatriates and absence of any exchange control on the movement of capital to or from any part of the world. Furthermore, a pure tax haven has no tax treaties signed with any country or jurisdiction.[4]

The theoretical view put forward for justifying the existence of tax havens is that funds flow out from the onshore international friction matrix of taxes and bank regulations that distort operations of free markets to zero-friction jurisdictions with minimal or no banking regulations as well as minimal or no taxes, especially direct taxation (Johns, 1983). This view is confirmed by Walter (1985) and Naylor (1987). The latter also noted that such free flows into tax havens led to abuse of OFCs, resulting in illegal activities. The view that OFCs have a proactive role in seeking deposits from the onshore sources has been questioned in the recent past. Involvement of certain small jurisdictions in gun running and prohibited activities including gambling and drug smuggling in the early 1990s have tarnished the reputation of OFCs in general (Freedman, 2006).[5]

In 2000, Organisation for Economic Cooperation and Development (OECD) identified a number of jurisdictions as tax havens according to criteria it had established. The criteria were:

- nil or only nominal taxes

- protection of personal financial information, which enable businesses and individuals benefit from strict rules and other protections against scrutiny by foreign tax authorities

- lack of transparency in the operation of the legislative, legal or administrative provisions, which make it difficult for other tax authorities to apply their laws effectively.

With a view to promoting greater transparency, OECD began to insist that the tax haven countries should conform to the OECD prescribed standards of transparency and exchange of information. Between 2000 and April 2002, 31 jurisdictions made formal commitments to implement the OECD's standards of transparency and exchange of information. Seven jurisdictions, namely Andorra, Liechtenstein, Liberia, Principality of Monaco, Marshall Islands, Nauru and Vanuatu did not make commitments to transparency and exchange of information by April 2002. Therefore, OECD's Committee on Fiscal Affairs declared them as 'uncooperative tax havens'. That was sufficient for some of these seven jurisdictions to swing into action. Nauru and Vanuatu made their commitments in 2003 and Liberia and the Marshall Islands in 2007. By 2009, Andorra, Liechtenstein and Monaco fell in line. Thus, as all the seven named jurisdictions committed themselves to implement the OECD standards of transparency and effective exchange of information by the timeline set for implementation, no jurisdiction is currently listed as an uncooperative tax haven by the OECD Committee on Fiscal Affairs.

Not to lag behind OECD, the USA took its own course of action. In February 2007, the Stop Tax Haven Abuse Act was introduced and enacted subsequently with some changes. The main focus of the Act was to stop offshore tax haven and tax shelter abuses, which reportedly cost the US Treasury US$ 100 billion per annum. Specifically, the legislation focused on those centres that had secrecy provisions.

With a view to creating more jobs as part of measures to meet the impact of global recession, the USA also reduced incentives for the US companies, which based all or part of their operations in other countries, as the then existing laws made it possible to pay lower taxes if jobs were created overseas rather than in the USA. The American companies were then seen deferring tax payments by keeping profits in foreign countries rather than recording them at home and were reported to have kept the profits in tax havens.[6]

As tax havens in small jurisdictions were coming under closer scrutiny with the threat of sanctions against them,[7] there was a growing concern among the policy makers in small island countries about the usefulness of OFC as an engine of growth. The OFCS were defended by small island countries in the past on the grounds that they contributed to government revenues through registration fees and annual operation fees and other levies, despite minimal or no direct taxation on incomes and profits, besides creating employment for local people.

It is estimated that in the Caribbean, OFCs contributed 55% of central government revenues in the British Virgin Islands, 15% in the Cayman Islands and 7% in Antigua and Barbuda. They employed 15% of the labour force in the British Virgin Islands and 12% in Antigua and Barbuda. It is reported that OFC in Caribbean countries provided a few clerical jobs but it conferred substantial benefits on the political leaders who facilitated it and on the rich expatriates who managed it. In the Pacific Islands, OFCs generated only a small proportion of government revenues: 6% of government revenues in Vanuatu and 4% in the Cook Islands (Robinson, 1988; Van Fossen, 2002).

The studies undertaken thus far did not go beyond estimation of OFCs in terms of employment generation and contribution to government revenues. There is no study available on the impact of OFC on GDP growth over a period of years in any small jurisdiction. The following sections discuss the specific case of Vanuatu with a view to undertaking a more intensive analysis for investigating whether its OFC institutions contributed to economic growth.

## 3 Trends in OFC development in Vanuatu

### 3.1 Background

Vanuatu (population 215,000), an archipelago of about 80 islands which is located roughly 2300 km to the east of Australia, is subsistence oriented, dominated by root crops and commercial ranch and fishery activities to a small extent, which provide livelihood to 80% of the population. Formerly known as the Anglo-French condominium of the New Hebrides, Vanuatu gained independence in 1980. Appendix table presents some selected key indicators. The country's manufacturing base is negligible and confined to processing coconut oil based soaps and detergents, and biscuits and breads.

Vanuatu has been historically an open economy with OFC institutions, inherited from the colonial days (Jayaraman, 1998; Van Fossen, 2002). The country also provides flag-of-convenience registration of ships. Additionally, absence of all forms of direct taxation, including personal and corporate income taxes, estate taxes, death duties and gift taxes, has made Vanuatu a pure tax free haven in the South Pacific.

Being an island country with no mineral resources and limited commercial agriculture, Vanuatu is heavily dependent on imports ranging from food and beverages to fuel and capital goods and transportation machinery and equipment. Vanuatu's exports have been beef, copra, cocoa and *kava*, a non-narcotic beverage root crop. Export earnings have been far less than imports with the result that trade balance always remained negative (Jayaraman and Choong, 2008). However, tourism earnings, steady aid inflows have provided substantial support to the country's current account balance, minimising pressures on the country's fixed exchange rate regime (Jayaraman and Ward, 2006).

A recent assessment by International Monetary Fund (2008) shows that with prudent fiscal policies which contributed to a string of budget surplus during 2004–2007, strong growth in the tourism and construction sectors and increase in aid inflows helped real GDP grew at 6.6% in 2008. The Reserve Bank of Vanuatu (RBV), which relaxed its monetary stance since December 2008 (RBV, 2008), is now facing the impact of the global recession on Australia and New Zealand, the largest sources of tourism revenues and Foreign Direct Investment (FDI) in resort development.

## *3.2   Financial sector*

Vanuatu's (Table 1) financial sector includes RBV, four commercial banks (a government-owned bank, a locally owned bank and two foreign banks namely Westpac and ANZ), a number of trust and insurance companies, VNPF, and several smaller financial institutions. Following a merger, the number of commercial banks dropped to four in 2001. At present, the largest bank has almost 70% of total assets of the banks.

**Table 1**     Vanuatu: financial sector (as of January 2009)

| Financial sector institutions | Assets (Billions of vatu) | Percent in total assets | Number of institutions | Percent of GDP |
|---|---|---|---|---|
| Commercial Banks | 43.1 | 11.2 | 5 | 147.2 |
| Of which: State controlled | 2.7 | 0.7 | 1 | 8.5 |
| Non-bank financial institutions | – | – | – | – |
| Offshore banks | 337.5 | 87.9 | 36 | 1061.3 |
| Insurance companies | 0.5 | 0.1 | 3 | 1.6 |
| Pension funds | 3.1 | 0.8 | 1 | 9.7 |
| *Total* | *384.2* | *100.0* | *45* | *1219.8* |

*Source*:   Reserve Bank of Vanuatu (2009)

Due to the OECD moves to curb money laundering activities and the consequent reform measures to repair its tarnished image of the country, which was declared "an uncooperative tax haven", the number of off-shore banks came to be reduced from 103 in 1990 to 34 at the end of 2001. Following the 9/11 terror attack on the USA and the subsequent passage of the Patriot Act by the USA, off-shore banks and trust companies and insurance companies came under further scrutiny. A number of OFC institutions folded up.[8] As of 2009, Vanuatu's OFC includes 24 offshore banks with offshore banking licenses, and 16 insurance companies. Offshore banks, which are regulated now under the International Act of 2002, are now supervised by the RBV. Offshore banks are not allowed to accept local deposits from, or make loans to, residents in Vanuatu. But regulatory requirements remained largely voluntary. The onus was on the OFC banks to report their clients for suspicious transactions.

There were several attempts to estimate the benefits of OFC in Vanuatu. They widely vary. A 2008 study by the Australian think-tank institution, Centre for Independent Studies (CIS), reports that the estimated legitimate benefits of OFC to Vanuatu, comprising registration fees were a small contribution to the budget. It was estimated to be 2% in 2001. Further, only a small number of ni-Vanuatu is employed in the off-shore sector. Hughes and Sodhi (2006), the two authors of the CIS study refer to the conclusion reached by the IMF Article IV Mission (IMF, 2002) that "on balance, the reputational impact from the OFC sector appears to be negative" (Klan, 2008).[9]

## 4    Modelling and methodology

The empirical study, whose objective is to investigate whether OFC in Vanuatu has contributed to GDP, covers a period of 25 years (1984–2008).[10] Only aggregated data on expenditures by OFC are available, most of which happen to be estimates.[11] Thus, the modelling methodology is constrained by severe data deficiencies. For a consistent set of a 25-year-time series, we rely on the data gathered and reported periodically in the *Quarterly Economic Review* by RBV.

Contribution of OFC institutions is claimed to be in terms of employment, as well as domestic expenditure comprising wages and salaries, housekeeping expenditures such as water, electricity and other non-tradable goods and services, besides imports of computers and related equipments including copying machines and air conditioners. Accordingly, we consider that the total expenditure as percentage of GDP appears to be an appropriate explanatory variable for estimation purposes (Table 2).

**Table 2**      Vanuatu: OFC data and financial sector development indicators

| Year | RGDP growth rate (%) | Total Expenditure of OFC (% of GDP) | Revenue from OFC as % total revenue | XGS (% of GDP) | Revenue from OFC (as % of GDP) | Bank credit to private sector (% of GDP) | M2/ GDP (in percent) |
|------|------|------|------|------|------|------|------|
| 1983 | 9.6  | 8.5  | 2.7  | 100.0 | 1.1 | 31.9 | 77.2  |
| 1984 | 1.0  | 8.9  | 1.9  | 89.2  | 0.8 | 26.0 | 74.1  |
| 1985 | −0.1 | 9.1  | 2.2  | 92.3  | 0.9 | 25.1 | 90.8  |
| 1986 | −2.9 | 8.8  | 3.2  | 95.1  | 1.3 | 27.4 | 112.5 |
| 1987 | −1.7 | 9.5  | 3.7  | 81.7  | 1.1 | 28.7 | 107.3 |
| 1988 | 1.6  | 10.3 | 2.4  | 74.4  | 1.1 | 28.7 | 98.7  |
| 1989 | 11.6 | 12.9 | 3.6  | 69.9  | 1.1 | 29.1 | 115.8 |
| 1990 | 3.2  | 11.1 | 7.4  | 70.6  | 2.2 | 32.6 | 128.3 |
| 1991 | 2.6  | 10.8 | 13.6 | 64.0  | 3.0 | 29.9 | 115.7 |
| 1992 | 0.7  | 14.0 | 13.4 | 62.3  | 3.0 | 35.9 | 107.0 |
| 1993 | 9.1  | 10.8 | 5.5  | 61.0  | 1.2 | 35.1 | 104.3 |
| 1994 | 1.0  | 9.3  | 3.9  | 59.6  | 0.9 | 33.8 | 97.2  |
| 1995 | 2.3  | 7.6  | 5.1  | 58.6  | 1.2 | 35.0 | 102.3 |
| 1996 | 4.9  | 7.7  | 4.5  | 57.4  | 1.0 | 36.2 | 109.3 |
| 1997 | 4.3  | 6.8  | 3.3  | 55.7  | 0.8 | 32.7 | 105.6 |
| 1998 | −3.2 | 6.6  | 4.0  | 53.1  | 0.9 | 33.1 | 102.5 |
| 1999 | 2.7  | 7.2  | 3.2  | 51.4  | 0.7 | 38.0 | 103.7 |
| 2000 | −2.5 | 8.6  | 6.4  | 50.8  | 1.3 | 34.8 | 97.6  |
| 2001 | −7.4 | 7.9  | 5.9  | 48.9  | 1.2 | 36.5 | 101.6 |
| 2002 | 3.2  | 10.0 | 6.6  | 48.3  | 1.4 | 42.0 | 110.4 |
| 2003 | 5.5  | 10.1 | 6.1  | 46.6  | 1.3 | 43.1 | 102.0 |
| 2004 | 6.5  | 7.4  | 2.2  | 45.6  | 0.5 | 43.7 | 98.8  |
| 2005 | 7.4  | 7.9  | 1.9  | 44.3  | 0.4 | 46.2 | 99.9  |
| 2006 | 6.8  | 7.9  | 2.5  | 41.9  | 0.5 | 44.5 | 95.9  |
| 2007 | 3.8  | 12.2 | 7.1  | 39.5  | 1.6 | 44.2 | 94.6  |

*Source*:    Reserve Bank of Vanuatu, Quarterly Economic Review
(several past issues)

Since OFC is part of the financial sector, whose development over the period is a key factor to growth, we use private sector credit expressed as percentage of GDP, representing financial sector development, as an important variable in the estimation procedure (Beck et al., 2000; King and Levine, 1993)[12].

Although OFC institutions are not allowed to deal with the citizens directly in terms of acceptance of deposits from and provision of credit to them, it is possible that they would have had a favourable impact on human resource development in terms of training and eventual transfer of skills by movement of personnel between from OFC institutions to domestic financial sector institutions. Therefore, we try to check whether there was any significant synergy effect through interaction between OFC and domestic financial sector development. Accordingly, we include the interaction term as a variable in the model.

The growth of Vanuatu's economy is critically determined by its export earning capacity. Aside from paying for the growing import needs ranging from food and fuel to intermediate and capital goods, exports and tourism services create additional jobs and incomes. Therefore, export of goods and services is included as a variable in the estimation procedure. Besides these explanatory variables, we include a dummy variable for capturing the influence of political and social unrest during 1997–1999, when Vanuatu underwent a phase of decline in growth. A dummy variable is accordingly added, assuming the value of unity for years, which witnessed civil unrest and zero for other years, besides a time trend.[13]

The hypotheses, which are sought to be tested, are:

- OFC positively influences output

- PCR directly affects output

- interaction between OFC and PCR has a positive relationship with GDP

- exports of goods and services are directly related to GDP

- the dummy variable for unrest is negatively associated with output.

All variables except dummy variable and time trend are transformed into logs first and then entered into econometric analysis.

Accordingly, the model is written as follows:

$$LRGDP = F(LOFC, \ LPCR, \ LXGS, \ LOFCLPCR, \ DUM, \ TREND) \qquad (1)$$

where

LRGDP:  Log of gross domestic product in constant prices

LOFC:   Log of OFC's expenditure as percent of GDP

LPCR:   Log of banking sector's credit to private sector as percent of GDP

LXGS:   Log of exports of goods and services as percent of GDP

DUM:    Dummy variable assuming the value of 1 for years political instability and zero for normal years

TREND:  Time or trend variable.

Since the number of observations is small, we resort to the Autoregressive Distributed Lag (ARDL) procedure, developed by Pesaran et al. (2001) for estimating a long-run

relationship between the variables. The ARDL bounds testing model is a general dynamic specification, which applies lags of the dependent variable and the lagged and contemporaneous values of the explanatory variables, through which the short-run impacts can be directly estimated, and the long-run relationship can be indirectly estimated (Chang et al., 2001; Narayan and Smyth, 2006).[14]

The bound testing procedure within the ARDL framework has several advantages:

- it allows testing for the existence of a cointegrating relationship between variables in levels irrespective of whether the underlying regressors are $I(0)$ or $I(1)$ (Pesaran and Shin, 1999; Pesaran et al., 2001)

- it is considered more appropriate than the Johansen-Juselius multivariate approach for testing the long run relationship amongst variables when the data are of a small sample size (Mah, 1995; Pattichis, 1999; Tang, 2001; Tang and Nair, 2002)[15]

- Pesaran and Shin (1999) have shown that estimators of the short-run parameters are consistent and the estimators of long-run parameters are super-consistent in small sample sizes.

An ARDL model of equation (1) is constructed as follows:

$$\Delta LRGDP_t = \beta_0 + \beta_1 LRGDP_{t-1} + \beta_2 LOFC_{t-1} + \beta_3 LPCR_{t-1} + \beta_4 LXGS_{t-1}$$

$$+ \beta_5 LOFCLPCR_{t-1} + \beta_6 TREND_t + \beta_7 DUM_t + \sum_{i=1}^{p} \alpha_{1i} \Delta LRGDP_{t-i}$$

$$+ \sum_{i=0}^{p} \alpha_{2i} \Delta LOFC_{t-i} + \sum_{i=0}^{p} \alpha_{3i} \Delta LPCR_{t-i} + \sum_{i=0}^{p} \alpha_{4i} \Delta LXGS_{t-i}$$

$$+ \sum_{i=0}^{p} \alpha_{5i} \Delta LOFCLPCR_{t-i} + \varepsilon_t . \tag{2}$$

There are two steps in investigating the relationship between real output, offshore financial centre, private credit, exports and the interaction term. First, we regress equation (2) by Ordinary Least Squares (OLS) techniques. Second, we impose a restriction on all estimated coefficients of lagged level variables equal to zero to examine the presence of a long-run relationship between the variables. This can be performed by using $F$-statistics (or Wald statistics) with the null hypothesis of no cointegration ($H_0$: $\beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = 0$) against its alternative hypothesis of a long-run cointegration relationship ($H_1$: $\beta_1 \neq \beta_2 \neq \beta_3 \neq \beta_4 \neq \beta_5 \neq 0$).

If the calculated $F$-statistic is higher than the upper critical bounds value, then the null hypothesis is rejected. In contrast, if the calculated $F$-statistic is less than lower critical bounds value, it suggests that there is no long-run relationship between variables. If the calculated $F$-statistic falls between lower and upper bounds values, then the result becomes inconclusive.

## 4.1 Granger causality test

After investigating the long-run relationship between the variables, we proceed to the Granger causality tests in the Parsimonious Vector Error Correction Model (PVECM) framework to find a short-run causal relationship between real output, offshore financial centre expenditures, private credit, exports and the interaction term.

In PVECM framework, we estimate the change in both endogenous and exogenous variables on lagged deviations and it can be expressed as follows (Engle and Granger, 1987; Irandoust and Ericsson, 2004):[16]

$$\Delta Z_t = \Pi Z_{t-1} + \Gamma_1 \Delta Z_{t-1} + \Gamma_2 \Delta Z_{t-2} + \cdots + \Gamma_{p-1} \Delta Z_{t-p+1} + u_t \tag{3}$$

where $\Delta Z_t = [\Delta\text{LRGDP}, \Delta\text{LOFC}, \Delta\text{LPCR}, \Delta\text{LXGS}, \Delta\text{LOFCLPCR}]'$, $\Pi = -\left(1_m - \sum_{i=1}^{p} A_i\right)$ and $\Gamma_i = -\left(1 - \sum_{j=1}^{i} A_j\right)$. For $i = 1, \ldots, p-1$.

$\Gamma$ represents the short run impact of the changes in $Z_t$.

Meanwhile, the $(5 \times 5)$ matrix of $\Pi = (\alpha\beta)'$ incorporates the speed of adjustment to long-run equilibrium ($\alpha$) and the long-run information ($\beta$) such that the term $\beta' Z_{t-p}$ measures the $(n-1)$ cointegrating vector on the model.

The short-run causal relationship between variables can be examined by computing the Wald test (*F*-statistics) with the null hypothesis that the set of coefficients ($\Gamma_i$) on the lagged values of exogenous variables are insignificantly different from zero. If the null hypothesis is rejected, then it is found that the explanatory variables Granger cause the dependent variables. If $\Pi$ is found insignificant based on the *t*-statistics, then both the exogenous and endogenous variables do not have a steady-state long-run relationship.

## 5   Results and interpretation

### 5.1   Unit root tests

Before resorting to bounds testing which does not, however, require the same order of the integration of each variable, we examine the time series properties of the variables by using unit root tests.[17] The results of unit root tests, which include the Augmented Dickey and Fuller (ADF) (Dickey and Fuller, 1979) and Ng and Perron (2001), indicate that all series are integrated of order one (Table 3).

**Table 3**     Results of unit root tests

| Variable | ADF | | Ng and Perron | |
|---|---|---|---|---|
| | *Level* | *First difference* | *Level* | *First difference* |
| LRGDP | −2.2789 | −3.2732* | −16.8131 | −10.3533* |
| LOFC | −1.8591 | −5.1186* | −6.7774 | −11.3620* |
| LPCR | −3.2735 | −5.7452* | −11.5557 | −55.0293* |
| LXGS | −2.9266 | −4.4535* | −7.2304 | −10.7011* |
| LOFCLPCR | −1.5831 | −4.8892* | −6.4041 | −11.4023* |

The ADF critical values are based on McKinnon. The optimal lag is chosen on the basis of Akaike Information Criterion (AIC). The null hypotheses for both ADF and Ng-Perron tests are a series has a unit root (non-stationary) while the null hypothesis of the KPSS test is does not contain unit root (stationary).

*Denotes the rejection of the null hypothesis at the 5% level of significance.

The results of ARDL model are reported in Table 4. With a view to identifying the cointegrating vector for the model, we utilise the computed $F$ statistic for each equation with a different dependent variable. As the calculated $F$-statistic is higher than the upper bound value in the equation with LRGDP as the dependent variable, we reject the null hypothesis of no long-run relationship between real output, OFC, private credit, exports and the interaction term between OFC and private credit. The respective $F$-statistics in the equations with other variables as dependent variables are not found significant even at 10% significance level. Thus, there is only one cointegration equation.

The estimated equation with the LRGDP as dependent variable is:

$$LRGDP = -10.849 - 0.131LOFC + 0.688LPCR*** + 0.306LXGS* - 0.354LOFCLPCR - 0.148DUM*** + 0.06TREND**$$
$$t = (-5.869) \quad (-0.270) \quad (19.692) \quad (3.819) \quad (-2.629) \quad (-29.760) \quad (6.204)$$

*, ** and *** indicate significance at 10%, 5% and 1% levels, respectively. Figures in parentheses are $t$-statistics.

$$(4)$$

Both private credit (LPCR) and exports (LXGS) have the theoretically expected signs. They are also found statistically significant at 10% level or better. It is found that dummy variable for political instability is negative and statistically significant. In other words, unrest leads to lower RGDP. The estimated coefficient of OFC is not significant, which indicates that OFC does not contribute to output expansion in Vanuatu. The result is as expected. The funds received by OFC in Vanuatu do not get into real sector, as they are transferred almost immediately to other centres, such as Hong Kong or Singapore. They do not add to domestic banking system's liquidity. Thus, OFC institutions have no impact on growth in domestic credit and output expansion. Furthermore, as the movement of personnel between OFC and domestic financial sector and the resulting transfer of skills and human resource development appear to be very small and limited, the interaction term is also not significant.

**Table 4** Results of bounds tests

| Dependent variable | | | Computed F-statistic | |
|---|---|---|---|---|
| LRGDP | | | 4.7060** | |
| LOFC | | | 0.5627 | |
| LPCR | | | 0.3778 | |
| LXGS | | | 1.0195 | |
| LOFCLPCR | | | 1.2557 | |
| | *Pesaran et al. (2001)[a]* | | *Narayan (2005)[b]* | |
| *Critical value* | *Lower bound value* | *Upper bound value* | *Lower bound value* | *Upper bound value* |
| 1% | 3.41 | 4.68 | 4.134 | 5.761 |
| 5% | 2.62 | 3.79 | 2.910 | 4.193 |
| 10% | 2.26 | 3.35 | 2.407 | 3.517 |

[a]Critical values are obtained from Pesaran et al. (2001), Table CI(iii) Case III: Unrestricted intercept and no trend, p.300.

[b]Critical values are obtained from Narayan (2005), Table case III: unrestricted intercept and no trend, p.10.

*, ** and *** indicate significance at 10%, 5% and 1% levels, respectively.

The results of a number of diagnostic tests including Jacque-Bera normality test, Breusch-Godfrey Serial Correlation LM test, Heteroskedasticity test (ARCH), Ramsey RESET Mis-specification test suggest that equation (4) performs reasonably well. These tests reveal that the residuals are normally distributed, serially uncorrelated with homoscedasticity of residuals, and confirming the equation has a correct functional form. In addition, the CUSUM and CUSUM of Squares plots indicate that the parameters of the equation are stable over time.[18]

## 5.2   Granger causality test

Since the variables are of $I(1)$ and are also found cointegrated, we proceed to undertake error correction modelling the variables in their first differences with a view to examining the existence of Granger-causality. Table 5 shows the results of Granger causality tests. Among the five equations, Error Correction Term (ECT) is statistically significant with the negative sign only in the equation with LRGDP, as dependent variable. This finding is consistent with the results of bound test. It also confirms that there is only one cointegrating equation, namely the one with LRGDP as dependent variable. Further, the linkage runs only in one direction, which is from OFC expenditures, credit, exports and interaction term to GDP and not otherwise.

**Table 5**      Granger causality test results

| Dependent variable | F–statistics | | | | | ECT (*t-statistics*) |
|---|---|---|---|---|---|---|
| | *ΔLRGDP* | *ΔLOFC* | *ΔLPCR* | *ΔLXGS* | *ΔLOFCPCR* | |
| ΔLRGDP | – | 2.924 | 5.815** | 0.944 | 2.767 | –0.3136* (–1.936) |
| ΔLOFC | 2.787* | – | 1.727 | 1.509 | 0.750 | –0.4492 (–0.803) |
| ΔLPCR | 5.566** | 1.866 | – | 2.173 | 1.209 | –0.2420 (–1.069) |
| ΔLXGS | 3.867* | 3.896* | 0.002 | – | 1.821 | –0.3513 (–0.858) |
| ΔLOFCPCR | 5.053** | 0.032 | 5.303** | 0.685 | – | –0.4028 (–0.225) |

*, ** and *** indicate significance at 10%, 5% and 1% levels, respectively.
Figures in parentheses are *t*-statistics.

Turning to short-run causality relationship, we find that there is a bi-directional causality between real output and private credit. However, there is a unidirectional causality running from real output to Offshore Financial Centre (OFC), but not vice versa. This suggests that a good economic performance attracts more funds flowing to OFC in Vanuatu. In line with the long-run results, it is found that exports of goods and services Granger cause real output in the short-run as well, a finding which supports the exports growth-driven hypothesis. Figure 1 summarises the short-run lead-lag linkages among the variables. In sum, the results confirm that OFC institutions do not have a significant impact on real output both in the short- and long-run, regardless of the efficiency of the domestic financial system.

**Figure 1**   Short-run lead-lag linkages summarised from Granger causality test
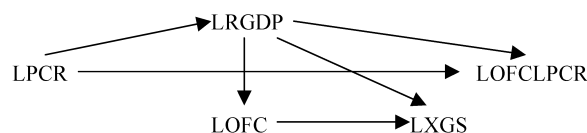


## 6   Conclusions and policy implications

Vanuatu is a pure tax haven in the Pacific region with no direct taxation of any kind on both citizens and resident expatriates alike. Further, its open economy features, including the absence of exchange controls, combined with all the past governments' single-minded devotion over the years to the pure tax haven concept, have made Vanuatu a zero tax friction jurisdiction and hence a popular destination for parking funds by investors from high tax friction countries.

The funds received by OFC institutions from overseas investors are transferred almost instantly to other financial centres for investment in interest earning assets. Thus, funds do not get into the domestic banking system and hence are not available to domestic customers and have never been utilised for domestic investment purposes. The contribution of OFC institutions has been in terms of provision of job opportunities for locals, mainly in clerical in nature, besides payment of registration fees and other levies and taxes on imports and domestic indirect taxes including value added taxes on domestic goods and services. The employment figure has come down in recent years following the introduction of computers. The contribution of OFCs to GDP in terms of expenditures on domestic goods and services for 2007, for which we have data, is 7% and contribution to government revenue is below 2%.

A strong commitment to continue the pure tax haven status has come in the way of introducing direct taxation. During the past three decades, the government did not undertake any serious revenue mobilisation effort in the midst of declining foreign aid. Introduction of direct taxation was clearly rejected under the belief that Vanuatu would lose its popularity amongst offshore investors. For its growing budgetary needs, Vanuatu has to depend only on indirect taxes, which include Value Added Taxes (VAT) on goods and services and import and export taxes. Total revenue, which includes tax revenues and fees and charges in 2008 was 30% of GDP; and trade taxes alone accounted 23% of total revenue and VAT another 28% of total revenue (Kaufmann 2009). Indirect taxes have created an avoidable situation of a high regressive tax system, imposing greater burden on lower income groups, much against the goal of promoting an egalitarian society, let alone reducing poverty.

Vanuatu is expected to become part of a free trade area by 2015 having signed in 2003 the Pacific Island Countries Trade Agreement and Pacific Agreement on Closer Economic Relations (PACER) with Australia and New Zealand and other Pacific island countries. Policy makers in Vanuatu are now aware of the need for finding new sources of tax revenue, as international trade taxes for revenue purposes levied presently on imports from Australia and New Zealand, with whom the country has substantial trade would have to be discontinued.

There are estimates of loss of revenue from trade taxes once the free trade area eventuates by 2015. The estimates vary between 41% of total trade tax revenue

(Scollay et al., 1998) and 73% (Narsey, 2004), under the assumption that Vanuatu would retain the existing tariff rate structures against imports from the third countries, which include Japan, European Union and USA, while abolishing all trade taxes against imports from Australia and New Zealand and other island countries in the region.

Utilising the data covering a 25-year period (1984–2008) and employing the bounds testing approach within an ARDL framework, our empirical study shows that

- OFC in Vanuatu did not contribute to economic growth

- interaction between OFC and domestic financial institutions did not significantly impact growth.

Thus, the conclusion is clear: reliance on OFC for Vanuatu's economic growth is misplaced.

The study results point out the direction towards which the country should now move. The policy recommendations are:

- government should not hesitate to introduce direct taxation

- government should tax profits made by OFC institutions and tax incomes of expatriates employed in OFC

- direct taxation would in no way discourage OFC to continue their operations as there are many large and flourishing jurisdictions, including Hong Kong and Singapore, which tax profits of OFCs and levy income taxes on incomes of expatriates employed in OFCs

- introduction of direct taxation will help reducing reliance on indirect taxation, which includes value added taxes on commodities and services , fees and charges and import duties

- introduction of direct taxation would reduce the regressive burden now borne by the poorer sections of the community.

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## Notes

[1]In February 2007 the Stop Tax Haven Abuse bill was introduced in the US Senate. A companion bill was introduced into the House of Representatives. The House bill was referred to the House Judiciary Subcommittee on Courts, the internet, and Intellectual Property. The main focus of the bill is to stop offshore tax haven and tax shelter abuses which reportedly cost the US Treasury US$100 billion per annum. Specifically, the Act focused on those centres that had secrecy provisions.

[2]The Government of Vanuatu has by its International Bank Act (2002) changed the title of OFC institutions to International Finance Centre institutions. However, we in this paper stick to the original title, OFC institutions, as the characteristics of institutions have not undergone any change.

[3]For an extensive discussion on financial services offered by OFCs in various jurisdictions see Hampton (1996), Van Fossen (2008) and Sharman (2008).

[4]Apparently for these reasons, Vanuatu earned the epithet, 'a happy haven' (The Economist Intelligence Unit, 1987).

[5]Van Fossen (2008) has documented some of these occurrences, which brought OFCs into disrepute. These incidents include:

- In Saint Vincent and the Grenadines, Thierry Nano, the head of two prominent offshore banks who had close ties to the government, was allowed to fly out of the country days after a Miami court had requested his arrest for money laundering. Egypt and Libya had large claims on his family's offshore banks, which he had been able to avoid as a result of the protection offered by Saint Vincent and the Grenadines.

- Senior government officials in Antigua and Barbuda were linked to Colombian drug lords who were laundering large amounts of money through the country's offshore banks.

- Dominica's finance minister was travelling with Julian Giraud, who was a leading offshore banker wanted by FBI; he was eventually arrested on money laundering charges.

- In Cyprus, president of a law firm was involved in creating an offshore company which expedited the flow of at least $80 million, which Slobodan Milosevic removed from the former Yugoslavia. Van Fossen (2008) notes that these and other activities in the Cyprus OFC institutions reinforced the image that the nation "has long been a way station for rogues and scoundrels, where officials have traditionally been willing to look the other way" (Freedman, 2006, p.90).

[6]On 4 May, 2009, President Obama announced: "If financial institutions would not cooperate with us, we will assume that they are sheltering money in tax havens and act accordingly".

[7]At the global level, the G20 leaders agreed to:

- creation of a new Financial Stability Board to replace the current Financial Stability Forum

- extend regulation and oversight to all systemically-important financial institutions, instruments and markets, including the largest hedge funds

- impose new rules over banks' capital requirements once the crisis is over

- 'take action' against tax havens and other non-cooperative jurisdictions, including the threat of sanctions if necessary.

[8]For an analysis from a legalistic point of view, see Bois-Singh (2008).

[9]Following the arrest in 2008 of a Vanuatu-based Australian businessman by name Robert Agius, who was accused of a $100million offshore tax scam involving more than 400 people, the Vanuatu government decided to scrap its secretive company law provisions within months as part of a legal overhaul. The Vanuatu Financial Services Commission (VFSC) assured Australia that it would replace its company law secrecy provisions – which allow for the creation of companies with hidden owners and undisclosed cash deposits. The avowed objective is to restore Vanuatu's image and develop "into some form of financial hub getting away from this financial secrecy business". According to the Australian Taxation Office, about $5 billion flows from Australia to international tax havens each year, with about $350 million of that destined for Vanuatu. The overhaul is expected to involve the abolition of Section 125 of the Vanuatu International Companies Act, whereby companies and banks are not allowed to release information about private client accounts to any third parties without the consent of account holders or a local court order (Klan, 2008).

[10]Time series of national income data on a consistent have been compiled only from 1983 onwards.

[11]This deficiency is recognised by all studies including the latest study by Bois-Singh (2008).

[12]Between the two indicators of financial development (broad money stock, M2 as a ratio of GDP, represented by M2/GDP and ratio of bank credit to private sector represented by PCR), we use the PCR since it is considered as a better measure. Following are the reasons: Although an increase in private financial savings results in higher M2/GDP ratio, if high statutory reserve requirements are imposed by central banks, credit to the private sector might not increase; and hence an increase in M2/GDP does not necessarily mean an increase in productive investments (Beck *et al.*, 2000; Demetriades and Hussein, 1996; King and Levine, 1993).

[13]Trend variable is added under the assumption that influences of those relevant variables, which are omitted due to non-availability of time series of data on a consistent basis, are a smooth function of time. Moreover, we found a clear positive-linear trend in the levels of log of RGDP and LPCR over the sample period, therefore including a trend variable in the estimation process further improved the level of significance of other core variables.

[14]The use of this technique is also based on its advantages over the conventional cointegration procedure. See, for example, Pesaran *et al.* (2001), Chang *et al.* (2001), Narayan and Smyth (2006), among others for the advantages and applications of ARDL.

[15]Some previous studies have used ARDL model to relatively small sample sizes with as few as 20 observations in their research. For example, Pattichis (1999) apply the ARDL model to estimate an import demand function for Cyprus from 1975 to 1994 (20 observations). Tang (2001) applies the ARDL framework to study inflation in Malaysia for the period of 1973–1997 (25 observations) while Tang and Nair (2002) apply the ARDL technique to estimate an import demand functions for Malaysia from 1970 to 1998 (29 observations).

[16]Engle and Granger (1987), Irandoust and Ericsson (2004) provide a comprehensive discussion of this technique.

[17]Granger causality tests through an error correction model in the event of a cointegration require that variables should be of $I(1)$ for entering them in their first differences.

[18]The CUSUM and CUSUM of Squares plots are not reported in order to conserve space. However, the results are available upon request.

## Appendix: Vanuatu: selected key indicators

| | |
|---|---|
| Land area (Sq.km. '000) | 12.2 |
| Population (2006: '000) | 215 |
| Per capita GDP (US$) Current prices: 2006 | 1799 |
| Aid per capita in US$ (2006) | 227 |
| Aid as percentage of GDP (2006) | 13.4 |
| Human development ranking (2006) | 118 |
| Annual average growth rate in percent (2001–2007) | 2.7 |
| Annual average inflation in percent (2001–2007) | 2.5 |
| Overall budget balance as percent of GDP (2001–2007) | –0.5 |
| Current account balance as percent of GDP (2001–2007) | –5.4 |

*Source*:   ADB (2008) and UNESCAP (2008, 2009)