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Nexus Between Financial Development and Economic Growth in Malaysia

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ABSTRACT

Financial development is the key for economy evolution as financial intermediaries could foster productivity growth and capital accumulation which lead to the economic growth. The nexus between financial and economic growth is an issue that has long been debated. On the one hand, a stream of literatures offer support to the contention on the running causality from financial development towards economic growth while on the other hand, economic variables are found to foster the financial institutions. Therefore, this study aims to investigate the relationship between financial development and economic growth in Malaysia over the period of 1990 to 2013. The research methods adopted are Johansen cointegration test to check the existence of short term and long term relationship between variables used and Granger causality test to determine the relationship direction for the different variables used. The study finds evidence of a long-run relationship between financial development and economic growth, amid a running causality between economic growth to all indicators of financial development in Malaysia with the exception of financial system deposit. The results imply economic growth can be further developed as it stimulates the development of financial indicators.

Keywords: Financial development, Economic Growth, Malaysia

INTRODUCTION

The economic growth of nations is largely dependent on a financial system which is largely built on stable financial development policies. In other words, financial development is the key for economy evolution as financial intermediaries could improve economic efficiency and growth by improving risk management, making financial transactions, savings mobility and make easy for the exchange of goods and services (Levine, 1997). Financial intermediaries could foster productivity growth (Beck et al., 2000; Ang, 2008) and capital accumulation which lead to the economic growth (King and Levine, 1993). This suggests that the efficiency of the financial system positively contribute to economic growth (Rachdi and Mbarek, 2011).

The nexus between financial and economic growth is an issue that has long been debated. Studies such as Adnan (2011) and Galindo et al. (2007) claim there is strong positive correlation between long-term indicators of financial development and economic growth; the financial development push economic growth through two channels, redistributing resources from traditional to growth and promoting entrepreneurship (Lerohim et al., 2014). In other words, the abovementioned studies support the finance led hypothesis. Nevertheless, another stream of studies offers no evidence of the finance led growth hypothesis. For instance, Waqabaca (2004) discovers the existence of positive link among financial development and economic growth with causality direction from growth to finance. Odhiambo (2004) supports a demand-following phenomenon whereby economic growth trigger the progress of financial sector. Demetriades and Law (2006) suggest economic growth could result in financial development such as financial products and services as well as financial institutions in the markets due to higher demand for financial services (Ang and McKibbin, 2007). Lucas (1988) argues the role of finance in economic growth has been overstressed.

However, regardless of the long-standing debate on financial development-growth nexus, a stable and efficient financial policy plays a major role in the development of nation. In other term, financial development could be expressed as the development of a nation's financial system. It is an essential path in order to grow toward an innovative and developed nation. Financial development could be determined by the level of performance in financial system of a nation; the measures are depth, access, efficiency and stability (Levine et al., 2000). A weak financial system ultimately it affects the economic growth and reduces economic opportunities (Čihák et al., 2013). In support, Nguyen (2004) and Demirgüç-Kunt (2010) had also discussed on the consequences of a poorly regulated financial system. Thus, the experimentation of a financial system is critical in carving a most ideal policy to stabilize economic and progress towards developed nation. Prevention is better than cure. Forecasting in the future development direction helps to sustain nation's economic level. A stable economic and political background intends to provide a more harmony and secure living standard for the peoples.

This study seems timely with Association of Southeast Asia Nations (ASEAN) efforts moving towards market liberalization, as the regional integration strives to reach a new milestone called the ASEAN Economic Community (AEC) 2020. As a result, the market will be more liberalized and integrated, thus there is a need to study the issue of liberalization. On this note, financial integration is established in hope to rise with trade integration. The ASEAN Economic Community (AEC) formation by 2020 is targeted to bring the region into the financial and economic integration's focuses. However, a lot of effort in financial systems and infrastructures have to be upgraded before promoting ASEAN into the global market, including promoting financial development and economic growth through the increase in international and intra-ASEAN trading (Almekinders et al., 2015).

Since the past decade, ASEAN nations have been growing progressively well. The large factor has to be contributed by its macroeconomic environment (ASEAN, 2015). According to ASEAN (2015), policies such as competitive exchange rates and effective monetary policies are implemented.

Nations such as Malaysia, Indonesia and Thailand has three times more GDP per capita in 1996 than in 1970, Philippines has gradually increase on their economic growth, whereas Singapore had join the rich industrial countries (Hicklin et al., 1997). All these GDP growth rates are an absolute success and constantly ranked as the brightest economies, but it was still far back behind other more successful countries in Asia, such as China and India.

Despite other countries are putting themselves into the potential global market, Malaysia is drawing back from the line. According to Vorhauser-Smith (2014), MNCs report shows there is a hardship faced by Malaysian constantly in substituting local talent for its economy to reached optimum effectiveness. Brain drain has been a serious issue that haven't been able to solve. Furthermore, tertiary and technical skills are still in high demand. Although education level and the state's effort are helping to closing up the loophole, but there is still more to go to improve its current situation. Malaysia having a vision of transforming itself into a high income nation by year 2020. However, it is difficult to achieve in another 4 years' period if the GDP per growth cannot be surpassing and sustaining the 6% bench mark. Nevertheless, it is not an impossible mission if Malaysia can alter their potential through the development of financial sector and robust its economic growth. Furthermore, Malaysia is also known to be part of the ASEAN tigers which is known for its progressive GDP growth and potential global market. On this note, this study aims to investigate the relationship between financial development and economic growth in ASEAN.

The remainder of the chapter is organized as follows: next section presents a review of past studies on the relationship between financial development and economic growth. Subsequent section presents the data and description of variables as well as the methodology employs in this study. The last two sections offer the empirical findings and the discussion of the results of this study; follows by conclusion of this study.

LITERATURE REVIEW

In the context of theoretical literature, the possible correlation for financial sector and economic growth is largely debated. The interest of examining the possible linkage can be rooted back to the great depression of 1930 (Gertler, 1988). According to Gertler, Fisher's debt deflation is one of the theories that explain the factors which led to the great depression of 1930 and assume that the present of negative growth in the economic may be due to the collapse of the financial sector. The debt deflation theory postulated that when the economy faces deflation, excessive leverage loans becomes unmanageable. Thus, due to deflation, the net value fell and borrowers are forced to reduce current expenditures. This in turn leads to a negative influence on the business performance and subsequently led to a decline in productivity and economic backwardness. Meanwhile, Keynes's theory of investment shows that the cause of the great depression is caused by the collapse of confidence between borrowers and lenders which delay the whole process of funding from savers to investors. In addition, monetarists debated that the primary cause of the economic collapse is caused by a sharp decline in the money supply (Gertler, 1988).

According to Levine (2004), a well-functioning financial system which is sufficient to eliminate constraints that are faced by economic agents and thus increase the accumulation of capital needed for long-term economic growth. Levine adds that financial sector can improve technological innovation and entrepreneurs who have the best investment ideas will be selected in order to increase the allocation of resources and enhance productivity. However, based on the controversial argument by Robinson (1952), financial development does not affect causality on growth, instead, it only follows economic growth. Therefore, emphasis should be placed more on the development of the economic sectors that employ most of the population. Levine (1997) also believes that the development of economic sectors will leads to financial services demand that in turn will increase the growth of the financial system.

Although vast attention has been received regarding the financial and growth relationship, but there is a conflict of views on the role played by the financial system in economic growth. Different theory describes different relationship of finance and growth. Initial study of financial and growth nexus could be traced back to the study of Schumpeter (1911). Other earlier studies such as Robinson (1952), Solow (1956), McKinnon (1973), Shaw (1973), Levine (1991), King and Levine (1993), Lucas (1988), Deidda and Fattouh (2002) among others offer different observations on the role of finance towards the economic growth. Finance is seen as the drive engine for economic growth. For instance, Schumpeter (1911) advocates that the role played by financial development is important because it promotes economic growth. According to the great Schumpeter, the services that are provided by the financial sector are the key driver for innovation and the growth of an economy. Oppositely, finance has a negative effect towards economic growth. Besides, finance only has a small influence on economic growth or that finance is not significant in economic activities (Robinson, 1952; Solow, 1956; Lucas, 1988).

Over the years, a bulk of empirical studies on the financial and growth nexus has been carried out, with an impending attention on the developing countries context (Lee and Wong, 2005; Liu and Hsu; 2006; Perera and Paudel, 2009; Saaed and Hussain, 2015). Liu and Hsu (2006) analyse the correlation of finance and growth for Taiwan, Korea and Japan. The abovementioned authors find that the growth of economy is accelerated by high investment and high development of the stock market. Similarly, in the case of Kuwait and Australia, key driver for economic growth is the development of finance, international trade and lastly, a firm capital market (Saaed and Hussain, 2015; Nyasha and Odhiambo, 2015; Rahman, Shahbaz and Farooq, 2015). Similarly, Hassan, Sanchez and Yu (2011) conduct research to examine the role of financial development for economic growth in middle and low income countries. Panel regressions and time series proxy are used and it is discovered that positive relationship exist among the financial-growth nexus and the multivariate analysis finds that in the Sub-Saharan Africa and East Asia and Pacific region, unidirectional causality occur from growth to finance.

On the ASEAN platform, past empirical studies have also recorded mixed findings (Majid and Mahrizal, 2007; Jun, 2012; Zhang, Wang and Wang, 2012). For instance, Majid and Mahrizal (2007) illustrates that four different causality results are obtained in ASEAN. Firstly, causality does not occur

between financial and growth in Indonesia while one-way causality is found from finance to growth in Malaysia, which implies that finance leads to growth. Thirdly is the occurrence of bidirectional causality for finance-growth in Thailand and fourthly is the occurrence of unidirectional causality in Philippines with the converse direction arising from economic growth to finance development, therefore implying that an increase in the economy will lead to financial development.

As a developing economy, Malaysia has a long of potential in converging into a high performing economy (Choong and Lim, 2009). Evidence shows that with the right measures taken, there's a huge leap in long-run economic growth with the right performance from its financial systems (Ang, 2007). In summary, financial development led to economic growth in Malaysia (Tang and Tan, 2014); whereas in Vietnam, the same result applied (Anwar and Nguyen, 2011). The "Doi Moi" policy initiated in 1986 shows the importance in improving the performances of a financial system in Vietnam. Since then, Vietnamese financial system has made a consistent progress. Significantly, the GDP of Vietnam rises rapidly and overtaken other ASEAN nation, managed to place itself as ASEAN-6 largest economies. The mixed results illustrated by past studies motivates this research to embark on analysing the relationship between financial development and economic growth in Malaysia.

METHODOLOGY

The objective of the study is to examine the long-term and short-term relationship between financial development and economic growth in Malaysia from 1984 to 2013. Three types of research methods are adopted, namely Augmented Dickey-Fuller (ADF) unit root test which employed to test for stationary nature of different variables, Johansen cointegration test to check the existence of short term and long-term relationship between variables used and Granger causality test to determine the relationship direction for the different variables used. All data records are extracted from Global Financial Development and World Development Indicators. Real gross domestic product (GDP) is used as proxy to measure the economic growth. Meanwhile, four variables that are private credit to GDP, financial system deposits to GDP, liquid liabilities to GDP and lending-deposit spread are the proxy for financial development. Control variables such as consumer price index and ratio of government consumption to GDP are also added to the model. The model used is adopted from Rachdi and Mbarek (2011).

In this study, the regression model is specified as follows:

$$y_{it} = \beta_{0,i} + \beta_{1,i}F_{i,t} + \beta_{2,i}GV_{i,t} + \beta_{3,i}P_{i,t} + \mu_{it} \quad (1)$$

where:

y_{it} = Logarithm of real GDP per capita in country i and year t, which is the economic growth measurement;

$F_{i,t}$ = Measure of financial development;

$P_{i,t}$ = Consumer Price Index (CPI);

$GV_{i,t}$ = Logarithm of the ratio of government consumption to GDP; and

$\mu_{i,t}$ = Error term.

Many indicators have been suggested have been suggested as variables in the literature. However, due unavailability of certain indicators, four indicators are applying in the study which are private credit by deposit money banks and other financial institutions to GDP (PCDT), financial system deposits to GDP (FDEP), liquid liabilities to GDP (LLBT), and lending-deposit spread (LDEP). All indicators are calculated by using deflation method $((0.5) * (F_t / P_{et} + F_t - 1 / P_{et} - 1)) / (GDP_t / P_{at})$ where F is the measurement of financial development, P_e represent the end of period CPI and P_a is the average annual CPI. Although indicators are using the same deflation method but measurement for F is different, whereby it represents each indicator respectively, i.e., for private credit to GDP, F is credit to the private sector; for deposits to GDP, F is demand and time and saving deposits; and for liquid liabilities, F is liquid liabilities.

In initial step, stationary characteristic and integration order of time series variables needed to be checked before determine the nexus between financial development and economic growth. Therefore, in this study, Augmented Dickey-Fuller (ADF) unit root test is used to determine the stationary nature of the time series variables (Dickey and Fuller, 1979).

Johansen Cointegration Test

Johansen cointegration test intended to check the long run relationship between variables (Johansen and Juselius, 1990). Johansen cointegration test is implemented once the unit root tests are achieved. Due to different treatment of constant and trend term, critical values that are obtained in the test are different.

The model is defined as below:

$$\Delta y_t = \Pi y_{t-1} + \sum_{i=1}^{n-1} \Gamma_i \Delta y_{t-i} + \varepsilon_t, \quad (2)$$

where:

$$\Pi = \sum_{t=1}^n P_t - I, \quad (3)$$

and

$$\Gamma = - \sum_{j=i+1}^n P_t, \quad (4)$$

where:

$y_t = n \times 1$ vector of endogenous variables;

ε_t = Error term;

n = length; and

Δ = Difference operator.

In order to determine the long run effect between variables, two different likelihood ratio tests namely trace test and maximum eigenvalue test is used. The model for trace test is shown as:

$$j_{trade} = -T \sum_{i=r+1}^n \ln(1 - \lambda_i), \quad r = 0, 1, 2, \dots, n-1; \quad (5)$$

The hypothesis for likelihood ratio trace is:

$$\begin{aligned} H_0 : \text{rank}(\Pi) &= r, \\ H_a : \text{rank}(\Pi) &\leq r \end{aligned} \quad (6)$$

where number of sample is represented by T and λ_i is the largest eigenvalue of the Π matrix at i . The model for maximum eigenvalue test is shown as:

$$j_{\max} = -T \ln(1 - \lambda_{r+1}), \quad \text{Where } r = 0, 1, 2, \dots, n-1; \quad (7)$$

The hypothesis of maximal eigenvalue statistic is:

$$\begin{aligned} H_0 : \text{rank}(\Pi) &= r, \\ H_a : \text{rank}(\Pi) &= r + 1 \end{aligned} \quad (8)$$

where number of sample is represented by T and λ_{i+1} is the largest eigenvalue of the Π matrix at $i+1$.

For both Johansen likelihood-ratio tests, null hypothesis needed to be rejected when statistic value is greater than critical value. Conversely, when statistic value is lower than critical value, null hypothesis cannot be rejected which means null hypothesis is being accepted.

Granger Causality Based on Vector Error Correction Model (VECM)

Granger causality is used to study the causality connection between financial and growth. In order to determine the cointegration between variables either univariate, bivariate or no causality, Granger-causes can be used as a method. Unidirectional causality is said to exist when one hypothesis is rejected then one variable Granger-causes the other variable. As for bi-directional causality, it is said to exist when two variables Granger-causes to each other, which means both hypothesis has been rejected. Conversely, when all hypotheses are accepted, then it implies there is no causal link exists between the variables.

Vector Error Correction Model (VECM) is used in this study in order to avoid from misspecification problems if cointegration happens (Granger, 1988). VECM is used to investigate short run causality between variables. Short-run causality is based on F -test and χ^2 -test. Both tests can be established by performing joint test of the coefficients. Meanwhile, long-run causality can be

based on t-test whereby it is applied through the significance of the lagged error correction term (ECT) in VECM. The VECM for financial development and economic growth are as follow:

$$\Delta y_t = C_1 + \sum_{i=1}^n \beta_{11} \Delta y_{t-i} + \sum_{i=1}^n \beta_{12} \Delta f_{t-i} + \phi_1 X_{t-1} + \varepsilon_{y_t} \quad (9)$$

$$\Delta f_t = C_2 + \sum_{i=1}^n \beta_{21} \Delta y_{t-i} + \sum_{i=1}^n \beta_{22} \Delta f_{t-i} + \phi_2 X_{t-1} + \varepsilon_{f_t} \quad (10)$$

where Δ represents the operator of first difference; C_i and $\beta_{s,i}$ are denoted as estimated parameters, n is the optimum lag length and ε_{it} is the error term. In addition, ϕ_1 and ϕ_2 are the speed of adjustment coefficients, as well as reflecting the level of the adjustment towards long-term equilibrium. For X_{t-1} , it is known as lag ECT that derived from cointegration series (Enders, 2004; Demirhan et al., 2011). When value of β_{12} and X_{t-1} are not significantly different from zero, it shows that financial development does not Granger-cause economic growth. On the other hand, economic growth does not Granger-cause financial development when β_{21} and X_{t-1} equals to zero. (Enders, 2004).

RESULTS

Empirical results of the tests and interpretations are presented in this section. Table 1 shows the descriptive statistics used to describe and summarize the basic features of the data. Mean and median are used as measures of central tendency to identify the central position of the data while standard deviation is used to measure average amount which data points are different from the mean. Table 1 shows the summary of descriptive statistics of the variables used.

Table 1: Summary Statistics

Variable	Mean	Median	Max.	Min.	Std. Dev.	Skewness	Kurtosis
LNGDP	26.365	26.400	27.650	24.994	0.850	-0.129	1.777
FDEP	105.597	107.169	130.257	52.872	16.798	-1.243	4.741
LDEP	3.839	3.150	9.500	1.643	1.975	1.593	4.695
LLBT	115.005	116.698	139.080	61.572	16.836	-1.283	4.878
PCDT	104.835	103.297	155.248	67.500	20.868	0.370	2.926
CPI	76.457	78.187	107.117	51.756	17.923	0.105	1.762
LNGOV	2.539	2.549	2.815	2.279	0.123	-0.080	2.670

Notes: Max. = Maximum value, Min. = Minimum value, Std. Dev. = Standard deviation. FDEP = Financial System Deposits to GDP, CPI = Consumer Price Index, GOV = Government Consumption to GDP, LDEP = Lending-Deposit Spread, PCDT = Private Credit to GDP, LGDP = Natural log of Economic Growth, and LLBT = Liquid Liabilities to GDP.

Table 2: ADF Unit Root Test Results in Levels and First Difference

Variables	ADF Test Statistic		Decision on
	Level	First Difference	
LNGDP	-2.454 (0.3466)	-5.078 (0.0017)***	I(1)
FDEP	-2.162 (0.4919)	-4.998 (0.0022)***	I(1)
PCDT	-1.678 (0.7351)	-3.847 (0.0287)**	I(1)
LLBT	-2.227 (0.4579)	-4.219 (0.0127)**	I(1)
LDEP	-2.772 (0.2180)	-2.551 (0.3034)	I(1)
CPI	-3.332 (0.0811)*	-4.672 (0.0045)***	I(1)
LNGOV	-1.353 (0.8533)	-6.056 (0.0002)***	I(1)

Notes: ***, **, and * denote the significance level of 1%, 5%, and 10% respectively.
The number in parentheses represents P-value.

Table 2 presents the stationarity test result for all the variables. It is observed that at level, only one variable known as CPI is significant at 10% level. Whilst other 6 variables are non-stationary, or t-statistics are not significant at level, which means all 6 variables respectively contains a unit root. Henceforth, in order to obtain stationary variables, first differencing is performed. It is discovered that 4 variables that is LNGDP, FDEP, CPI and LNGOV are significant at 1% level while 2 variables that is PCDT and LLBT are significant at 5% level. Therefore, null hypothesis can be rejected which indicates that series variable is stationary or non-existence of unit root. The result suggest that variables are stationary at first difference and are integrated at order one, I(1). Since all variables are integrated at order one, I(1), therefore cointegration test is performed to test the existence of the cointegration relationship between GDP and each of the proxies for financial development by using Johansen's two different likelihood-ratio tests which are maximum eigenvalue and trace statistics.

Johansen Cointegration Test Result

Johansen cointegration test is performed to determine whether long-run relationship exists between variables of interest. Both trace test and maximum eigenvalue test are employed to gain results. The null hypothesis is non-cointegration against alternative hypothesis which is the existence of co-integration. Table 3 below presents the Johansen cointegration tests results.

Table 3: Cointegration Test Results for Trace Statistic and Maximum Eigenvalue Statistic

Null hypothesis	Alternative hypothesis	Test Statistics	0.05 Critical Value	Probability Value **
Trace Statistics				
$r = 0^*$	$r = 1$	181.5258	125.6154	0.0000
$r = 1^*$	$r = 2$	122.0492	95.75366	0.0003
$r = 2^*$	$r = 3$	78.86394	69.81889	0.0080
$r = 3$	$r = 4$	43.59140	47.85613	0.1188
$r = 4$	$r = 5$	20.21743	29.79707	0.4082
$r = 5$	$r = 6$	6.596575	15.49471	0.6250
$r = 6$	$r = 7$	0.194194	3.841466	0.6594
Max Eigen Statistics				
$r = 0^*$	$r = 1$	59.47656	46.23142	0.0012
$r = 1^*$	$r = 2$	43.18531	40.07757	0.0216
$r = 2^*$	$r = 3$	35.27254	33.87687	0.0339
$r = 3$	$r = 4$	23.37396	27.58434	0.1581
$r = 4$	$r = 5$	13.62086	21.13162	0.3969
$r = 5$	$r = 6$	6.402381	14.26460	0.5621
$r = 6$	$r = 7$	0.194194	3.841466	0.6594

Notes: * denotes rejection of the hypothesis at the 0.05 level

** MacKinnon-Haug-Mchelis (1999) p-values

From Table 3, it is observed that for trace statistic test and maximum eigenvalue statistic test, the statistic value is greater than the critical value for the first three hypotheses. Therefore, first three null hypotheses cannot be rejected which means three null hypotheses $r = 0$, $r = 1$ and $r = 2$ are being accepted. The results show that variables are cointegrated and significant at 5% significant level. Overall, it can be concluded that both tests indicate the presence of 3 cointegration equation at 5% significant level and there exists a long run relationship between economic growth which proxy by GDP, financial development variables which represent by FDEP, PCDT, LLBT and LDEP, and also control variables such as CPI and GOV.

Granger-Causality Result Based on Vector Error Correction Model (VECM)

Three types of relationship can be determined by using Granger causality that is two-way causality which known as bidirectional, one-way causality which known as unidirectional and also no causality. Since cointegration relationship exists among the variables, therefore causality direction needed to be found among finance growth indicators. In order to determine the causality direction of databases for finance growth nexus, Vector Error Correction Model (VECM) of Wald test is employed. VECM is applied to indicate the causality direction which is long run causality and short run causality.

Table 4: Long Run Causality

Dependent Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LNGDP)	0.329107	0.151713	2.169270	0.0445**
D(FDEP)	2.259980	2.298220	0.983361	0.3392
D(LDEP)	-0.232042	0.106613	-2.176475	0.0439**
D(LLBT)	-4.500583	2.372525	-1.896959	0.0750
D(PCDT)	0.448995	0.315714	1.422156	0.1731
D(CPI)	-0.284004	0.091265	-3.111849	0.0063**
D(LNGOV)	-0.163469	0.220928	-0.739918	0.4694

Notes: ** denote the significance level of 5%.

Table 4 shows the result of long run causality in the case of Malaysia. Error correction term (ECT) is consider to be good when it possesses three conditions, that are coefficient of ECT should be ranged between zero to one, the number of ECT should be in negative sign and it is significant at 5 percent level. The results show that only three dependent variables that are LDEP, CPI and LNGOV fulfil the requirements, which respective coefficient is ranging between zero to one and possess negative sign. However, only probability of LDEP and CPI respectively is significant at 5 percent level of significance. Therefore, this implies that there is long run causality running from independent variables to LDEP and CPI respectively. This means that independent variables have influence on the dependent variable such as LDEP and CPI in the long run. Apart from LDEP and CPI, there is no long run causality among other five variables.

In order to test short run causality between variables, Wald test is applied and causality results are show in Table 5. Firstly, null hypothesis of LNGDP does not Granger-cause LLBT is being rejected at 5 percent significant level as probability of LNGDP that is 2.31 percent is less than 5 percent level of significant. Thus, this indicates the occurrence of short run causality from LNGDP to LLBT. Similarly, the null hypothesis of LNGDP does not Granger-cause PCDT is being rejected. In other words, LNGDP does Granger-cause PCDT which indicate short run causality from LNGDP to PCDT. Hence, it can be said that LNGDP has unidirectional causality with LLBT and PCDT respectively.

Table 5: Short Run Causality

Dependent Variable	D(LNGDP)	D(FDEP)	D(LDEP)	D(LLBT)	D(PCDT)	D(CPI)	D(LNGOV)
X²-Statistics							
D(LNGDP)	-	0.862138 (0.3531)	0.433853 (0.5101)	0.785720 (0.3754)	1.633505 (0.2012)	0.669122 (0.4134)	0.006969 (0.9335)
D(FDEP)	3.343415 (0.0675)	-	1.880986 (0.1702)	1.379222 (0.2402)	0.631300 (0.4269)	0.116506 (0.7329)	0.689776 (0.4062)
D(LDEP)	0.784378 (0.3758)	0.036540 (0.8484)	-	0.209048 (0.6475)	1.752855 (0.1855)	4.031235 (0.0547)	3.923075 (0.0476)**
D(LLBT)	5.160913 (0.0231)**	2.019530 (0.1553)	1.941141 (0.1635)	-	0.951591 (0.3293)	0.059137 (0.8079)	0.369673 (0.5432)
D(PCDT)	9.043222 (0.0026)**	3.131964 (0.0768)	1.133705 (0.2870)	3.020171 (0.0822)	-	0.466875 (0.4944)	0.500774 (0.4792)
D(CPI)	2.468693 (0.1161)	7.025067 (0.0080)**	0.060418 (0.8058)	7.076148 (0.0078)**	0.284536 (0.5937)	-	0.031639 (0.8588)
D(LNGOV)	0.318453 (0.5725)	0.040726 (0.8401)	0.679873 (0.4096)	0.009214 (0.9235)	0.825040 (0.3637)	1.256612 (0.2623)	-

Notes: ** denote the significance level of 5%.

The number in parentheses represents P-value.

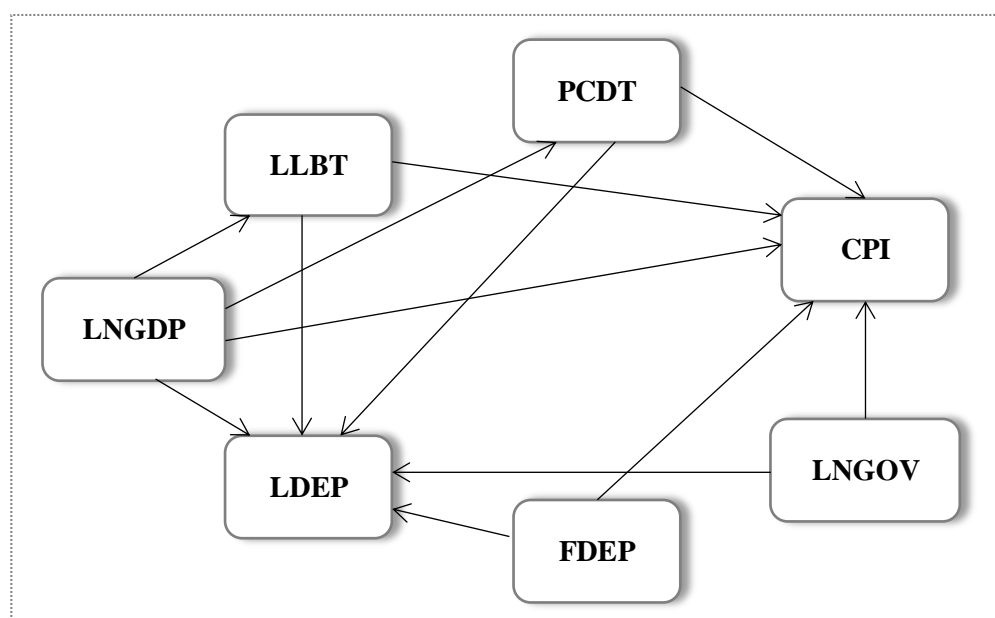


Figure 1: Granger Causality Direction.

Besides, there is also unidirectional causality from FDEP to CPI whereby null hypothesis which states FDEP does not Granger-cause CPI is being rejected and there is short run unidirectional

causality from LLBT to CPI. In other words, LLBT does Granger-cause CPI which means LLBT has influence on CPI. There is also short run causality from LNGOV to LDEP whereby alternative hypothesis that is LNGOV does Granger-cause LDEP cannot be rejected at 95 percent confidence level. As a whole, Ganger causality directions is shown in Figure 1. For LNGDP, there exist four unidirectional causalities that is from LNGDP to LLBT, PCDT, CPI and LDEP. Besides that, there are four variables which are LLBT, PCDT, FDEP and LNGOV respectively show same unidirectional causality direction to LDEP and CPI.

DISCUSSION

The aim of this study is to examine the nexus between financial development and economic growth in Malaysia. Overall, there exists cointegration among the variables from cointegration test results and it is proven in VECM. Results show that economic growth (LNGDP) can influence liquid liabilities (LLBT), private credit (PCDT), lending-deposit spread (LDEP) and consumer price index (CPI) in one-way causality. Conversely, there is no causality exists from the variables of financial development to economic growth.

Results of the study shows unidirectional causality from GDP to liquid liabilities, and later from liquid liabilities to lending-deposit spread and consumer price index respectively. This means that GDP play an important role in the real sector of Malaysia as it increases liquid liabilities. This finding is consistent with the study of Handa and Khan (2008) as well as Abu-Bader and Abu-Qarn (2008). Conversely, no causality exists from liquid liabilities to GDP in Malaysia. This may due to Malaysian residents prefer to keep deposits with financial institutions rather than using funds to expand their business plans which eventually may help in economic growth. Finding result of Handa and Khan (2008) for Pakistan and Jamil (2010) shows that liquid liabilities do not have casual nexus with economic growth.

There exists unidirectional causality between private credit and GDP which causality direction running from GDP to private credit at 5 percent level of significance, then from private credit to lending-deposit and consumer price index respectively. The finding of unidirectional causality from GDP to private credit is consistent with those past studies such as study of Handa and Khan (2008), Shan and Morris (2002), Hassan, Sanchez, and Yu (2011) as well as the study of Rehman and Cheema (2013). However, no causality occurs from private credit to GDP in Malaysia which means that private credit does not affect economic growth. This may due to the reason that less financing investment projects are extended by private sector so credit is less contributing in economic growth and development.

Next, the findings show that in Malaysia, unidirectional causality happens from GDP to lending-deposit spread but no causality from lending-deposit spread to GDP. This finding is consistent with the study of Saymeh and Abu Orabi (2013) and Mushtq (2016) for Pakistan whereby GDP Granger-cause lending-deposit spread but lending-deposit does not have causality towards GDP. In Malaysia, only unidirectional causality occurs from GDP to lending-deposit which shows that economic growth has a major impact on lending and deposit activities of banks. The growing

economy of Malaysia may increase the lending-deposit as small and medium enterprises and also investor will perform lending-deposit from banks or financial institutions for investment purpose.

The results also show that no causality exists between GDP with financial system deposits in Malaysia. Finding of the result is consistent with the study of Kumar and Chauhan (2015) whereby the study concluded that there is no relationship between bank's deposits and economic growth in India. No causal effect occurs between financial system deposits and economic growth in Malaysia which may be due to Malaysia's financial system does not act as an efficient financial intermediary that in turn causing resources does not effectively allocate to the most productive uses; hence economic growth cannot be improved. However, study found that in Malaysia, a unidirectional causality running from financial system deposit to lending-deposit spread and consumer price index respectively. This suggests that when financial system deposits increase, lending-deposit spread may be improved because lending-deposit markets are able to encourage consumers to borrow fund from banks for personal use or investment purpose, hence indirectly affect consumer price index.

Granger because results shows mixed findings of the causal relationship between GDP and the control variables. The results indicate the existence of unidirectional causal relationship between GDP and CPI in Malaysia which running from economic growth to consumer price index. The results are same with the findings of those Gokal and Hanif (2004), Datta and Mukhopadhyay (2011), and Shailender and Amar (2015). There is also no causality link between government consumption expenditure with economic growth but government expenditure does Granger cause lending-deposit and consumer price index respectively. The finding is consistent with those studies of Bagdigen and Centintas (2003) and Ergun and Tuck (2006) for five South East Asian countries whereby these two studies found that no causal link runs either unidirectional or bidirectional between economic growth and government consumption expenditure.

CONCLUSION

This study examines the causal relationship between financial development and economic growth in Malaysia for the period of 1984 to 2013 using time series techniques which are unit root test, Johansen cointegration test and Granger causality based on VECM. Unit root test results show that all variables are integrated at first difference. While for cointegration test, the results revealed that there are three cointegration vectors and long run nexus is existing between financial development and economic growth. Next, Granger causality test based on Vector Error Correction Model (VECM) has been carried out.

According to empirical results, there is a relationship between economic growth and financial development for the periods of 1984 to 2013. Results suggest that there exists causal nexus from economic growth to liquid liabilities, private credit, lending-deposit spread and consumer price index in Malaysia. The result is consistent with the studies of Handa and Khan (2008), Hassan, Sanchez and Yu (2011), Saymeh and Abu Orabi (2013) and Shailender and Amar (2015) which found that economic growth have effect on financial development variables in several countries. From the result, it shows that unidirectional causality happened from economic growth to financial development thus implies

that economic development is important for the development of financial. It can be said that economic growth is accountable for the financial development in Malaysia. Therefore, more economic development policies needed to be introduced and implemented. For example, governments can place special prominence on implementing policies that result in the deepening of financial markets, including institutional and legal measures to strengthen creditor and investor rights and contract enforcement. Indirectly, by fostering the development of a country's financial sector, Malaysia's economic growth will also be accelerated.

In Malaysia, economic growth can be used as the policy variable to generate financial development in the economy. In order to maintain sustainable growth of economy, government should deepen the financial sector and take necessary steps to strengthen nexus between financial development and economic growth. For instance, more financial integration should be included; intervention by government should be reduced in the financial systems, increases financial institutions status and others. In addition, government should also focus on long-run policies and provides a favourable environment for private sector to grow in order to enhance the financial sector. Therefore, initiatives should be maintained with care by government as it not only will affect the finance-growth relationship but also development of socio economy in Malaysia. Overall, Malaysian financial systems need to be restructured in order to become more effective and efficient as well as able to perform its functions so as to lead economic growth in future.

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