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Short Run and Long Run Ricardian Equivalence: An Evidence from Malaysia

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ABSTRACT

This paper aims to test the validity of Ricardian equivalence in Malaysian economy with respect to the behavior of government debt and government spending on private consumption. To conduct the test, we choose Giorgioni and Holden (2003) model based on Bernheim (1987) model modifications. Auto-Regressive Distributed Lags (ARDL) Bounds test approach is employed to estimate the model in order to capture the hypothesis existence both in short run and long run. Consequently, the results show that the existence of Ricardian equivalence hypothesis is statistically rejected both cases. It also shows that Malaysians perceive government debt as net wealth and the government spending itself gives complementarity effect on private consumption. Therefore, Malaysian fiscal policy is a good macroeconomic stabilization tool to foster incessant economic growth.

Keywords: Government Spending, Private Consumption, Ricardian Equivalence

INTRODUCTION

The term Ricardian Equivalence Hypothesis, or interchangeably, "Ricardian Equivalence Proposition" and "Ricardian Equivalence Theorem" inevitably embraces current macroeconomics vocabulary. In a seminal paper, Barro (1974) makes his first formal exposition on this theory. While, Ricardo originally states that the fundamental theoretical rationale behind the Ricardian equivalence hypothesis, in the early 19th century (Afonso, 1999).

The main idea of Ricardian equivalence hypothesis, hereafter abbreviated as REH, suggests that a given path of government deficit does have conditions where government deficits neither affect any important macroeconomic variable nor cause distressing effects on economic welfare of any individual (Williamson, 2008

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pp. 253). In other words, the government deficit spending does not affect the private consumption (Samuelson & Nordhaus, 2005). Ironically, REH suggests that the consumers internalize the government budget constraints. Presumably, they are rational enough to the behavior of government policy. Consequently, it does not matter whether the government finances the spending by issuing its debt or increasing the tax The effects on total aggregate demand or private consumption in the economy remain the same. This reveals the inconsequential effect of government fiscal policy.

Principally, there are few assumptions to be considered in the route of holding the hypothesis. Barro (1974) highlight the foundation of such assumptions to firmly support the theory. The main assumptions in the REH are as follows:

1. The principles of altruism has made the generations linked in the financial intergenerational transfer. In such a way, infinite horizon the consumption decisions might be taken by a hypothetical representative consumers. Consumers are linked to each other and it begins from parents to their children. The process continues to the next generations.
2. The perfect and efficient capital markets are able to provide consumers and the government with the same interest rates on lending and borrowing money and the households not facing liquidity constraints.
3. Rational expectations are economic agents where the consumers have perfect information about their income and taxes. Consumers also are able to fully anticipate their future taxes and underlying new public debt issued.
4. There is no distortionary in taxes and the taxes are in lump sum. In addition, taxes are charged equivalently to all economic agents. However, we are more concerned about validating the theory regarding the effect of government debt and government spending on private consumption. Thus, we accept the underlined assumptions.

LITERATURE REVIEW

In validating the REH, there are several conceptual frameworks that have been used in the literature. The construction and propriety of using any specific model to test REH are well-debated. Some authors agree to adopt and extend the use of standard consumption function to validate the hypothesis. In fact, the standard consumption function is widely used in the literature. (see Kormendi, 1983; Reid, 1989; Giorgioni & Holden, 2003).

On the other hand, there are some authors who do not completely agree to use the function due to the controversial assumptions spawned about the theory. Thus, they employ other relevant models such as inter-temporal consumption function, infinite horizon representative agent model and rational expectation model (see Blanchard, 1985; Evans, 1988; Graham & Himarios, 1996; Ghatak &

Ghatak, 1996; Walker, 2002). Despite various arguments spurred on the selection of models, we believe that the selection of the best model to assess the REH can be intensely influenced by the study objectives and supported with strong and consistent econometric procedures. The enhanced and advanced modeling embedded with technical econometrics works have made the hypothesis validation more complicated. Therefore, it is common to have mixed results.

The validity of REH is vague especially in developing countries. Khalid (1996) has attempted to analyze the validity of this proposition and the sources of deviation from the REH among the 21 samples of developing countries. Briefly, the REH holds for 12 out of 17 countries in a different level of significance. On the other hand, Giorgioni and Holden (2003), analyzes the existence of REH in 10 less developed countries. They state that the Ricardian equivalence issues in less developed countries are complex but definitely cannot be simply ruled out a priori. Thus, such analysis supports the evidence of mixed validity. Consequently, the economic structure is feasibly the exogenous factor that influences the existence of such hypothesis.

Ghatak and Ghatak (1994), find the failure of REH in India after estimating the multi co-integration analysis on rational expectation model. The less developed economy of India in that period provides an inclusive environment to induce the theory refusal. Imperfect credit markets, liquidity constraints, differential borrowing rates, and finite planning horizons in India invalidate the proposition. Similarly, Siddiki (2010) test the hypothesis in Pakistan. It has discovered that the REH has been invalidated in Pakistan due to the same source of deviations as mentioned by Ghatak and Ghatak (1994). On the other hand, Mohammadi and Moshrefi (2012) find the evidence of Ricardian equivalence consistency based on the relationship between fiscal policy and current account in four East Asian countries such as South Korea, Malaysia, Singapore and Thailand.

Moreover, Giorgioni and Holden (2003), find that the G-7 countries; USA, Japan, Germany, France, United Kingdom, Italy and Canada, except Italy, rejected the REH. Their thorough analysis show that the source of failure is due to the Keynesian effect of the relationship between government spending and private consumption. Cuaresma and Reitschuler (2007) test the hypothesis on EU-15 countries using the model proposed by Leiderman and Razin (1988) and Khalid (1996). They discover that only 8 out of 15 countries hold the existence of REH. However, after justifying the existence of cointegration relationship, only 3 countries show clear results.

Afonso (2008) use the Euler consumption function to test the existence of REH in European Union (EU) countries. The time is separated into two sub-periods; pre-Maastricht and post-Maastricht treaty. Interestingly, he discovers that the REH only exists in post-Maastricht period as the government debt no longer has impact on private consumption. Meanwhile, Choi and

Holmes (2011) investigate the relevance of REH in the US economy using a Markow regime-switching model focusing on the relationship between budget deficit and real interest rate. They realize that the evidence of Ricardian equivalence is regime-specific causing the theory to be rejected for most of the post-WWII period. Whereas, the other period upholds the theory.

METHODOLOGY AND DATA

The basis of the model development is according to the simple linear consumption function originally constructed by Bernheim (1987). In addition, Giorgioni and Holden (2003), make some modifications on Bernheim (1987) model to capture the following:

i. domestic and foreign debt as well as debt level contingency;

ii. temporary and permanent government spending effect.

Firstly, the original model by Bernheim (1987) is as follows;

$$C_t = \beta_0 + \beta_1 Y_t + \beta_2 DEF_t + \beta_3 G_t + \beta_4 D_t + \beta_5 W_t + \beta_6 X_t + \varepsilon_t$$

1. where, C_t is the private consumption, Y_t is national income (GDP), DEF_t is government deficit or surplus (termed as fiscal balance, hereafter), G_t is government consumption expenditure or government spending, D_t is government debt, W_t is private wealth and X_t is factor of growth. Due to unavailability of data, Bernheim (1987) discards the variable that measures wealth, W_t. To adjust for heteroscedasticity, Bernheim (1987), weighs each variable to income, GDP. Specifically, Bernheim (1987) divides the growth factor, X_t into two main components; income growth, YG_t and population growth, PG_t. Thus, the model is given by,

$$C_t = \beta_0 + \beta_1 DEF_t + \beta_2 G_t + \beta_3 D_t + \beta_4 YG_t + \beta_5 PG_t + \varepsilon_t$$

2. Giorgioni and Holden (2003) initiate a simple but significant modification on Bernheim (1987) model. They split the government debt into two variables, namely the domestic debt, D_t, and foreign debt, FD_t. They also capture the effect of debt level by introducing dummy variable, domestic debt, *DUMD*, and foreign debt, *DUMFD*. The level of debt is established based on the mean value of the domestic and foreign debt (as suggested by Dalamagas, 1992a, 1992b cited in Giogiorni & Holden, 2003). The dummy of high debt for domestic debt variable is taken based on the average ratio of domestic debt. If the individual data of domestic debt is above the mean value of the ratio, then the high-indebtedness takes value of 1. Otherwise, low debt is represented as 0, when the individual value of domestic debt, D_t is lower than the mean value of D_t. Following that basis, the procedure of determining the dummy for the foreign debt, FD_t, is also applied. In this paper, the average domestic debt is 0.426 and the foreign debt is

0.136. Furthermore, the decomposition of the government spending is divided into two components, namely temporary government spending and permanent government spending. This is implemented by using Hodrick-Prescott filter. Giorgioni and Holden (2003), drops the factor of growth due to the ineffectiveness influence of the variables to the overall conclusion. This conjecture is consistent with Bernheim (1987) findings. Therefore, below is the proposed estimation model:

$$C_t = \beta_0 + \beta_1 DEF_t + \beta_2 G_{t,\ Permanent} + \beta_3 G_{t,\ Temporary} + \beta_4 D_t + \beta_5 FD_t + \beta_6 DUMD + \beta_7 DUMFD + \varepsilon_t$$

3. To prove the existence of the REH, the coefficient of DEF_t, D_t, and FD_t are expected to be equal to zero (Bernheim, 1987). This means that the changes of government deficit and government debt have no impact on private consumption. In order to validate REH, Kormendi (1983) and Siddiki (2010), mention that the government spending crowds out effect on private consumption. The coefficient of G_t and $G_{t,\ Permanent}$ are less than zero. Giorgioni and Holden (2003), finds that $G_{t,\ Temporary}$ is insignificant due to less effectiveness of temporary changes of government spending on private consumption. All data are collected from International Financial Statistics Yearbook of 2003 and 2006 series.

The ARDL Bounds test approach is developed by Pesaran *et al*. (2001) based on ordinary least square (OLS) estimation. The usage of ARDL approach is to discover the long run and the short run coefficients to validate the REH. Performing the ARDL approach allows us to derive the dynamic error correction model (ECM) with a simple linear transformation (Bannerjee *et al*. 1993). The ECM is useful to integrate the short run and the long run equilibrium without losing long-run information (Shrestha & Chowdury, 2005 cited in Hoque & Yusop, 2010). For the purpose of the paper, succeeding Pesaran *et al*. (2001), our model can be expressed into the error correction representation of the ARDL specification model. The specifications are as follows,

For model (3)

$$\begin{aligned}\Delta C_t = {} & \alpha_0 + \sum_{i=1}^{p} \alpha_1 \Delta C_{t-i} + \sum_{i=0}^{p} \alpha_2 \Delta DEF_{t-i} \\ & + \sum_{i=0}^{p} \alpha_3 \Delta G_{t-i,Temporary} + \sum_{i=0}^{p} \alpha_4 \Delta G_{t-i,Permanent} \\ & + \sum_{i=0}^{p} \alpha_5 \Delta D_{t-i} + \sum_{i=0}^{p} \alpha_6 \Delta FD_{t-i} + \beta_1 C_{t-1} \\ & + \beta_2 DEF_{t-1} + \beta_3 G_{t-1,Temporary} + \beta_4 G_{t-1,Permanent} \\ & + \beta_5 D_{t-1} + \beta_6 FD_{t-1} + \beta_7 DUMD \\ & + \beta_8 DUMFD + \mu_t\end{aligned}$$

where Δ denotes the first difference operator, α_0 is the intercept term, ε_i is the usual white noise residuals, and the remaining variables are as defined earlier. The addition of lagged-level variables linear combination in model (4) is functional as proxy for lagged error terms in standard VAR model. It measures the departure of the dependent variable

from the explanatory variables in model (3) (see Baharumshah *et. al*, 2009). Most importantly, Pesaran *et al*. (2001) emphasize on choosing lags; where, sufficiently large lags help to deal with serial correlation problem. At the same time, small lags avoid unduly over-parameterization. Since we are dealing with annual data, we imitate Pesaran and Shin (1999) and choose 2 lags for our error correction model. In determining the appropriate lags, we start with estimation of model (4) with 2 lags using OLS method and obtain the general ARDL models. After that, in order to acquire parsimonious models, we replicate Hendry's (1995) general-to-specific modeling approach. It is done through eliminating the insignificant variables and lags from the model. Finally, the best lags are determined based on Schwartz Information Criterion (SIC).

In order to test the ARDL for cointegration, we use Wald coefficient test procedure. This is to determine the joint significance of the lagged levels of the variables in model (4) by obtaining the F-statistic. Narayan (2005) provide a set of critical values for the F-test for small sample estimation. The null hypothesis of no cointegration for model (4) denotes the following:

$$F_C\,(C|DEF,\ G_{Temporary},\ G_{Permanent},D,\ FD)$$

The null hypothesis is $H_{0:}\ \beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = \beta_6 = 0$ against $H_{1:}\ \beta_1 \neq \beta_2 \neq \beta_3 \neq \beta_4 \neq \beta_5 \neq \beta_6 \neq 0$.

Therefore, if the estimated F-statistic appears to be larger than the upper bounds of the critical value, the null hypothesis of no cointegration is statistically rejected. This indicates that the variables in the error correction representation models are cointegrated. Possibly, if the calculated F-statistic is smaller than the critical value, the conclusion may appear to support the non-existence of cointegration within the variables. Conversely, if the computed F-statistic falls within the bounds, the order of cointegration of the explanatory variables must be known to determine the conclusion (Baharumshah *et al*., 2009). Tang (2003) argue that under this situation, the variables are cointegrated on the basis of lower bounds when the variables are *I*(0). On the contrary, if the variables are *I*(1), the variables are not cointegrated on the basis of the upper bounds.

To determine the long-run coefficient, we use the Wald coefficient test on the long run model as follows:

$$\begin{aligned} C_t = {} & \alpha_0 + \sum_{i=1}^{p} \alpha_{1+i} C_{t-i} + \sum_{i=0}^{p} \alpha_{2+i} DEF_{t-i} \\ & + \sum_{i=0}^{p} \alpha_3 + iG_{t-i,Temporary} \\ & + \sum_{i=0}^{p} \alpha_{4+i} G_{t-i,Permanent} \\ & + \sum_{i=0}^{p} \alpha_{5+i} D_{t-i} + \sum_{i=0}^{p} \alpha_{6+i} FD_{t-i} \\ & + \alpha_{7+i} DUMD + \alpha_8 DUMFD + \varepsilon_t \end{aligned}$$

4. The estimation of long run models follow the same procedure as ARDL Bounds test for cointegration as stated earlier. To generate the long-run coefficients, the coefficient of each of the independent lagged variables is divided by the coefficient of lagged

dependent variable and multiplied with negative sign (Hoque & Yusop, 2010). As for the dummy variables, we directly take the coefficients generated in the long run estimation as suggested by Choong *et al*. (2005).

The determination of the short-run coefficient is based on the first difference variables of error correction model inclusive of error correction term (ECT). So, the ARDL short run models are derived based on re-parameterization of ARDL long run models, where ARDL short run model is as follows:

$$\Delta C_t = \alpha_0 + \sum_{i=1}^{p} \alpha_{1+i} \Delta C_{t-i} + \sum_{i=0}^{p} \alpha_{2+i} \Delta DEF_{t-i} + \sum_{i=0}^{p} \alpha_{3+i} \Delta G_{t-i,Temporary} + \sum_{i=0}^{p} \alpha_{4+i} \Delta G_{t-i,Permanent} + \sum_{i=0}^{p} \alpha_{5+i} \Delta D_{t-i} + \sum_{i=0}^{p} \alpha_{6+i} + \alpha_7 DUMD + \alpha_8 DUMFD + \gamma ECT_{t-1} + \varepsilon_t$$

5. Again, we use Wald coefficient test to generate the short-run coefficient as described for the long-run coefficient. Finally, to test the goodness-of-fit of the ARDL models, we conduct the diagnostic and stability tests which examine the normality (Jarque-Bera normality test), serial correlation (Breusch-Godfrey LM test), heteroscedasticity (ARCH test), specification error (Ramsey's RESET test) and model stability (CUSUM and CUSUM square test).

RESULT AND DISCUSSION

The Unit Root Test Results

Conventionally, the ARDL bounds test for cointegration does not explicitly require the order of integration. Liu (2009) mention that the procedure also does not require the variables to be particularly integrated of order 1, *I*(1). However, it is crucial to employ the stationarity test to ensure that the variables are not integrated of order 2, *I*(2). The F-test critical values computed by Pesaran *et. al* (2001) and Narayan (2005) are assumed to be *I*(0) and *I*(1) for all variables. Therefore, the presence of *I*(2) will cause the F-test to be spurious.

Enders (1995) mention that two types of unit root tests should be considered in order to have a safe choice on the unit root test, namely the Augmented Dickey-Fuller (ADF) test and the Phillips-Perron (PP) test. We will have big confidence on the results if both tests strengthen each other. Therefore, we agree to conduct two widely used unit root tests methods in this paper. The unit root tests selected are ADF and the Phillips-Perron (PP) test on the models variables. The unit root tests are performed at the level and the first difference for both with the intercept and trend term. The results of the ADF and Phillips-Perron unit root test are presented in Table 1. From the table, we can make a general conclusion that both unit root tests reinforce each other to conclude that all variables are non-stationary at 1% to 5% significant levels.

However, all variables are stationary in first difference except for government spending variable in Philipp-Perron test and domestic debt variables on both tests specifically with intercept and trend term. Overall, all variables in the models are non-stationary in level and stationary at their first difference.

ARDL Bounds Test Results

In order to examine the REH existence, the UECM version of the ARDL model with lag two of the consumption function, specifically model (4) is estimated to ascertain the long run relationship among the variables. The parsimonious model is selected based on SIC. The results on model (4) are presented in Table 2.

Apparently, the results confirm that model (4) has sufficient characteristics to prove the existence of cointegration. The F-statistic of model (4) is 20.509 indicating that it is greater than the upper bound of

TABLE 1
The results of the ADF and Phillip-Perron unit root test statistics

	ADF		Phillip-Perron	
Level				
	Intercept	Intercept and trend	Intercept	Intercept and trend
C_t	-2.108	-3.382	-2.108	-3.385
DEF_t	-1.490	-1.855	-2.034	-2.332
G_t	-1.956	-3.126	-1.956	-3.153
D_t	-1.738	-1.728	-1.550	-1.558
FD_t	-1.573	-1.710	-1.410	-1.516
First Difference				
C_t	-6.296***	-6.321***	-6.480***	-6.647***
DEF_t	-5.924***	-5.801***	-6.780***	-6.934***
G_t	-3.861***	-3.951**	-8.964	-10.629
D_t	-3.536**	-3.477	-3.556**	-3.499
FD_t	-3.567**	-3.595**	-3.567**	-3.629**

Note: Unit root tests were performed by using Eviews 7.0 version. ** 5% significant level, ***1% significant level

TABLE 2: ARDL Cointegration Test on model (4)

Lag Structure	1,2,1,2,2,1	
Bounds Test Critical Value	Lower	Upper
1% significance level	4.257	6.040
5% significance level	3.037	4.443
10% significance level	2.508	3.763
F-statistic	20.509	

The F-statistic from Wald coefficient test is used to test the joint coefficient of the lagged variables in the ARDL model. The critical values are referred from table case 3: unrestricted intercept and no trend, Narayan (2005), page 1988. 5 explanatory variables are estimated in model 4.

the bound test critical values. Thus, the null hypothesis of no cointegration is ominously rejected at 1% level of significance.

The objective of this paper is to validate the existence of REH in Malaysia. Therefore, as aforementioned, to prove the hypothesis existence and its validity, the following underlined restriction should be complied; where the coefficient of DEF_t, D_t, and FD_t is equal to zero, and the coefficient of G_t and $G_{t,\ Permanent}$ is less than zero. Noticeably, as suggested by De Vita and Abbott (2002) and Kollias *et al*. (2008), the estimated coefficients obtained from the regression process represent the relationship between the dependent and independent variables. The strong relationship arises when the coefficients are statistically-larger than one. Whereas, weak relationship is discovered when the coefficients are significantly below one. From the result in Table 3, in the long run, the fiscal balance is significant in Giorgioni and Holden (2003) model with a strong negative relationship (-1.353), hereafter abbreviated as G-H (2003) model. Perrotti (1999), Giavazzi and Pagano (1990, 1996) and Cuaresma and Reitschuler (2007) imply that the negative effect of fiscal balance shows that there is non-Keynesian effect of fiscal policy in the case of high debt-to-GDP ratio and possibilities of large and persistent fiscal corrections in the country. Meanwhile, in the short run, the results show there is positive relationship between fiscal

TABLE 3
ARDL Bounds Test Results for G-H (2003) model

Model	Giorgioni and Holden (2003)	
Variables	Short Run	Long Run
Lag Structure	1,1,2,1,2,1	1,1,2,1,2,1
Constant	9.17E-5 (0.044)	0.311 (9.968)***
DEF_t	0.307 (3.302)***	-1.353 (-3.554)***
$G_{t,\ Temporary}$	-3.746 (-2.796)**	-3.490 (-4.899)***
$G_{t,\ Permanent}$	2.352 (3.446)***	0.195 (0.473)
D_t	-0.384 (-3.434)***	0.266 (2.615)**
FD_t	-0.068 (-1.086)	-0.201 (-1.494)
DUMD	-0.008 (-2.078)	-0.039 (-2.533)**
DUMDD	0.007 (1.194)	0.002 (0.179)
Diagnostic Tests		
Jarque-Bera	0.132 [0.936]	
LM test (1)	3.946 [0.047]	
LM test (2)	5.213 [0.074]	
ARCH test	0.447 [0.504]	
Ramsey RESET test	0.716 [0.410]	
CUSUM test	Stable	
CUSUMSQ test	Stable	

Notes: t-value in the parentheses (...) and p-value for diagnostic test in parentheses [...]. **significant at 5% level, ***significant at 1% level.n/a imply that the variable is not applicable in the estimation.

balance and private consumption.

In the aspect of debt variables, D_t, and FD_t, the domestic debt is significant in both regimes, but with different signs. However, in the long run, G-H (2003) model infer the significance of domestic debt to positively influence the private consumption. Overall, the domestic debt seems to have stimulation effect on private consumption in the long run. It means that the debt is perceived as net wealth by the individuals (Schlicht, 2006; Marinheiro, 2008). As for foreign debt, it is insignificant in the short run and the long run, but with expected sign for Malaysia case. Baharumshah *et al*. (2003) explain that in the long run, the large and persistent current account deficit tends to increase domestic relative to foreign interest rates. The accumulation of larger debt will imply increasing interest payments. Consequently, lower the standard of living.

Another restriction of validating the REH is that the government spending produces crowding out effect on private consumption. As per the G-H (2003) model, the permanent government spending has a positive influence on private consumption in the short run (2.352). However, in the long run the impact is insignificant but with the same positive sign. This shows that there is complementarity effect of government spending on private consumption in Malaysia. Such finding is in line with Tagkalakis (2008). In contrast, the temporary government spending has crowding out effect both in the short run and the long run. A strong and significant effect is discovered but this result contradicts with that of Giorgioni and Holden (2003). However, it is consistent with Ihori (1987) where the permanent government spending has more expansionary impact on private consumption, compared to temporary government spending.

From the above explanation, we find that the REH is resoundingly rejected in Malaysia. It is due to the fact that the Keynesian effect is more likely influence the individual decisions in Malaysia. The perception that government spending and debt equivalent to net wealth promotes Malaysian private consumption. Presumably, these could be the factors that deviates this country from the REH proposition. Schclarek (2007) state a meaningful explanation on this result where government spending in the developing countries has larger Keynesian effects on private consumption, compared to developed countries.

To confirm the validity of the estimated models, we employ five diagnostic tests, namely the Jarque-Bera normality test, the Breusch-Godfrey serial correlation Lagrange multiplier (LM) test, the Auto-regressive conditional heteroscedasticity (ARCH) test, Ramsey RESET test on model specification and the CUSUM and CUSUM square test to test for model stability. Th diagnostic tests are performed on model (5) for long-run coefficient estimation. From the result of the diagnostic tests, the models‑fulfill the requirement of standard assumptions of regression. The Jarque-Bera test statistics confirm that the residuals are normally distributed. The Breusch-Godfrey test statistics also fail to reject the null

hypothesis of no serial correlation, in the first and second order serial correlation at 1% to 5% level of significance. Therefore, the ARDL models are robust to residual serial correlation. The residuals are also tested on the constant variance. We find that the residuals are all homoscedastic. Evidently, the Ramsey RESET test confirms the correct functional form of the model, at 1% to 5% significant level. Finally, the CUSUM and CUSUM square tests proposed by Brown *et al.* (1975) were developed to test for long-run parameter stability. The test plots the cumulative sum of recursive residuals and certifies the estimated stability if the CUSUM statistics stays within 5% significance level (Baharumshah *et al*., 2009). CUSUM square statistics is based on the squared recursive residuals. As we can see in Fig.1, the plotted CUSUM and CUSUM squared statistics of the model stay within a pair of straight lines which represent the 5% significance critical bounds to indicate the stability of the estimated models.

CONCLUSION

The objective of this paper is to validate the existence of Ricardian equivalence hypothesis (REH) in Malaysia in the short run and the long run, compliant with the effect of government debt and government spending on private consumption using ARDL Bounds test approach. The assessment of the results portrays the evidence of the hypothesis validity in Malaysia is statistically rejected. In summary, the finding has suggested that the inference that Malaysians perception on government debt is equivalent to net wealth and the government spending has complementarity effect on private consumption. Accordingly, the government activity through the fiscal policy is a good macroeconomic stabilization tool in Malaysia.

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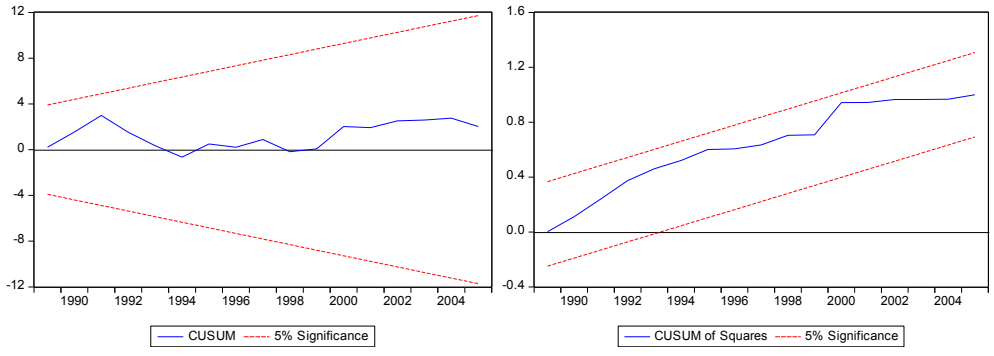

Fig.1: Result of CUSUM and CUSUM square test on long run model (5)

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