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ASSESSMENT OF BUDGET SUSTAINABILITY IN SARAWAK

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ABSTRACT

This study reexamines the sustainability of budget stance of Sarawak state, 1970-2008. Using the intertemporal borrowing constraint as a framework, the study tests the long-run relationship between government revenue and expenditure. Empirical results demonstrate a long-run equilibrium relationship among the variables. The cointegration test result suggests that Sarawak state's fiscal stance satisfies the weak sustainability condition. In addition, the Granger causality test result reveals a bi-directional relationship between government revenue and expenditure. This means that fiscal authorities made simultaneous decisions on expenditure and revenue. Government revenue and expenditure will mutually reinforce each other.

Key Words: Fiscal sustainability, Cointegration, Revenue, Expenditure, GDP and Sarawak.
JEL classification: E62, H2, H3,H6

INTRODUCTION

In managing the economy, a government uses both fiscal and monetary policies. Fiscal policy is the use of government spending and revenue collection to influence the economy. The two main instruments in fiscal policy are government spending and taxation. Changes in the level and composition of taxation and government spending will affect the aggregate demand and level of economic activity as well as the pattern of resource allocation and the distribution of income. Fiscal policy can also be used to bring the economy to the potential level if policymakers understand the relationship between government expenditure and revenue. Research on budget sustainability has attracted significant interest, because budget sustainability has an important impact on economic growth.

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Abdulnasser (2002). states that budget sustainability refer to the government's ability to maintain given spending, taxation, and borrowing patterns and to modify policies to satisfy its long-run budget constraints. In other words, budget sustainability is the ability of the government to maintain a given policy stance. Thus, government has an important role in budget sustainability.

Castro and Cos (2002). point out that strong budget sustainability means that no problem in deficit behavior is expected, and there is no need for structural fiscal reforms. In contrast, weak sustainability implies that government might have a problem in marketing its debt. Fiscal policy is crucial to sustainable growth. Thus, understanding the relationship between government revenue and expenditure is important in order to evaluate budget sustainability. There is a large public finance literature that analyzes the nexus between government revenue and expenditure. Most of these studies describe the efforts of the fiscal authority to maintain the budget balance. From a fiscal perspective, maintaining a stable long-term relationship between expenditure and revenue is a key requirement for a stable macroeconomic environment and a sustainable economy. Budget deficits happen when government expenditures exceed revenues. Conversely budget surpluses occur when government revenues are more than expenditures. A budget balance exists when government revenues and expenditures are equal; it is difficult to obtain a budget balance.

There are three competing hypotheses on the relationship between government revenue and expenditure: 1) the fiscal synchronization hypothesis, 2) the tax-and-spend hypothesis, and 3) the spend-and-tax hypothesis. Those hypotheses provide useful guidelines for decision-makers on the choice of preventive or corrective measures.

Narayan and Narayan (2006). suggest three reasons why the relationship between government expenditures and revenues is important. The first reason states that if the revenue-spend hypothesis holds, a budget deficit can be avoided by enacting policies that stimulate government revenue. The second reason states that if the bi-directional causality does not hold, government revenue decisions are made independent from government expenditure decision. This can cause high budget deficit; government expenditures will rise faster than government revenues. The third reason is that if the spend-revenue hypothesis holds, the government spends first and pays for the spending later by raising taxes. This will lead to more taxes in the future and encourage the outflow of capital.

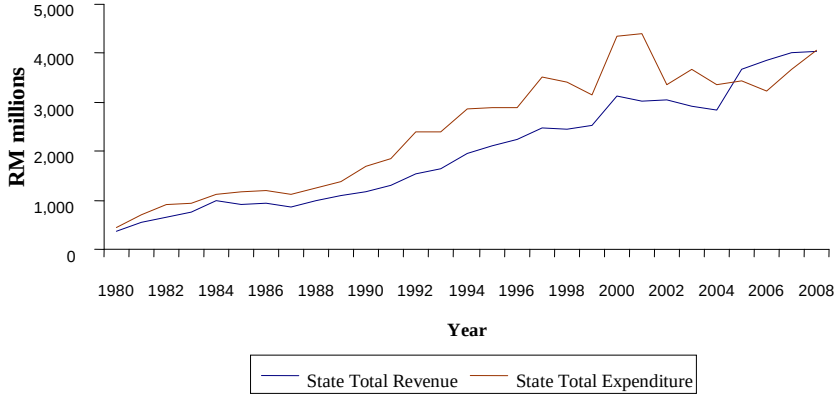
In this paper, we reexamined budget sustainability condition in Sarawak[4] -- the largest state in Malaysia. Sarawak's revenue sources are tax and non-tax revenues, non-revenue receipts and federal grants and reimbursements. Tax revenue is collected based on ordinances and acts. The major sources are forestry royalties, forest premiums and forest tariffs. Rates of royalties and premiums for produce taken under license are regulated by section 52(2) of the Forest Ordinance.

[4] A similar study was conducted by Lau et al., (2009). However, they do not test for the causality interplay between the government expenditure and revenue for Sarawak.

Based on States Sales Tax Ordinance 1998 (effective 1 October 1998), State sales of crude palm oil increased from 2.5% to 5% of total sales and a states sales tax of 5% was imposed on sales of lottery tickets in 2001. It was raised to 10% of total sales in 2004. The major source of non-tax revenue is a 5% royalty on oil and gas received from PETRONAS, based on a 1975 agreement signed with the State Government. Non revenue receipts are obtained mainly from the dividend income from the state's investment in listed and non-listed companies and from interest income on bank balances. Federal grants and reimbursement are received in accordance with the Federal constitution.

Sarawak government expenditure consists of operating and development expenditures. Since 2004, operating expenditure has accounted for about 40% of the total Sarawak government expenditure; the balance is from development expenditure. Operating expenditure is essential for the smooth operation of government machineries that cover personal emolument, supplies and services, procurement of assets, grants and fixed payments. Development expenditures are allocated to the State's ministries, departments and agencies to implement approved development projects.

Figure 1: Sarawak State Budget From 1980-2008



As shown in Figure 1, there has been a steady increase of the expenditure between 1983 and 1985. There was an economic crisis in 1982 and the state government had to increase expenditure for the sake of economic recovery. In 1982, the state government's expenditures increased by about 32% over 1981. Meanwhile, the revenue gain by government increased by about 19%. From 1997 to 1999, there was a slowdown because of the 1997 financial crisis. Malaysia's government has tried to restore market confidence by introducing capital control, raising the interest rate to curtail the sliding Malaysia currency, and controlling fiscal policy. The Sarawak state government also uses fiscal policy by increasing expenditure to stimulate economic growth. Thus, expenditures sharply increased from 1999 to 2001. Government expenditures increased about 40% compared to 1999. At the same time government revenues increased about 19%.

Sarawak state government had a budget deficit since 1980, and budget surpluses from 2005 until 2008. In 2005, the budget surplus rose from RM242,232,172 to RM614,795,635 in 2006, which a 154% increase. However, in 2007 the surplus fell to RM329,393,005. The budget surplus was mainly due to the increased revenue from the 5% royalty on oils and gas received from PETRONAS (non-tax revenue) as a result of increased oil prices. In addition, government also practices prudent financial spending and exercised strict control over operating expenditures to ensure the long-term sustainability of the state's financial position.

A large and persistent government budget deficit can pose a serious threat to the country's economic growth. The fiscal imbalance would imply a need for a larger and more painful adjustment for the economy. The government has to pay off its outstanding debt through large future budget surpluses, which require increases in taxes or cuts in spending. Higher taxes have many distortion effects on the economy. Furthermore, a large increase in the government debt may impose a burden on future generations. The budget imbalance can be avoided if relevant policymakers in Sarawak understand the relationship between government revenues and expenditures. In addition, government must ensure that the adjustment of policy is within the framework of the sustainable budget position.

The rest of this paper is organized as follows: Section 2 presents the literature on budget sustainability; Section 3 explains the condition of sustainability; Section 4 discusses the methodology and data; Section 5 documents the empirical findings; and lastly we conclude in the final section.

LITERATURE REVIEW

There are numerous theoretical and empirical studies on fiscal sustainability in both developed and developing countries. There two approaches in this literature.

Hamilton and Flavin (1986), Trehan and Walsh (1988), MacDonald (1992), Uctum and Wickens (2000), Jayawickrama and Abeysinghe (2006) tested the univariate stationarity of the debt or deficit for the whole trajectory path of the fiscal positions over time.

Hamilton and Flavin (1986) showed that if deficits and government debt followed a stationarity process, then intertemporal budget balance is satisfied. They found stationarity of undiscounted US debt under the assumption of constant real interest rates.

Trehan and Walsh (1988), Jayawickrama and Abeysingle (2006) and Smith and Zin (1991) are among those who have found support for the sustainability of U.S. and Canadian fiscal policies, respectively.

Hakkio and Rush (1991) examined the long run cointegrating relationship between government revenues (R) and expenditures (G) (see for example,

Payne, 1997; Papadopoulos and Sidiropoulos, 1999; Martin, 2000; Bravo and Silvestre, 2002; Bajo-Rubio *et al*., 2003; Arghyrou and Luintel, 2007). In this context, the sustainability condition

holds when there is a long run (cointegrating) relationship between public expenditures and public revenues. In other words, rejecting the null hypothesis of no cointegration relationship between the two variables would infer a sustainable fiscal imbalance (weak form).

Hakkio and Rush (1991), allowed for stochastic real interest rates and a growing economy, and have shown that in the 1980s, fiscal policy violated the intertemporal budget constraint within the US. Most of these studies, however, focused on the deficit either in the U.S. or in European countries.

Similarly, research on developing countries has been increasingly available in the literature. This includes Wu (1998), Green *et al.* (2001), Chung (2002), Cashin *et al*. (2003), Radulescu (2003), Qin *et al.* (2006), Tshiswaka-Kashalala (2006), Baharumshah and Lau (2007) and Kia (2008). Wu (1998), Chung (2002) and Tshiswaka-Kashalala (2006), found sustainable fiscal policy for Taiwan, Korea and South Africa, respectively, while Cashin *et al*. (2003) found that Pakistan was on an unsustainable path. Green *et al.* (2001) supported the sustainability hypothesis for Poland while Radulescu (2003) and Qin *et al.* (2006) observed that Romania and the Philippines was on an unsustainable fiscal policy path. In the same line, Kia (2008) found that the fiscal paths for Turkey and Iran are not sustainable while mixed results were present for the four Asian countries (Baharumshah and Lau, 2007).

Ehrhart and Llorca (2008) found that government spending and revenue are cointegrated in the panel of six South-Mediterranean countries while fiscal deficits in most Asian countries (panel analysis) are in violation of their intertemporal budget constraint and that the deficits are too large, especially in the post-1997 crisis (Lau and Baharumshah, 2009).

Recently, using a collection of 24 developing countries Baharumshah and Lau (2010) found support with the intertemporal budget constraint.

SUSTAINABILITY CONDITION

The issue of sustainability of fiscal conduct can be derived from the government's intertemporal budget constraint (GIBC). The budget constraint looks at the long-run relationship between government revenue and expenditure that covers the total government spending on goods and services, transfer payment and interest on debts. The model starts by defining the budget constraint faced by a government at period *t* as follows:

$$G + (1 + r_t)B_{t-1} = GR_t + B_t \qquad (1)$$

where G_t refers to value of government purchases of goods and services and transfer payment; GR_t denotes government revenue; B_t is government debt; and r_t indicates one period interest rate.

The budget constraint expresses in Equation (1) pertains to period *t*; there is a similar constraint for period *t*+1, *t*+2, *t*+3… and recursively solving the equation via forward substitutions leads to the following government intertemporal budget constraint:

$$B_0 = \sum_{t=1}^{\infty} \delta_t [GR_t - G_T] + \lim_{n\to\infty} \delta_n B_n \qquad (2)$$

In Equation (2), $\delta_t = \prod_{s=1}^{t} \beta_s$ where $\beta_s = 1/(1+i_s)$ and δ_t is the discount factor. The equation simply assumes that the current value of government debt B_0 is equal to the expected present value of all future primary surpluses $\sum_{t=1}^{\infty} \delta_t [GR_t - G_t]$, plus a limiting term representing the asymptotic expected present value of the government's debt. In Equation (2), the essential element is in the last term $\lim_{n\to\infty} \delta_n B_n$ where the limit is taken as $n \to \infty$. When the limit term is zero $\lim_{n\to\infty} \delta_n B_n = 0$ (transversality condition), this implicitly rules out a Ponzi scheme in the long-run. The government is not 'bubble' financing its expenditure by issuing new debts to finance the deficit. Hence, if the limiting term in Equation (2) is zero, a fiscal policy will be sustainable.

The above model is not an appropriate equation for testing the sustainability of fiscal deficit. Following the literature, it is assumed that the interest rate is stationary around a mean *r* or expressed as the real interest rate. In order to transform the equation into some testable implication and after further manipulation, Equation (2) may also be written as:

$$GE_t - GR_t = \sum_{s=0}^{\infty} \frac{\Delta GR_{t+s} - \Delta GE_{t+s} r \Delta B_{t-1+s}}{(1+r)^{s-1}} + \lim_{s\to\infty} \frac{B_{t+s}}{(1+r)^{s+1}} \qquad (3)$$

where GE_t represents the total government spending on goods and services, transfer payments and interest on debts or $GE_t = G_t + rB_{t-1}$. Both GR_t and $G_t + (1+r)B_{t-1}$ are assumed to be the non-stationary variables of $GR_t = \alpha_1 + GR_{t-1} + \varepsilon_{1t}$ and $GE_t = \alpha_2 + GE_{t-1} + \varepsilon_{2t}$ **(Hakkio and Rush, 1991).** As a result, Equation (3) can be rephrased as:

$$GE_t = \alpha + GR_t + \lim_{s\to\infty} \frac{B_{t+s}}{(1+r)^{s+1}} + \varepsilon_t \qquad (4)$$

where $\alpha = \frac{1+r}{r}(\alpha_1 - \alpha_2)$ and $E_t \sum_{s=0}^{\infty} \frac{(\varepsilon_{1t} - \varepsilon_{2t})}{(1+r)^{s-1}}$.

Equation (4) forms the basis for testing the hypothesis of sustainable fiscal deficit. If the transversality condition for the budget constraint holds and the limit term in Equation (4) is zero, then the following equation can be formed:

$$GR_t = a + bGE_t + \mu_t \qquad (5)$$

Equation (5) has been widely used as the basis for assessing the sustainability condition of government intertemporal budget constant, in which b is assumed to be unity and μ_t is a stationary process [see for example, **Trehan and Walsh (1988), Quintos (1995) and the Kalyoncu (2005**)].

Quintos (1995) and Martin (2000) identify four possible scenarios in examining the sustainability condition. First, the deficit is 'strongly' sustainable if and only if the $I(1)$ processes of GR and GE are cointegrated with cointegrating vector [1, -1] or with b=1. In other words, the government's budget constraint intertemporally holds, while the undiscounted debt process B_t is $I(1)$. Second, the deficit is only 'weakly' sustainable if GR and GE are cointegrated with $0<b<1$.

Hakkio and Rush (1991) demonstrate that $0<b<1$ is a sufficient criterion for the deficit to be sustainable. However, the condition of $b<1$ implies that the government expenditure will always be larger than revenue. Third, the deficit is unsustainable if $b \leq 0$. An unsustainable deficit is one that implies that B_t is exploding at the rate equal to or in excess of the growth rate in the economy Hence, the limiting term in government intertemporal budget constant of Equation (2) is violated. Fourth, the situation of $b>1$ is not consistent with a deficit. This means that government revenue is growing at a faster rate than government expenditure.

DATA DESCRIPTION AND EMPIRICAL RESULTS

Data Description

The data are annual Sarawak state government expenditures and revenues which cover the period of 1970 to 2008 in the millions of Ringgit Malaysia (RM). The data are obtained from the Yearbook of Statistics Sarawak.

Unit Root Test Results

In this study, we use the Augmented Dickey-Fuller (ADF) unit root test to examine the stationarity properties of the time series before carrying out the cointegration analysis. Overall, we found a realization of an *I (1)* stochastic process from the ADF **(Dickey and Fuller, 1981)** testing procedure. The results which are not presented here were made available upon request.

Cointegration Test Results

Table 1 presents the Johansen and Juselius (1990) cointegration test results with and without the adjustment factor. We are aware of the fact that the standard Johansen's likelihood ratio trace test for making inference on cointegrating rank is biased when the sample size is small as in our case. The unadjusted trace test statistics tend to reject both null hypotheses $(r = 0 \text{ and } r \leq 1)$ at the 5 per cent significance level. These results are clearly biased toward rejecting the null hypothesis as noted by Cheung and Lai (1993) and Gonzalo and Lee (1998). Hence, we computed the correction factor suggested by Reinsel and Ahn (1992) that multiplies the test statistic by *(T-pk)/T* to obtain the adjusted test statistics where *T* is total number of the observations, *p* is the number of variables in the system and *k* is the lag length order of VAR system. Interestingly, the result for adjusted statistics consistently rejects the null of no cointegration $(r = 0)$ at the 5 per cent significance level indicating the existence of a single cointegrating vector. In other words, there is a long-run equilibrium relationship amongst the variables in the model. Since a stable long-run relationship has been identified, we will conduct DOLS and Granger causality tests to verify the sustainability nexus between government revenue and expenditure in Sarawak.

Table-1. Johansen and Juselius Cointegration Test Results

Null	Alternative	*k*=5 *r*=1					
		Maximum Eigenvalue			Trace Statistic		
		unadjusted	adjusted	95% C.V	unadjusted	adjusted	95% C.V
r=0	r=1	25.68	18.92	14.26	30.52	22.49	15.50
r<=1	r=2	4.837	3.564	3.841	4.837	3.564	3.841

Notes: The *k* is the lag length and *r* is the cointegration vector(s). The unadjusted and adjusted statistics are the standard Johansen statistics.

Estimation of Long-run Equilibria

In this study, we follow the dynamic ordinary least squares (DOLS) method proposed by Stock and Watson (1993) in estimating the long-run equilibrium relationship between government revenues and expenditures. This is because the DOLS is a more robust test in which it can correct for possible simultaneity bias among the regressors by the inclusion of lagged and lead values of the first difference in the regressors. In addition, it allows for the dynamic estimation of cointegration vectors for systems involving deterministic components.

The study tests whether the cointegration coefficient *b*=1 (strong from of sustainability condition) is insignificantly different from 1. From Table 2, the estimated *b* was 0.776, which is not close to unity or 0<b<1. The null hypothesis of *b*=1 (strong form) is decisively rejected at conventional significance levels (P=0.00). The empirical results suggest that government revenue (GR) and government expenditure (GE) are cointegrated with the cointegration coefficient less than 1 implying that the fiscal stance satisfying the weak form of sustainability condition. The results

seem to be robust from the standard regression assumptions in terms of serial correlation of residuals; autoregressive conditional heteroscedasticity (ARCH) effects; mis-specification of functional from (RESET test); non-normality (Jarque-Bera test); and heteroscedasticity of residuals (White test).

Table-2. Dynamic OLS Estimation (DOLS)

$$GR_t = a_i + b_i GE_i + \sum_{j=k}^{k} c_i GE_{i-j} + \mu_i$$

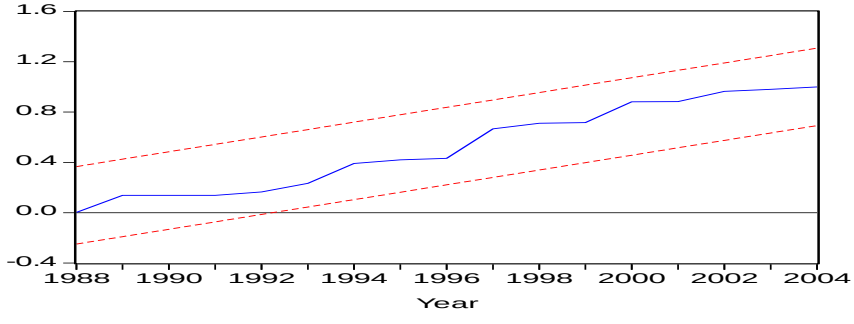
Coefficient of *b*	*t*-statistic	H_0: *b*=1
0.776	22.029	40.347
	(0.000)	(0.000)

Diagnostic checking				
AR(2)	ARCH(4)	RESET(4)	J-B	White
0.397	2.745	3.617	0.750	1.049
(0.679)	(0.084)	(0.522)	(0.687)	(0.512)

Notes: Estimation of DOLS is based on the period from 1970 to 2008 with four lags and four leads of first-differenced explanatory variables. There are live diagnostic checks: AR(2) is a test of 2th order serial correlation using Breusch-Godfrey serial correlation LM Test. ARCH (4) is an 4th-order test for autoregressive conditional heteroscedasticity. Ramsey's RESET (regression specification test) uses the square of the fitted values. J-B (Jarque-Bera) is the test of the normality of the residuals. The White general heteroscedasticity test is based on the regression of squared residuals on squared fitted values. Parenthesized values are the probability of rejection (*p*-value).

Besides that, we also utilized the CUSUM square (CUSUMSQ) stability test for the estimated model. If the plot of the (CUSUMSQ) sample path moves outside the critical region (5% significant level), the null hypothesis of stability over time for intercept and slope parameters is rejected. Figure 1 shows that the null hypothesis of parameter stability cannot be rejected at the 5% level of significant, this because the plot of the CUSUMSQ test was fluctuates inside the 5% critical band. Thus, this implies that the model is indeed stable over the estimated period.

Figure-1. CUSUM of Squares Test



Granger Causality Results

The modified WALD (MWALD) for testing *Granger non-causality* linkages proposed by Toda and Yamamoto (1995) will be estimated with the Seemingly Unrelated Regression (SUR) to examine the causal interaction between government expenditure and revenue in Sarawak (see also Rambaldi and Doran, 1996). This method allow causal inference to be conducted in the level VARs that may contain integrated and (non-) cointegrated processes whether the individual variables are *I(0), I(1)* or *I(2)* process. More importantly, the procedure overcomes the pre-test biases that practitioners may be confronted with the Vector Error Correction Model (VECM) and other modeling formulation involving unit root and cointegration tests. To use the MWALD test, we have to decide the maximal order of integration $\left(d_{\max}\right)$ for the variables in the system and the optimal lags structure (k) for the VAR model. The augmented VAR $p = (k + d_{max})$ model is expressed as follows:

$$\begin{bmatrix} GR_t \\ GE_t \end{bmatrix} = \begin{bmatrix} \alpha_{1t} \\ \alpha_{2t} \end{bmatrix} + \begin{bmatrix} \beta_{11}^{(1)} & \beta_{12}^{(1)} \\ \beta_{21}^{(1)} & \beta_{22}^{(1)} \end{bmatrix} \begin{bmatrix} GR_{t-1} \\ GE_{t-1} \end{bmatrix} + \begin{bmatrix} \beta_{11}^{(2)} & \beta_{12}^{(2)} \\ \beta_{21}^{(2)} & \beta_{22}^{(2)} \end{bmatrix} \begin{bmatrix} GR_{t-2} \\ GE_{t-2} \end{bmatrix} + \begin{bmatrix} \beta_{11}^{(3)} & \beta_{12}^{(3)} \\ \beta_{21}^{(3)} & \beta_{22}^{(3)} \end{bmatrix} \begin{bmatrix} GR_{t-3} \\ GE_{t-3} \end{bmatrix} + \begin{bmatrix} \varepsilon_{RR} \\ \varepsilon_{RG} \end{bmatrix} \quad (6)$$

To test whether GE does not Granger causes movement in GR, the null hypothesis H_0: $\beta_{12}^{(1)} = \beta_{12}^{(2)} = 0$ in the first equation of the system (if k=2 and d_{max}=1). The existence of the causality from GE to GR can be established through rejecting the above null hypothesis, which requires finding the significance of the MWALD statistics for GE_{t-1} and GE_{t-2} identified above while GE_{t-3} is left unrestricted as a long run correction mechanism (spend and tax hypothesis). Similar analogous restrictions and testing procedure can be applied in testing the hypothesis that GR does not Granger cause movement in GE, i.e. to test H_0: $\beta_{21}^{(1)} = \beta_{21}^{(2)} = 0$ of the second equation of the system (Eq. 6). This would be in line with Friedman's (1978), tax-and-spend hypothesis. This procedure can be easily generalized for a larger number of lags in the VAR system. The causality tests will provide a useful indicator of how the authorities may respond to the imbalances in the future.

There are four main hypotheses with regard to the causal nexus of government expenditure and government revenue:

i. One-way causation from expenditure to revenue (spend-and-tax hypothesis). Barro (1979) points out that government will adjust revenue to the level of the planned expenditure.

ii. One-way causation from revenue to expenditure (tax-and-spend hypothesis). Friedman (1978) states that the authorities adjust their expenditure to the level of revenue so that control over revenue leads to limiting growth in the public sector.

iii. Bi-directional causality (fiscal synchronization). According to the Musgrave (1996), this is the classical view of public finance. The fiscal authorities tend to make simultaneous decisions on expenditure and revenue. Hence, the two macro-variables will mutually reinforce each other.

iv. No causality condition. This is consistent with no cointegration and a sustainability problem. The authorities can set the level of expenditure and revenue by rule and thumbs. According to Hoover and Sheffrin (1992), this phenomenon will reflect the institutional separation of allocation and taxation functions of the government.

From Table 3, we were able to reject the hypothesis of bi-directional causality. This provides an empirical basis for the notion those expenditure changes simultaneously with changes in revenues (fiscal synchronization). This confirms the assumption of equivalency between the marginal costs and marginal revenues that the utility-maximization suppliers and demanders of the public services make. In other words, the government would compare the marginal costs and revenues when making a decision about its expenditures and revenues. These were in line with empirical investigation by Li (2001), Fasano and Wang (2002), Owoye (1995), Baharumshah and Lau (2007) and Doh-Nani, R. and Awunyo-Vitor (2012) where the decisions will be made concurrently by fiscal authorities.

Table-3. Granger Non Causality Results

H_0	χ^2	Conclusion
GR does not Granger Cause GE	11.68**	Reject the null hypothesis. There is causality from GR to GE
GE does not Granger Cause GR	24.55***	Reject the null hypothesis. There is causality from GE to GR

Notes: GR = Government Revenue, GE = Government Expenditure. Asterisks (**) and (***) indicate statistically significant at 5% and 1% levels, respectively.

CONCLUSION AND RECOMMENDATIONS

This paper reexamines the fiscal sustainability notion for Sarawak state for the past three decades. This information is crucial for Sarawak in evaluating its financial performance and strategies. Being the largest state in Malaysia, prudent planning for expenditure and revenue policy options is important to support development strategy. From the econometric analysis, we found support for weak form sustainability for the sample period. Results suggest that for every ringgit spent by government, around 0.776 cents in revenue is generated. As noted by Martin (2000), although this result is consistent with sustainability, it may have some implications for the ability of the state government to market its debt and it is generally perceived as the less desirable scenario.

Further, bi-directional causality was detected, implying that the authorities made simultaneous decisions on expenditure and revenue. In order words, fiscal stance decision is subject to the

marginal costs and marginal revenue in order to determine the appropriate levels of government expenditure and revenue in the state. According to this hypothesis, government simultaneously chooses the desired package of spending program along with the revenue necessary to finance the spending program (Meltzer and Richard, 1981). Whilst the gap between government expenditure and government revenue has not widened, Sarawak should adopt a more ambitious fiscal consolidation framework, where it should not put additional pressure on the state government financial performance. Careful implementation of fiscal consolidation would provide some buffer to the state economy especially with the uneven and sluggish recovery in the global economy.

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