Comparative study on finance-growth nexus in Malaysia and Indonesia: Role of institutional quality

Kazi Sohag
Graduate School of Economics and Management, Ural Federal University, Russian Federation

S. M. Riad Shams
Newcastle Business School, Northumbria University, UK

Normah Omar
Accounting Research Institute, Universiti Teknologi MARA, Malaysia

Grahita Chandrarin
Univertas Merdeka Malang, Indonesia.

Abstract

The impact of financial development (FD) on economic growth in the context of Malaysia and Indonesia has been examined in this study regarding the role of the financial crisis and strategic changes in the institutional setup. Autoregressive Distributed Lags (ARDL) and Threshold Regression were applied, and time series data were analysed for the period between 1984 and 2017 revealing that FD promoted the economic growth in both economies during this period. A non-linear analysis also revealed that FD and economic growth follow an inverted U-shape relation in the case of Malaysia whereas, in Indonesia, it followed a U-shape relation. It was discovered that not all measures of FD promote economic growth. For instance, market capitalisation was profound in the Malaysian economy while credit to the private sector and money supply was conducive for the Indonesian economy. The analysis demonstrated that the Asian and global financial crisis adversely affected economic growth in the case of Indonesia due to poor institutional quality, whereas in Malaysia it was relatively safe from the adversity brought about by the financial crisis due to the presence of institutional quality and good corporate governance. However, a positive change in institutional quality was found to have a much greater impact on augmenting economic growth rather than playing a mediating role in connection with FD and economic growth in Malaysia. In the context of Indonesia however, institutional quality was found to impede economic growth but played a positive and significant mediating role in the nexus of FD and economic growth. The spill-over analysis revealed that Malaysian FD is positively associated with Indonesian economic growth while Indonesian FD is negatively associated with the Malaysian economy. This study provided all economic and anecdotal explanations in supporting the results of this study.

Keywords: Financial Market Development; Economic Growth; Governance; ARDL; Spill-over; Financial Crisis.

JEL: B22, B26, C50, C22

1. INTRODUCTION

While the nexus between financial development and economic growth has been extensively studied during the last few decades, the results are comparatively inconclusive. There are four strands of literature that focus on finance-growth nexus. The first strand mainly states the critical functioning of finance in accelerating growth introduced by Schumpeter (1934). This view was later supported by Gurley and Shaw (1955), McKinnon (1973) and Shaw (1973). Whereas, Levine (1998) argued that the primary role of financial development (FD) is to allocate resources into the most productive sector and Goodhart (2004) argued that financial market development reduces frictions in the market. For instance, decreasing transaction and information costs contribute to financial investment and economic growth.

The functional role of FD is to promote investment and economic growth by facilitating the most productive allocation of resources (Levine, 1998). Recent studies document the positive role of FD in promoting economic growth (Levine, 1999; Wachtel, 2001; Fink, Haiss & Vuksic, 2005; Christopoulos & Tsionas, 2004; Dawson, 2008; Menyah et al., 2014). The literature also posits the insignificant role of FD in promoting economic growth (Lucas, 1988; Stern 1989). Here, Xu (2000) argues that the absence of FD is merely an appearance of the absence of demand for financial services. Additionally, the demand for FD is merely the proportionate pace of real sector development. Therefore, this notion merely implies that FD follows economic growth.

The second strand of literature posits that the relationship between FD and economic growth follows a non-monotonic shape. Cecchetti and Kharroubi (2012) document that finance can be detrimental towards economic growth when bank credit to the private sector exceeds 90% of GDP. The downward relation between finance and growth can also be explained by the fact that the financial sector competes for resources with the rest of the economy (Samargandi et al., 2015). An inverted U-shaped relation has also been reported by Arcand et al. (2012), observing that once the ratio of private credit to GDP exceeds a threshold of around 110%, finance becomes a burden on economic growth for high-income countries. Whereas, Samargandi et al. (2015) observed an inverted U-shaped relation between finance and growth in the long-run for middle-income countries. Similarly, Soedarmono et al.

(2017) reported that too much disbursement of consumption credit from the financial sector is detrimental to economic growth.

The third strand of literature contends that the impact of financial market development on economic growth is conditional with institutional quality (Kutan et al., 2017; Knack & Keefer, 1995; Hall & Jones, 1999; Rodrik et al., 2002; Klomp & de Haan, 2014; Bonnal & Yaya, 2015; Shams, 2016a, 2016b, 2016c). On the other hand, Kutan et al. (2017) contend that FD along with sound institutional quality facilitates to gaining a reasonably safe rate of return. Likewise, well-functioning financial institutions reduce agency problems through careful monitoring (Aghion et al., 2009). Further, some studies have documented that the potential outcome from FD is primarily determined by the quality of financial regulation and the rule of law (Arestis & Demetriades, 1997; Demetriades & Andrianova, 2003). Thus, it is important to contextualise the governance or institutional quality in FD and the assessment of economic growth. However, FD fails to promote economic growth given the degree of malpractice in the banking sector and often political intrusion, which may distract credit to unproductive or even wasteful activities (Kutan et al., 2017).

Similarly, institutional quality is more crucial in the context of Malaysia and Indonesia as some studies argue that the Asian financial crisis occurred from the weakness of legal institutions regarding governance (Johnson et al., 2000). It is also argued that by ensuring an effective mechanism, it reduces agency conflicts involving managers by emphasising the legal mechanism that protects the minority of shareholders (Shleifer & Vishny, 1997). Although, in this case, it was predominantly in the depreciation of the exchange rate and stock market decline in Malaysia and Indonesia between 1997 and 1998. Previous studies also contend that the Asian financial crisis occurred because of macroeconomic and banking issues. Although, the standard Washington view attributes the Asian crisis to inappropriate macroeconomic policy during the 1990s, which made worse by the inept management of the initial depreciation in 1997 (Greenspan, 1998; Corsetti et al., 1999). Thus, institutional quality or proper management would possibly have mitigated the adversity of the financial crisis.

The fourth strand of literature which is a relatively new area of thought, argues that FD has a spill-over effect with financial and trade integration (Samargandi & Kutan, 2016). Also, with the rapid pace of globalisation, the banking and financial sector has subsequently become interconnected across most countries. In this case, financial integration would eliminate the restrictions on cross-border capital flows and improve the access of foreign

investors to the domestic financial system. However, the dark side of financial integration is that it could cause a spillover of the financial crisis among partner countries (Samargandi & Kutan, 2016).

The focus of this study on Malaysia and Indonesia because of several reasons. First, during the past few decades, Malaysia and Indonesia have experienced a notable reformation concerning liberalisation in the financial sector (see, among others, Ben Naceur *et al*., 2008). Malaysia has evolved as a leading country in the developing world coupled with significant improvement in FD (Ang, 2009). The reforms in Malaysia include different aspects, e.g. lifting government restrictions on the banking system regarding interest rate ceilings, launching credit programmes, and high reserve requirements; those aspects improve FD and in turn economic growth. In addition, the decline in the lending rate from 12.95 in 2011 to 11.3 per cent in 2012 by the commercial banking sector increased domestic credit to the private sector. Subsequently, the reforms in the financial sector increased the confidence of foreigners and foreign direct investment increasing from $40.47 billion in 2011 to $48.57 billion in 2012.

Therefore, founded on the above discussion, the researcher is motivated towards examining the impact of FD on growth by considering all four train-of-thoughts regarding the financial development-growth nexus in the context of Malaysia and Indonesia. As the initial step, the dynamic impact of overall FD on economic growth is assessed followed secondly by assessing whether FD and economic growth follow any non-monotonic relation or not. Third, assessing whether the quality of governance plays any moderating role in FD and economic growth nexus and fourth, structural break analysis is used to capture the two main financial crisis periods. That is the Asian financial crisis in 1997 and 1998 and the global financial crisis that occurred in 2007. Lastly, the spill-over effect of FD on economic growth is assessed between Malaysia and Indonesian.

This study further contributes to the empirical literature on FD and economic growth by contextualising three aspects. First, it considers the role of institutional quality in explaining the FD-economic growth relationship in the context of Malaysia and Indonesia. Second, it highlights the potential role of FDI in determining the FD-growth nexus and third, the study applies an advanced technique for investigating the issue. Further, the Asian and global financial crisis in the analysis is contextualised as an alternative measure of FD. More specifically, it considers autoregressive distributed lags (ARDL) and Structural break based

cointegration frameworks, which can address the potential serial correlation and other estimation biasedness. Notably, this method has not been used before in analysing the relationship between FD and economic growth in Malaysia and Indonesia.

2 METHODOLOGY

2.1 Data and sources

The impact of FD and economic growth is examined by incorporating several control variables, namely GDP per capita (GDPC), general government expenditure share of GDP (GOV), fixed capital formation (FCF) and trade openness (TO) comes from the World Development Indicator (WDI). All series were then converted into the natural logarithm format. As for the FD measures, the most common indicators found in the literature that were used included domestic credit to the private sector by banks and other financial institutions as a percentage of GDP (Credit), the liquid liabilities of the financial sector as a percentage of GDP (M2), and market capitalisation (MC). Finally, an FD development index was constructed from three ingredients; Credit, M2 and market capitalisation by using principal component analysis (PCA). The financial crisis dummy (FC), was generated where 1 indicated a crisis period and 0 indicated a non-crisis period.

The Asian financial crisis between 1997 and 1998 and the global financial crisis between 2007 and 2008 was mainly captured employing the above approach. All data were obtained from the WDI, and the institutional quality (IQ) data from an international country risk guide (ICRG) was also considered. The institutional quality index consisted of three indicators, namely corruption, law and order, and bureaucracy quality (Charron et al., 2010). Institutional quality in this context can be defined as impartial government institutions, implying that public officials who execute policies do not take anything concerning the citizen/case into consideration that has not already been stipulated in the policy or the law (Teorell et al., 2016).

2.2 Estimation techniques

The ARDL bounds testing approach of Pesaran et al. (2001) was employed in this study to cointegration that overcomes the limitations of the Ganger causality test of Engle and Ganger (1987), and the cointegration test of Johansen (1988, 1991) regarding the order of integration of variables and the inability to provide both short and long-run dynamics. Furthermore,

Pesaran et al. (2001)'s process allowed for the examination of the long-run cointegrating relations and dynamic interactions among the variables which provided important leverage in the estimation process. This included (i) estimating the cointegration relation using the OLS method after choosing the lag order of the model; (ii) in contrast to Johansen and Jesulius (1990) procedure, this test procedure is deemed appropriate irrespective of the order of integration, (i.e. I(0) or I(1) or mutual cointegration)), and (iii) the test is competent in the small and finite data size.

$$\Delta LGDPC_t = \beta_0 + B_1 LGDPC_{t-1} + B_2 FCF_{t-1} + B_3 GOV_{t-1} + \beta_4 TO_{t-1} + \beta_5 FD_{t-1} + \sum_{i=1}^{p} \gamma_i LGDPC_{t-i} + \sum_{j=1}^{p} \delta_i FCF_{t-j} + \sum_{l=1}^{p} \zeta_i GOV_{t-l} + \sum_{m=1}^{p} \zeta_i TO_{t-m} + \sum_{n=1}^{p} \zeta_i FD_{t-n} + \varepsilon_t \quad (01)$$

At first, Equation 01 under the OLS approach was estimated, followed by testing the null hypothesis of no cointegration among the variables (H_0: $\beta_1 = \beta_2 = \beta_3 = \beta_4 = 0$), against the alternative hypothesis of cointegration among the variables (H_a: $\beta_1 \neq \beta_2 \neq \beta_3 \neq \beta_4 \neq 0$). The computed F-statistics were next evaluated regarding the critical value (upper and lower bound) of Pesaran et al. (2001). Accordingly, if the f-statistic is found to be greater than the upper critical value, it indicates the existence of cointegration and vice-versa. While F-statistic within the upper and lower bounds indicates an inconclusive cointegrating decision.

After establishing the cointegrating relation among the variables, the long-run coefficient of the ARDL framework was estimated using Equation 02. Here Schwarz Bayesian criterion was used to select the appropriate lag length of the ARDL model for all variables. Finally, Equation 03 was estimated for short-run or error correction coefficients.

$$\ln GDPC_t = \beta_0 + \sum_{i=1}^{p} \gamma_i \ln GDPC_{t-i} \sum_{j=0}^{q1} \delta_j FCF_{t-j} + \sum_{l=0}^{q2} \varphi_l GOV_{2t-l} + \sum_{m=0}^{q3} \eta_m TO_{t-m} + \sum_{r=0}^{q4} \psi_r \ lnFD_{t-r} + \varepsilon_t \quad (02)$$

$$\Delta \ln GDPC_t = \beta_0 + \sum_{i=1}^{p} \gamma_i \, \Delta \ln GDPC_{2t-i} \sum_{j=1}^{q} \delta_j \Delta FCF_{t-j} + \sum_{l=1}^{q} \varphi_l \Delta GOV_{2t-l} + \sum_{m=1}^{q} \eta_m \Delta TO_{t-m} + \sum_{r=1}^{q} \psi_r \Delta lnFD_{t-r} + \vartheta emc_{t-1} + \varepsilon_t \quad (03)$$

Additionally, the cumulative sum of recursive residuals (*CUSUM*) was executed, and the cumulative sum of squares of recursive residuals (*CUSUMSQ*) was executed to check the stability of the estimated parameters in the spirit of Pesaran and Shin (1998).

3 RESULT AND DISCUSSIONS

3.1 Order of integration

Before the primary analysis was performed, the order of integration of the variables under consideration was examined. Identifying the order of integration of each series is important in selecting the estimation approach. Table 1 depicts the results displaying the GDP per capita (LGDPC), fixed capital formation (FCF), government expenditure (GOV), trade openness (TO), financial development (FD), and credit to private sector (CRD) are non-stationary at the level for both Malaysia and Indonesia. Here, all the variables are found to be stationary after taking the 1st difference. Money supply (M2) is shown to be stationary at level but stationary following the 1st difference for Malaysia but non-stationary for Indonesia at level. Market capitalisation (MC) non-stationary at the level for Malaysia but is stationary at level for Indonesia. Lastly, quality of governance (QOG) is non-stationary at level but stationary after considering the 1st difference for both countries. Therefore, the analysis of the order of integration endorses the application of ARDL approach.

[Insert Table 1 about here]

3.2 Finance and economic growth: Linear analysis

At this stage, the dynamic impact of FD on economic growth is analysed incorporating the role of several core control variables in which Table 2 depicts the result. The coefficient of error correction coefficient (ECM) is negative and significant for both countries. Precisely it indicates that after an economic shock the adjustment takes place; 70% for Malaysia and 29.9% for Indonesia towards long-run equilibrium. The positive and significant coefficient of FD indicates that FD can significantly promote economic growth in both the Malaysian and Indonesian economy. The coefficient of FD is found to be insignificant in the short run for

both countries. Regarding the control variables, FCF positively and significantly spurs the economic growth of Malaysia where FCF is insignificant in explaining the economic growth in Indonesia. Interestingly, FCF plays a key role in promoting economic growth in the short-run for both economies. Likewise, trade openness appears to be a driving factor in promoting economic growth for Malaysia but is detrimental for Indonesia in the long-run for the economy. Therefore, the diagnostic test confirms that the proposed model is robust concerning serial correlation, heteroscedasticity, and autocorrelation and model specification. Our model is also consistent as per *CUSUM* and *CUSUMSQ* figures (See Figure 1)

Nevertheless, economists continue to hold diverse opinions and views on the relationship between FD and economic growth. During the past few decades, FD and economic growth nexus have been significantly re-evaluated, yet it remains a controversial issue. In fact, the importance of FD can be dated back to Schumpeter (1911), who argued that financial intermediaries are essential to spur economic development. Indeed, this was endorsed by Goodhart (2004), who stated that a deepening financial infrastructure reduces frictions in the market by lessening the transaction and information costs. Consequently, it promotes investment, which leads to augmented economic growth.

Notably, the functional role of FD is to promote investment and economic growth by facilitating the most productive allocation of resources (Levine, 1998). In this process, FD works in a supportive role to provide liquidity to firms by efficiently exploring new capacities. Therefore, FD promotes the establishment and expansion of the institutions, financial instruments and markets that enhance investment and the growth process. However, despite the plausible role of FD, the overall outcome from FD cannot be generalised across all countries given country-specific economic structures and institutional quality (Al-Yousif, 2002; Law *et al.*, 2013).

[Insert Table 2]

[Insert Figure 1]

3.3 Finance and economic growth: Non-linear analysis

At this stage, the model is re-estimated corroborating the non-linearity issue (refer to Table 3). Here, the quadratic term of FD is incorporated into the model to examine whether FD and

economic growth follow any non-monotonic relationship in both countries; Malaysia and Indonesia. As anticipated, the coefficient of ECM is found to be negative and significant for both countries. Interesting, Table 3 depicts that the coefficient of FD is negative and significant while the quadratic term of FD (FD^2) is positive and significant in explaining economic growth indicating a U-shaped relationship between FD and economic growth in Malaysia and Indonesia. The U-shape between FD and economic growth holds in short for Indonesia. However, the coefficients of FD and FD^2 are insignificant in the short-run in the case of Malaysia. Therefore, the model is consistent concerning serial correlation, heteroscedasticity, and autocorrelation and model specification. Our model is also consistent as per *CUSUM* and *CUSUMSQ* figures (See Figure 2)

[Insert Table 3 about here]

[Insert Figure 2]

3.4 Decomposed indicators of financial development and economic growth

The model is further re-estimated by considering every single indicator of FD as seen in Table 4. Here, the negative and insignificant coefficient of domestic credit to the private sector indicates that it significantly influences economic growth in Malaysia in both the long- and short-run. Similarly, money supply is found to be insignificant in order to explain economic growth in the long- and short-run in the context of the Malaysian economy.

Interestingly the positive and significant coefficient of market capitalisation implies that it fosters economic growth in the long-run economy. However, the impact of market capitalisation is inconclusive in influencing economic growth in Malaysia. Also, as shown, in the context of Indonesia, concerning credit to the private sector and money supply, both coefficients are shown to be positive and significant. This finding indicates credit to the private sector, and money supply is driving factors in accelerating economic growth in Indonesia in the long-run. Although, market capitalisation appears to be insignificant towards the economic growth in the long run economy of Indonesia. Also, market capitalisation is detrimental to economic growth in the short-run economy of Indonesia. In all models, the coefficients of error correction are negative and significant. Although, our models are consistent in the case of heteroskedastic autocorrelation and serial correlation in which our model is a specification.

[Insert Table 4 about here]

3.5 Financial development-economic growth nexus: Role of institutional quality

At this stage, the role of FD and economic growth nexus is examined by incorporating the role of institutional quality. In the prior section, it was argued that institutional quality plays an important role in the linkage of FD and economic growth in which Table 5 depicts the result. The negative and significant coefficient of error correction confirms the long-run cointegrating relationship between the dependent variable and independent variables. The coefficient of FD is also shown to be insignificant in the long-run in the Malaysian economy, whereas the coefficient of FD is negative and significant towards economic growth. Interestingly, the coefficient of institutional quality is found to be highly positive and is therefore significant in explaining the economic growth of Malaysia in the long-run. Although, the negative and significant coefficient of institutional quality indicates that it is detrimental to economic growth in the long-run of the Indonesian economy. Besides, the interactive effect of FD and institutional quality is found to be positive and significant in accelerating the economic growth of Malaysia in the long-run.

[Insert Table 5 about here]

3.6 Financial development spill-over effect

The spillover effect was then measured from one country to another country. It is argued that Malaysia and Indonesia are integrated through financial and trade integration. Therefore, it is anticipated that any fiscal policy within one country can have a spillover effect on another country. In doing, the FD of Indonesia is incorporated into the Malaysian model and vice versa. Interestingly, in this case, the coefficient of FD is found to be negative towards

Malaysian economic growth. This finding implies that if FD occurs in Indonesia it which is negatively associated with economic growth in Malaysia. In contrast, if FD occurs in Malaysia, it is positively associated with Indonesian economic growth in the long-run. These findings can be explained in that a considerable amount of labour from Indonesia is employed in Malaysia. Therefore, one can argue that any FD in Malaysia creates more job opportunities for foreign labour including Indonesia labour. Whereas, if FD occurs in Indonesia that can enhance the investment, in Indonesia it will eventually create more job opportunities for the local labour market which may be detrimental to the economic growth of Malaysia. The coefficient of error correction also appears to the negative in this case, and is significant for both models; confirming the long-run cointegrating relationship between the dependent and independent variables.

[Insert Table 6 about here]

3.7 Asian and Global Financial Crisis and Economic Growth

In the previous section, it was argued that the financial crisis is obstructing economic growth. In this section, this argument is empirically tested in order to verify this argument. A financial crisis dummy (FC) is generated, where 1 indicates the crisis period and 0 indicates the non-crisis period. The Asian financial crisis between 1997 and 1998 and the global financial crisis between 2007 and 2008 is predominantly captured. The negative and insignificant coefficient is where the financial crisis (FC) indicates that the Malaysian long-run economic growth was not obstructed by the Asian and global financial crisis (refer to Table 7).

However, the coefficient of FC appears to be negative and significant in the case of Indonesia. This finding indicates that the Asian and global financial crisis impedes economic growth in the long- and short-run in Indonesia. The results can be explained because the

institutional quality and corporate governance is relatively strong in Malaysia compared to Indonesia, which may protect the Malaysian economy from the adversity resulting from the financial crisis. Moreover, the percentage of institutional shares in the stock market of Malaysia is seen to be higher compared to individual shareholders, which also functions as a defensive measure in projecting the financial crisis.

[Insert Table 7 about here]

Robustness Check:

Given the fact that there were a number of structural breaks over the period between 1984 and 2017 (e.g. the Asian financial crisis in 1997, and the global financial crisis in 2007). Accordingly, a unit root test was applied with a structural break as suggested by Zivot–Andrews (2002). The test is appropriate if the series shows a potential structural break. The test was conducted under three possible alternatives as modelled below.

$$\Delta X_t = a + ax_{t-1} + bt + cDU_t + \sum_{j=1}^{k} d_j \Delta X_{t-j} + \mu_t \ldots\ldots\ldots\ldots\ldots\ldots (04)$$

$$\Delta X_t = b + bx_{t-1} + ct + bDT_t + \sum_{j=1}^{k} d_j \Delta X_{t-j} + \mu_t \ldots\ldots\ldots\ldots\ldots\ldots (05)$$

$$\Delta X_t = c + cx_{t-1} + ct + dDU_t + dDT_t + \sum_{j=1}^{k} d_j \Delta X_{t-j} + \mu_t \ldots\ldots\ldots\ldots\ldots\ldots (06)$$

Where the dummy variables indicated by DU_t show a mean shift at each point with a time break, while DT_t shows the time break for each variable. So, DU_t = 1…if t > TB or 0...if t < TB. Moreover, DU_t = t-TB...if t > TB or 0...if t < TB. The null hypothesis of unit root break date c = 0 indicates that the series is not stationary with a drift or having information about the structural breakpoint. While c < 0 hypothesis implies that the variable is found to be stationary with one unknown time break.

Zivot-Andrews (2002) unit root test considers all potential break points and estimates them successively and finally selects the break when $\hat{c}(=c-1)=1$ from the region where the

end points of the sample period are excluded. Importantly, the Gregory-Hansen (1996a & 1996b) framework is applied for cointegration which considers the single endogenous structural breaks. Gregory and Hansen (1996a & 1996b) propose three different models with variant assumptions.

Model: level shift with a trend

$$Y_t = \mu_1 + \mu_2 f_{tk} + \beta_1 t + \alpha_1 X_t + \varepsilon_t \ldots\ldots\ldots (08)$$

Model: Regime shift where intercept and the slope coefficients change

$$Y_t = \mu_1 + \mu_2 f_{tk} + \beta_1 t + \alpha_1 X_t + \alpha_2 X_t f_{tk} + \varepsilon_t \ldots\ldots\ldots (09)$$

Model: Regime shift where intercept, slope coefficients and trend change

$$Y_t = \mu_1 + \mu_2 f_{tk} + \beta_1 t + \beta_2 t f_{tk} + \alpha_1 X_t + \alpha_2 X_t f_{tk} + \varepsilon_t \ldots\ldots\ldots (10)$$

In the above equations, Y is the dependent variable, while X represents the independent variables. Moreover, k is the break date while φ is the dummy variable such that

$$f_{tk} = 0 \; if \; t < k \; and \; f_{tk} = 1 \; if \; t > k.$$

The above frameworks endogenously determine a single break and provide the predicted time of break within the sample. The framework selects the break date where the test statistic is the least vis-à-vis, and the absolute ADF test statistic is the highest. Finally, the calculated value of this approach is compared with the MacKinnon (1991) critical value to ensure breaks.

[Insert Table 8 here]

The analysis in Table 8 suggests that GDPC, FCF, and CRD are non-stationary at the level, but are stationary at the 1st difference, where the breakpoint appears in the years 1996 and 1997 for GDPC for both countries. The FD is found to be non-stationary at level but stationary after taking the first difference. The breakpoint is recorded as the years 1996 and 1997 for Malaysia and Indonesia respectively. The market capitalisation is found to be stationary at level for both countries where the structural break occurred in the years 1997 and 2007 for Malaysia and Indonesia respectively. Accordingly, the analysis confirms that Malaysia was affected more by the Asian financial crisis in 1997 while Indonesia was affected more by the global financial crisis that occurred in 2007.

[Insert Table 9 about here]

The sample years comprised of the change in both the political regime and significant economic policies in Malaysia and Indonesia as both countries significantly transformed their economies towards financial and trade liberalisation and privatisation. Thus, this study examined the cointegration relation among the variables of interest by considering the assumption of a structural break.

The result is consistent regarding the long-run relation under the assumption of level change. For instance, the ADF and Z_t test consistently confirmed the existence of cointegration between the FD and economic growth under the assumption of a level change in the case of Malaysia (refer to Table 9). Table 9 depicts the year of the breaks, which mainly occurred in 1996. Lastly, Table 9 also shows the cointegration relation between FD and GDPC under the assumption of trends and regime change, where the breakpoint is the year 1998 in the case of Indonesia.

4. CONCLUSION

This paper presents the role of FD in explaining economic growth in the context of Malaysia and Indonesia by incorporating the financial crisis (structural break) and strategic change in the institutional setup. Utilising Autoregressive Distributed Lags (ARDL) and the structural break framework, the time series data between the year 1984 and 2016 were analysed. The analysis demonstrated that FD promotes economic growth in both economies in the long-run. Similarly, the non-linear analysis also showed that FD and economic growth follow an inverted U-shape relation in the case of Malaysia whereas, for Indonesia, it followed a U-shape relation. The investigation in this study revealed that not all measures of FD promote economic growth. For example, market capitalisation appears to be profound for the Malaysian economy while credit to the private sector and money supply is conducive to the Indonesian economy.

Lastly, the research found that several structural breaks occurred throughout the FD and economic growth relationship. Although, a positive change in institutional quality was found to have a greater impact on augmenting economic growth rather than playing a mediating role in the linkage of FD and growth in Malaysia. In the context of Indonesia, institutional quality was found to impede economic growth and played a positive and significant mediating role in the nexus of FD and economic growth. The spill-over analysis also revealed that Malaysian FD was positively associated with Indonesian economic growth while Indonesian FD was negatively associated with the Malaysian economy. Consequently, this study provided all the economic and anecdotal explanations in supporting the result.

In conclusion, this study found that the Asian and global financial crisis obstructed the economic growth of Indonesia in the long- and short-run whereas FD insignificantly influenced the economic growth of Malaysia. This study has also demonstrated that institution quality, corporate governance and institutional shareholder are conducive to impede the

adversity of the financial crisis. Accordingly, an implication concerning policy is highlighted in this study in that both institutional quality and corporate governance are important strategic mechanisms in defending against the negative effect of a financial crisis.

REFERENCES

Aghion, P., Blundell, R., Griffith, R., Howitt, P., & Prantl, S. (2009). The effects of entry on incumbent innovation and productivity. *The Review of Economics and Statistics*, *91*(1), 20-32.

Ang, J. B. (2009). Private investment and financial sector policies in India and Malaysia. *World Development*, *37*(7), 1261-1273.

Arestis, P. & Demetriades, P. (1997). Financial development and economic growth: assessing the evidence. *The Economic Journal* 107(442), 783-799.

Arestis, P., Demetriades, P.O., & Luintel, K.B. (2001). Financial development and economic growth: the role of stock markets. *Journal of Money, Credit and Banking*, 16-41.

Bonnal, M. & Yaya, M.E. (2015). Political institutions, trade openness, and economic growth: new evidence, *Emerging Markets Finance and Trade* 51(6), 1276-1291.

Cecchetti, S. G., & Kharroubi, E. (2012). Reassessing the impact of finance on growth.

Christopoulos, D. K., & Tsionas, E. G. (2004). Financial development and economic growth: evidence from panel unit root and cointegration tests. *Journal of development*

Corsetti, G., Pesenti, P., & Roubini, N. (1999). Paper tigers?: A model of the Asian crisis. *European Economic Review*, *43*(7), 1211-1236.

Dawson, P. J. (2008). Financial development and economic growth in developing countries. *Progress in Development Studies*, *8*(4), 325-331.

Demetriades, P.O., & Andrianova, S. (2003). Finance and growth: what we know and what we need to know. University of Leicester Working Paper.

Engle, R. F., & Granger, C. W. (1987). Co-integration and error correction: representation, estimation, and testing. *Econometrica: Journal of the Econometric Society*, 251-276.

Fink, G., Haiss, P., & Vuksic, G. (2006). 11. Importance of financial sectors for growth in accession countries. *Financial Development, Integration and Stability: Evidence from Central, Eastern and South-Eastern Europe*, 154.

Goodhart, C.A. (ed.). (2004). *Financial development and economic growth: explaining the links*. Palgrave Macmillan.

Greenspan, Alan 1998. Testimony of Chairman Alan Greenspan Before the Committee on Banking and Financial Services, U.S. House of Representatives, January 30.

Gregory, A. W., & Hansen, B. E. (1996). Practitioner's corner: tests for cointegration in models with regime and trend shifts. Oxford bulletin of Economics and Statistics, 58(3), 555-560.

Gregory, A. W., & Hansen, B. E. (1996). Residual-based tests for cointegration in models with regime shifts. Journal of econometrics, 70(1), 99-126.

Gurley, J. G., & Shaw, E. S. (1955). Financial aspects of economic development. *The American Economic Review*, *45*(4), 515-538.

Hall, R.E. & Jones, C.I. (1999). Why do some countries produce so much more output per worker than others? (No. w6564). National Bureau of Economic Research.

Klomp, J., & de Haan, J. (2014). Bank regulation, the quality of institutions, and banking risk in emerging and developing countries: an empirical analysis. *Emerging Markets Finance and Trade*, *50*(6), 19-40.

Knack S. & Keefer P. (1995). Institutions and economic performance: cross-country tests using alternative institutional measures. *Economics and Politics* 7, 207–227.

Kutan, A. M., Samargandi, N., & Sohag, K. (2017). Does Institutional Quality Matter for Financial Development and Growth? Further Evidence from MENA Countries. *Australian Economic Papers*, *56*(3), 228-248.

Levine, R. (1998). The legal environment, banks, and long-run economic growth. *Journal of money, credit and banking*, 596-613.

Levine, R. (1999). Law, finance, and economic growth. *Journal of financial Inrunediation*, *8*(1-2), 8-35.

Levine, R. (1999). Law, finance, and economic growth. *Journal of financial Inrunediation*, *8*(1-2), 8-35.

Loayza, N.V. & Ranciere, R. (2006). Financial development, financial fragility, and growth. *Journal of Money, Credit and Banking*, 1051-1076.

Lucas Jr, R. E. (1988). On the mechanics of economic development. *Journal of monetary economics*, *22*(1), 3-42.

MacKinnon, J. G. (1991). Critical values for cointegration tests. In *Eds.), Long-Run Economic Relationship: Readings in Cointegration*.

McKinnon, R.I. (1973). *Money and capital in economic development*. Washington, D.C.: Brookings Institution.

Menyah, K., Nazlioglu, S., & Wolde-Rufael, Y. (2014). Financial development, trade openness and economic growth in African countries: New insights from a panel causality approach. *Economic Modelling*, *37*, 386-394.

Naceur, S. B., Ghazouani, S., & Omran, M. (2008). Does stock market liberalization spur financial and economic development in the MENA region?. *Journal of Comparative Economics*, *36*(4), 673-693.

Pesaran, M. H., Shin, Y., & Smith, R. J. (2001). Bounds testing approaches to the analysis of level relationships. Journal of applied econometrics, 16(3), 289-326.

Rodrik, D., Subramanian, A., & Trebbi, F. (2002). Institutions rule: the primacy of institutions over integration and geography in economic development. *IMF Working Paper*, No. 189.

Samargandi, N., & Kutan, A. M. (2016). Private credit spillovers and economic growth: Evidence from BRICS countries. *Journal of International Financial Markets, Institutions and Money*, *44*, 56-84.

Samargandi, N., Fidrmuc, J., & Ghosh, S. (2014). Financial development and economic growth in an oil-rich economy: the case of Saudi Arabia. *Economic Modelling* 43, 267-278.

Samargandi, N., Fidrmuc, J., & Ghosh, S. (2015). Is the relationship between financial development and economic growth monotonic? Evidence from a sample of middle-income countries. *World Development*, *68*, 66-81.

Schumpeter, J. A. (1934). The theory of economic development translated by Redvers Opie. *Harvard: Economic Studies*, *46*.

Shams, S. M. R. (2016a). Capacity building for sustained competitive advantage: A conceptual framework. *Marketing Intelligence & Planning, 34* (5), 671 – 691.

Shams, S. M. R. (2016b). Branding destination image: A stakeholder causal scope analysis for internationalisation of destinations. *Tourism Planning & Development, 13* (2), 140 – 153.

Shams, S. M. R. (2016c). Sustainability issues in transnational education service: A conceptual framework and empirical insights. *Journal of Global Marketing, 29* (3), 139 – 155.

Shleifer, A., & Vishny, R. W. (1997). A survey of corporate governance. *The journal of finance*, *52*(2), 737-783.

Soedarmono, W., Hasan, I., & Arsyad, N. (2017). Non-linearity in the finance-growth nexus: Evidence from Indonesia. *International Economics*, *150*, 19-35.

Stern, N. (1989). The economics of development: a survey. *The Economic Journal*, *99*(397), 597-685.

Wachtel, P. (2001). Growth and Finance: What do we know and how do we know it?. *International Finance*, *4*(3), 335-362.

Xu, Z. (2000). Financial development, investment, and economic growth. *Economic inquiry*, *38*(2), 331-344.

Zivot, E., & Andrews, D. W. K. (2002). Further evidence on the great crash, the oil-price shock, and the unit-root hypothesis. Journal of Business & Economic Statistics, 20(1), 25-44.

Biography

Kazi Sohag

Kazi Sohag is a senior research fellow at Graduate School of Economics and Management, Ural Federal University, Russia. He is also associate research fellow at Accounting Research Institute, UiTM, Malaysia, and an adjunct research fellow at School of Commerce, Southern Queensland University, Australia, and an external researcher at Center of Research Excellence in Renewable Energy and Power Systems, King Abdulaziz University, Jeddah, Saudi Arabia.
Mail: Room 209A, Gogolya St. 25, Ekaterinbourg, 620075, Russia
Email: sohagkaziewu@gmail.com or ksokhag@urfu.ru http://orcid.org/0000-0002-0976-2357

Riad Shams* (corresponding Author**)**

…

Normah Omar

Normah Omar is the Director of the Accounting Research Institute (ARI), a Higher Institution Centre of Excellence (HICoE) which is recognized and funded by the Ministry of Higher Education, Malaysia. Prof Normah is currently the Deputy Chairman, Past President and founding committee member of the Asia-Pacific Management Accounting Association (APMAA) which is based in Japan. She was also a national-level operation review panel member of the Malaysian Anti-Corruption Commission.

Mail: Level 12, Menara Sultan Abdul Aziz Shah, Universiti Teknologi MARA, 40450 Shah Alam, Selangor, Malaysia

Email: normah645@uitm.edu.my

Grahita Chandrarin

Grahita Chandrarin is the Director of Graduate School at University of Merdeka Malang. She has been actively involved in both national and international organizations, such as Coordinator of Accounting Indonesian Lecturer Forum, Indonesian Accountant Institute-Compartment of Accounting Lecturer; President of Asia Pacific Management Accounting Association (2016) and Vice President represent Indonesia (since 2010) and so on.

Mail: Jln. Terusan Raya Dieng No 59 Malang 65146
East Java - INDONESIA

Email: grahitac@unmer.ac.id