

IMPACT OF MACROECONOMIC AND BANK SPECIFIC FACTORS ON LIQUIDITY OF COMMERCIAL BANKS IN MALAYSIA

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Abstract: *This study is to examine the impact and granger causality of bank-specific and macroeconomic factors on Malaysia commercial banks' liquidity. Secondary sources are used to conduct the hypotheses testing on 18 commercial banks (8 domestic and 10 foreign banks) in Malaysia from the year 2006 until 2016. The regression model, Pooled Ordinary Least Square and Granger Causality Test will be used in the study. Hausman test is used to test whether Random Effect Model (REM) or Fixed Effect model (FEM) is appropriate. Prob. Chi Square shows 1.0000 which higher than significance level of 0.05. Thus, there is sufficient evidence to conclude that REM is better than FEM. The result showed that inflation rate (CPI), government deficit financing (GDF) and asset size (LNSIZE) are positive and insignificant relation in explaining the bank's liquidity. Capital (CAR) and leverage (LEV) showed negatively and significant relation with bank's liquidity while foreign exchange rate (EXCR) showed positive and significant relation with bank's liquidity. Moreover, bidirectional causality was found between CAR and LEV with bank liquidity while EXCR, GDF and LNSIZE shown unidirectional causality with bank liquidity.*

Keywords: *Macroeconomic, Bank Specific, Liquidity, Basel III*

Introduction

Over the past two decades, the two most noticeable financial crises were the Asian financial crisis in year 1997 and Subprime crisis in year 2008. These two crises have had significant effects on the banking industry. Table 1 below shows that prior to the Asian financial crisis of 1997, Malaysia had 54 domestic commercial banks operating as financial intermediaries. After the crisis, the number of domestic commercial banks in Malaysia started to drop. On 29 July 1999, Bank Negara Malaysia imposed the restructuring plan of merger and acquisitions for its 54 domestic deposit taking financial institutions to be consolidated into 6 institutions

(Ahmad, Arrif. & Skully, 2007). Consequently, today Malaysia is left with 8 local commercial banks and 18 foreign commercial banks.

Table 1: Number of Commercial Banks in Malaysia

Year	1980	1990	1997	1999	2001	2003	2005	2010
No. of domestic banks	54	54	54	21	10	10	10	8
No of foreign banks	12	13	13	13	13	13	14	18

Source: Bank Negara Malaysia Report, 2012

Malaysia restructured the banking and financial system along with enhancing liquidity position, corporate governance structure, framework of risk management and practices (Nambiar, 2009, Bank International Settlements, 2010 b).

Approaches to Measure Banks' Liquidity

Two most approaches used to measure banks' liquidity are by liquidity gap/flow approach and liquidity ratio/stock approach. The liquidity gap approach uses the variation between assets and liabilities both currently and future periods and for liquidity ratio/stock approach, it uses different types of ratios to identify the tendency of liquidity. Moore (2010); Michael Taillard (2012); Rychtárik (2009); Maechler, Mitra & Worell (2007); Ghosh (2010); Tamirisa & Igan (2008); Aspachs, Nier & Tieset (2005); Bunda & Desquilbet (2008); Andries (2009); Praet & Herzberg (2008) and Basel III have provided similar understandings with liquidity ratios such as liquid assets to total assets, liquid assets to deposits and short term borrowing, liquid assets to deposits, loans to total assets, loans to deposits. LCR and NSFR in Basel III. In short, the liquidity ratio carries varies balance sheet ratios to identify liquidity needs. According to Michael Taillard (2012) BNM is more favorable towards loan-to-deposit ratio (LTD) over liquid asset-to-total asset ratio as the measurement of liquidity.

Loan- Deposit ratio

In Malaysian Banking context, total loans consist of 'loans, advances and financing' whereas total deposits include both deposits from customers and placements from other financial institutions. The ratio is calculated by dividing total loans by total deposits x 100.

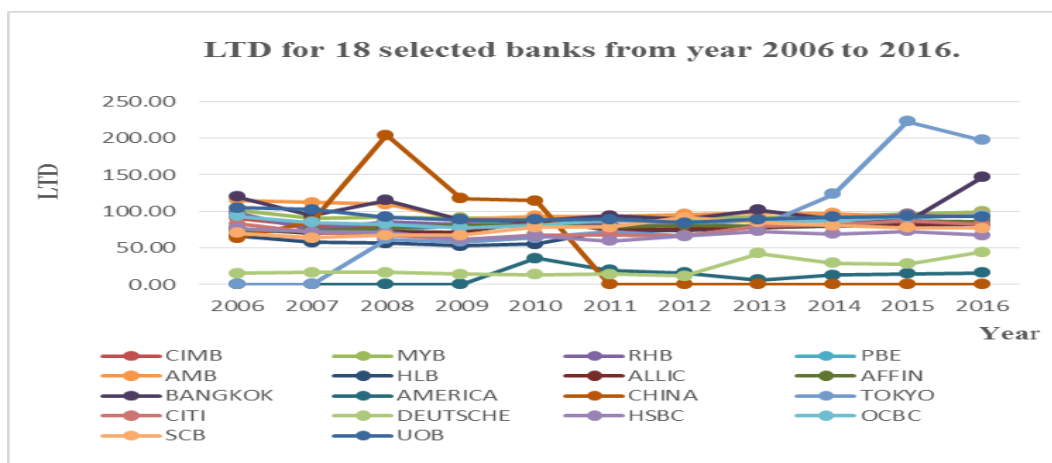


Figure 1: Loan-Deposit Ratio for 18 Selected Banks in Malaysia

Source: Banks' Annual Report, 2016

A high LDR indicates bank is issuing more deposits in loans interest bearing loans and the bank is generating more income. Therefore, the problem arises when borrowers are failed to repay their loans. In such cases, banks are liable to repay the deposit money to their customers, therefore, if LDR ratio is too high which puts the bank at high risk.

Based on Figure 1 above, the graph shown the LDR from 2006 – 2016 for 18 commercial banks, the average LDR was high at above 80% except for Bank of America and Deutsche Bank. The banks liquidity risk is evident from providing long term loans and making long term investments. This will create mismatch maturities by accepting short-term deposits.

Problem Statement

Historically, subprime mortgage crisis in US which occurred between year 2007 and year 2010 was a nationwide banking emergency. Thus, major banks around the world encountered this extreme full-blown international crisis and its sudden invasion had tragically resulted in several episodes of bank failures. Among the cases, Lehman Brothers' bankruptcy filing was the most prominent case during the subprime mortgage crisis that swept through the global financial market. The Lehman case can be briefly attributed to excessive amount of loans lending out to the mortgage sectors, which engulfed the entire available funds. In reality, numbers of banks are not able to withstand the economic bust even though vast volume of liquidity support has been provided by central bank (Adu-Gyamfi, 2016). Consequently, some banks were forced into mergers and required solution. Through this matter, banks' liquidity had obtained a significant attention, and became a serious concern for banks (Jenkinson, 2008). In order to resolve this problem, East Asia's banks have to liquidate their banks assets to compensate for the liquidity loss. Unfortunately, the banks could not immediately liquidate their long maturities assets (refer to figure 1. Loan/Deposit ratio). Therefore, this maturity mismatch of assets and liabilities caused the banks to suffer from liquidity crisis and the whole financial institution to become insolvent (Badar, M, 2013; Gardisc, G, 2014; Cucinelli, D, 2015; Alexandri, M.B, 2015; DeYoung, R, 2015).

According to the hypothesis stated by Berger & De Young (1997), low-capitalization of Malaysia banks results in a growth in problem financing. Banks with relatively low capital react to moral hazard incentives through raise the riskiness of their loan portfolios and bank liquidity, which leads to higher future problem loans and liquidity risk.

Macroeconomic determinants are seen to manage the best effect on firms' financial soundness. According to Figlewski, Frydman & Liang (2012), macroeconomic determinants are sorted into three. The first being general macroeconomic determinants is consumer price index. The second being directional determinants is gross domestic product (GDP) and the third is economic situations determinants such as interbank rate and exchange rate.

Ideal macroeconomic conditions identify with decreasing liquidity risk in banks subsequently bringing down credit risk. If the likelihood of liquidity risk increases, it will expand the level of non-performing loans. Most of the investigations carried out by researchers demonstrate a positive relationship of interest rate, GDP and CPI on bank liquidity. High propensities of liquidity risk come for high interest rate, low GDP, high CPI and government financing deficit.

Research Objective

The purpose of this study is to get deeper understanding of the impact and granger causality of macroeconomic and bank-specific factors on bank's liquid asset holdings in Malaysia for the period 2006-2016 for 18 banks (8 local commercial banks and 10 foreign banks).

- a) To examine the impact on bank specific (bank capital adequacy -moral hazard, bank size-too big to fail and bank leverage-bad management) and macroeconomic (inflation rate, foreign exchange rate and government deficit financing) on bank liquidity.
- b) To examine the granger causality on bank specific (bank capital -moral hazard, bank size-too big to fail and bank leverage -bad management) and macroeconomic (inflation rate, foreign exchange rate and government deficit financing) on bank liquidity.

Review of Literature

Liquidity of bank

Apart from profitability, liquidity was also one of the important decision to bank because by maintain certain level of liquidity which able bank in order to meet short term obligation from crisis or deposit from customers. Besides that, Sharma (2016) also indicated that there are others methods that could decrease liquidity risk which are mixed approach, stock approach and cash flow matching approach. Liquidity gap approach also a widely used by banks because it able to measure risks that arise from mismatch assets and liabilities. According to Rengasamy (2014), BNM uses loan-deposit ratio to calculate liquidity.

Capital adequacy (“moral hazard”) and bank liquidity

“Moral Hazard” hypothesis is a low-capitalization of banks result in a growth in problem financing (Isaev & Masih, 2017). This hypothesis presents that banks tend to raise the riskiness of their loan portfolio when they hold low capital, which in turn brings about low level of liquidity and high nonperforming loans in the future. Therefore, low capitalization leads to excessive liquidity risk taking and problem loans (Louzis, Vouldis & Metaxas, 2010). Thus, it is evident that the focus on profit maximization and ignore liquidity risk will invite higher risk to the banks (Garcia & Fernandez, 2008). Olarewaju & Akande (2016) defined the capital adequacy as the ability to finance its obligations instantaneously and effectively as a liquidity indicator of a bank. It helps banks to stabilize and recover from uncertain shocks. Capital adequacy ratio has positive impact on liquidity and significantly affects bank liquidity. Similar results were found from studies by Vodova (2011) saying that bank liquidity increases with higher capital adequacy of banks.

This study is in line with recommendations of Basel III, Sharma & Singh (2016) found capital adequacy ratio is positively influence bank liquidity. This result indicates that higher capital adequacy ratio leads to greater liquidity.

Bank size (“too big to fail”) and bank liquidity

Regulators are most likely to reimburse for any insolvency encountered by large institutions, which is term as ‘too big to fail’. Large banks normally take advantage to indulge in high risk activities. Therefore, this has caused liquidity creation to differ among banks according to their sizes. Both negative and relationship between bank liquidity and bank size. The findings are

supported by Deléchat, Henao, Muthoora, & Vtyurina (2012) who found that liquidity grant higher liquidity with bank size but also begins to reduce after a certain level in bank size. Positive effect of liquidity and bank size was found by Rauch, Steffen, Hackethal & Tyrell, 2009 and Berger & Bouwman, 2009 who stated that smaller bank tend to emphasis on transformation activities and intermediation processes they do have lesser liquidity.

Leverage (“bad management”) and bank liquidity

Ogboi & Unuafe (2013) revealed that there is an effect between leverage and liquidity and non-performing loans ratio on bank’s performance while other researcher such as Kithinji (2010) indicated that there is no relationship between leverage and liquidity. Hosna, Manzura & Juanjuan (2009) revealed that the leverage ratio brings negative impact to the banks’ liquidity. As a result, non-performing loans will increase. Thus, a bank’s financing using debt is not highly recommended because when there is an increase in financial leverage, companies’ debt services and so their liabilities will increase as well, which may bring negative impact towards companies’ performance and positive impact on liquidity. However, the best and efficient ways for banks to increase their profit is through financial leverage. Cantrell, McInnis & Yust (2013) also indicated that the higher the bank’s leverage ratio, the larger the impact of falling in asset prices and banks will suffer bankruptcy.

Foreign Exchange Rate and bank liquidity

According to Brunnermeier & Pedersen (2009) interactions between funding and market liquidity lead to illiquidity spirals. The authors show that the model can be explained empirical regularities related to the dynamics of market liquidity, for instance, its movements across securities and markets and their relationship with market volatility. Acharya & Viswanathan (2011) found the relationship between bank funding, liquidity and asset prices. According to them, when financial firms use short-term debt to finance asset purchases, negative asset shocks force such firms to de-leverage, causing the market and funding liquidity to dry up.

Inflation rate and bank liquidity

Vodova (2011a) found that `inflation rate was negatively correlated with the bank’s liquid asset holdings in Czech Republic but no relationship in Slovakia. Vodova (2011a) pointed out that inflation will deteriorate the overall economy condition thus causing the bank’s liquid asset holdings to deteriorate as well. This is due to the decrease in nominal value of the bank’s loan from the period it was lent till the period it was collected back. Caglayan & Xu (2016) based on their empirical findings, empirical results showed that bank manager managed to grant more loans in a more generous and willing manner during low volatility inflation since the expected returns are predictable. In contrast, the lending behavior of bank managers tend to be more conservative during the inflationary phases due to the unpredictable expected return. The observation provides further insight into the scarce bank sources that couldn’t be allocated efficiently due to distortionary effect of inflation volatility. A similar result was later performed by Roman and Sargu (2015), proven that the rate of inflation will positively affect overall banks’ liquidity.

Government deficit financing and bank liquidity

Existing research based on theoretical models shows that government debt can generate positive macroeconomic effects by providing liquid assets to financially constrained private agents. Government debt can improve welfare by relaxing households' borrowing constraints and allowing them to better smooth consumption (Aiyagari & McGrattan, 1998; Challe & Ragot, 2011). Existing empirical research provides mixed evidence. Few studies find that government debt is harmful for growth when the debt threshold of 90% of GDP is reached (Reinhart & Rogoff, 2010; Kumar & Woo, 2010; Cecchetti et al., 2011; Checherita-Westphal & Rother, 2012; Reinhart et al., 2012; Baum et al., 2013).

Proposed Theoretical Framework

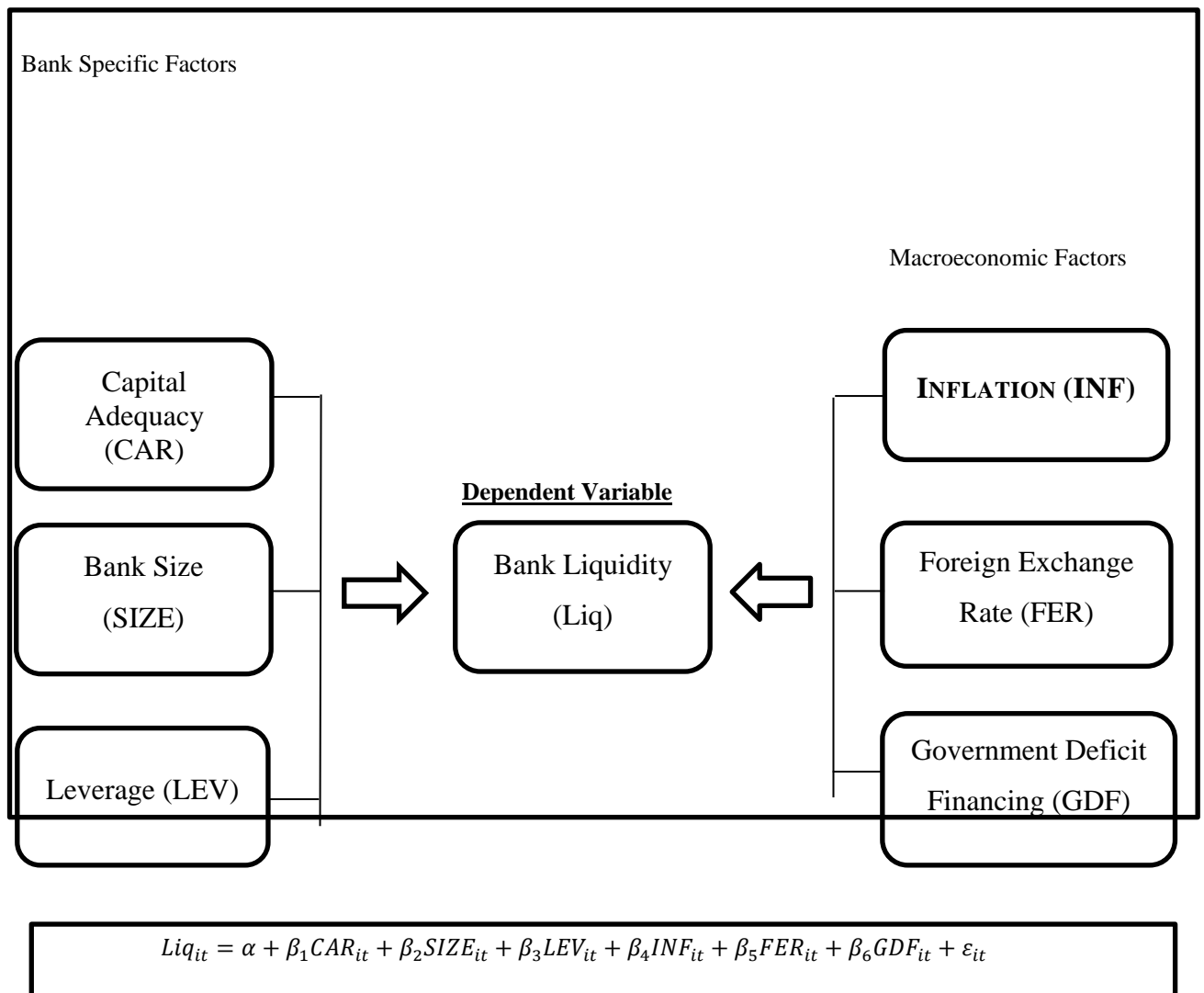


Figure 2: Proposed Theoretical Model/Conceptual Framework

Hypotheses Development

Bank capital (“moral hazard”)

“Moral Hazard” hypothesis is a low-capitalization of banks result in a growth in problem financing (Isaev & Masih, 2017). This hypothesis presents that banks tend to raise the riskiness

of their loan portfolio when they hold low capital and high liquidity, which in turn brings about high nonperforming loans in the future. Therefore, low capitalization leads to excessive liquidity risk taking and problem loans (Louzis, Vouldis & Metaxas, 2010). Thus, it is evident that the focus on profit maximization will invite higher risk and low liquidity (Garcia & Fernandez, 2008). The concept of capital adequacy with bank liquidity was studied by Choon, Hooi, Murthi, Yi & Shven (2013); Delechat et al.(2012); Moussa (2015); Bunda & Desquilbet (2008), a significant and negative impact of capital adequacy on bank liquidity was found.

Hypotheses 1. Bank capital has negative and significant impact on bank liquidity.

Bank size (“too big to fail”)

Large banks normally tend to engage more in risky activities to grow in size, hence, increasing their leverage under “too big to fail presumption”. Aspachs, Nier, & Tiesset (2005) discovered that bank size had a positive and insignificant effect on bank liquidity. However, Choon et al. (2013) found a significant negative relationship between bank size and liquidity.

Hypotheses 2. Bank size has positive and significant impact on bank liquidity.

Bank leverage (“bad management”)

Berger & DeYoung (1997) state that there is negative relationship between high leverage and liquidity. He pointed out that 'bad' managers may have poor skills in credit analysis; not fully competent in appraising the value of pledged collateral, and maintained a high leverage/debt ratio which resulted low liquidity. Cantrell, McInnis & Yust (2013) also indicated that the higher the bank's leverage ratio, the larger the impact of falling in asset prices and banks will suffer liquidity and bankruptcy risk.

Hypotheses 3. Bank leverage has negative and significant impact on bank liquidity.

Inflation rate (INF)

According to Tseganesh, (2012), inflation has positive impact on the liquidity while study by Horváth et al, (2015) finds significant effect on the banks liquid assets.

Hypotheses 4. Inflation rate has positive and insignificant impact on bank liquidity.

Foreign exchange rate

If the exchange rate of one country is rising, it means that the currency is become more valuable and higher profitability and liquidity whereas if the exchange rate of one country is dropping, it means that the currency is become valueless and it may cause the loss of profitability and liquidity of the institutions (Jeffrey & Andrew, 1996). So, the main objective of central bank, risk management professionals and academic is computing banks' foreign exchange exposure.

Hypotheses 5. Foreign exchange rate has positive and significant impact on bank liquidity.

Government deficit financing

According to Bolton & Jeanne (2011), a huge amount of government debt is held by banks for liquidity purpose.. This finding is consistent with the liquidity channel. Government debt may be indirectly held by firms through the banking sector. .In an economy with financial market imperfections, firms make bank deposits to meet future liquidity needs, while banks use government debt as borrowing collateral to meet deposit withdrawals. (Kumhof & Tanner, 2005; Saint-Paul, 2005). The positive effect of corporate liquidity on the real investment of financially constrained firms (Duchin et al, 2010; Campello et al, 2011).

Hypotheses 6. Government deficit financing has positive and significant impact on bank liquidity.

Methodology

The model used in this analysis is adopted by the formulation postulated by economic theory and literature for the time persistence in the bank liquidity.

$$Liq_{it} = \alpha + \beta_1 CAR_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + \beta_4 INF_{it} + \beta_5 FER_{it} + \beta_6 GDF_{it} + \varepsilon_{it}$$

where, α is intercept, LIQ is liquidity, CAR is capital adequacy ratio, $SIZE_i$ is bank size, LEV is leverage, INF is Inflation rate, FER is the foreign exchange rate, GDF is government deficit financing , ε_{it} is Idiosyncratic error

Panel Causality (Dumitrescu and Hurlin, 2012) test

Granger causality is to find the relationship and direction between or among the variables and to determine whether one time series is useful to forecasting another which confirms causation behaviours between two variables.

Data Analysis

Result Analyses

The first test that has been performed is the test on the model specification then followed by Breusch Pagan LM test and Hausman test, Multicollinearity, Heteroscedasticity and Autocorrelation. There are three types of Panel Data Regression Model such as Pool OLS Model, Fixed Effect Model (FEM), and Random Effect Model (REM). Thus, the results of these three models will be shown on the Table 2.

Table 2. Panel Regression Result (POLS, FEM & REM)

INDEPENDENT VARIABLES	(1) POLS LTD	(2) FE LTD	(3) RE LTD
LEV	-1.4569*** (0.0000)	-0.6098* (0.0870)	-1.1189*** (0.0000)
CAR	-0.3928*** (0.0005)	-0.3004** (0.0181)	-0.3585*** (0.0006)
LNSIZE	-3.91E-06 (0.3704)	3.26E-06 (0.2621)	1.52E-06 (0.5980)

EXCR	0.2530 (0.3636)	0.3719** (0.0461)	0.3112* (0.0911)
INF	2.2353 (0.2068)	1.4738 (0.2171)	1.9127 (0.1032)
GDF	1.5782 (0.4444)	2.1766 (0.1182)	1.7392 (0.2033)
Constant	109.6150*** (0.0000)	99.8061*** (0.0000)	105.3782*** (0.0000)
<u>Diagnostic tests</u>			
N	198	198	198
R ²	0.2336	0.7014	0.1696
Breusch Pagan Test	292.4171***		
Hausman Test	0.0000		
Poolability Test	16.0333***		
Cross-sections included (c)	18		

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Compare the result

We run the pool OLS (POLS), random (REM) and fixed (FEM) estimate regression model. POLS considered model denies heterogeneity and individuality of data and REM and FEM methods allow heterogeneity or individuality among banks. POLS concluded that CAR and LEV significantly and negatively affected liquidity. LNSIZE, EXCR, CPI and GDF were insignificant. FEM and REM concluded that CAR, LEV and EXCR significantly affected liquidity. However, the impact of CAR and LEV were negative whereas EXCR was positive. Results shown LNSIZE, INF and GDF were insignificant.

Choose the best model

Breusch Pagan LM (BPLM) test is widely used by researcher to test whether Pooled OLS or Random Effect Model (REM) is appropriate. The alternative hypothesis (H1) stated that Random Effect Model is more appropriate than Pooled OLS, which is $\sigma \neq 0$. Since the result shown is 0. It means that there is sufficient evidence to conclude that REM is better than Pooled OLS. Hausman test is used to test whether Random Effect Model (FEM) or Fixed Effect model (REM) is appropriate. If the decision came out reject the alternative hypothesis (H1). It means that the null hypothesis is accepted. Based on the result shown, the Prob. Chi Square shows 1.0000 which higher than significance level of 0.05. Thus, there is sufficient evidence to conclude that REM is better than FEM.

Result Discussion on the hypotheses proposed

Bank Specific Factors

Capital adequacy (“moral hazard”)

Based on the result, capital adequacy has a negative relationship and significant impact on bank liquidity at 5% significant level. The model shows that for every 1% increase in capital adequacy, the loan to deposit ratio will decrease -0.3585%, on average. This finding is consistent base the on past researchers. Nuviyanti & Anggono (2014) found capital adequacy

is negative correlation with loan to deposit ratio in their studies. Moreover the coefficient of is negative on banks' liquidity, thus, stating against the 'moral hazard' hypotheses

Bank's Size ("too big to fail")

Based on the result, bank size has a positive relationship and insignificant impact on bank liquidity. The model shows that for every 1% increase in bank size, the loan to deposit ratio will increase by 1.52E-06. Positive relationship bank liquidity and bank size are supported by Rauch et al., 2009; Berger & Bouwman, 2009, state that smaller banks prioritize on intermediation processes and transformation activities hence have a smaller amount of liquidity. Moreover the coefficient of is positive on banks' liquidity, thus, stating for the 'too big to fail' hypotheses

Bank Leverage ("bad management")

Based on the result, bank leverage has a negative relationship and significant impact on bank liquidity. The model shows that for every 1% increase in leverage, the loan to deposit ratio will decrease by 1.1189%. Moreover the coefficient of leverage is negative on banks' liquidity, thus, stating against the 'bad management' hypotheses.

Macroeconomic Factors

Inflation Rates (INF)

According to the results, inflation rates which categorized under the macroeconomic factors has been found to have insignificant effect on the banks' liquidity at the significance level of 10%. The result after examined shows that inflation rates within a nation will positively impact the banks' liquidity position proposed by Belete, 2015. According to him, the rising inflation rate within nation will drive down the real rate of return not just solely in money term, but also the asset holdings. Besides, the inflationary pressure will probably triggered some bad phenomena such as the credit rationing and thus the allocation of resource will not efficient. Hence, banks will reduce loans and hold more liquid asset in this scenario. The coefficient based on result applies that every 1 percentage increase in the inflation rates will lead to 1.9127% increase in banks' liquidity.

Foreign Exchange Rate

Based on the result, foreign exchange rate has a positive relationship and significant impact on bank liquidity at 10% significant level. The model shows that for every 1% increase in foreign exchange rate, the loan to deposit ratio will increase by 0.3112%, on average. This finding is consistent base the on past researchers.

Government Deficit Financing

Based on the result, GDF has a positive relationship and insignificant impact on bank liquidity at 10% significant level. The model shows that for every 1% increase in GDF, the loan to deposit ratio will increase by 1.7392%, on average.

Diagnosics Checking

Multicollinearity

Multicollinearity is used to detect whether the independent variables have linear relationship with each variables.

Table 3 Correlation between independent variables

	LTD	CAR	CPI	EXCR	GDF	LEV	LNSIZE
LTD	-	-	-	-	-	-	-
CAR	-0.2386	-	-	-	-	-	-
CPI	0.0428	0.0027	-	-	-	-	-
EXCR	0.1359	-0.0885	-0.2855	-	-	-	-
GDF	0.1445	-0.0089	0.3261	0.2553	-	-	-
LEV	-0.3822	-0.0527	0.1171	-0.1479	-0.1083	-	-
LNSIZE	-0.1096	0.2894	0.0634	-0.0625	0.05840	-0.0337	-

The result of correlation analysis for each pair of variables in table 3, we found that the correlation for each pair of variables are not high. The highest is 0.38 which is lower than 0.80, so we conclude that there is no serious multicollinearity problem.

Heteroscedasticity - White test

By using 5% significant level to test the white test, if the problem value is below 5%, the model will experience heteroscedasticity in their model. As result shown, 0.2085 was obtained from e-view 9.5 which is bigger than 5%. Hence, there are no heteroscedasticity in their model.

Wooldridge Test Statistic

Prob. Chi square obtained from e-view 9.5 is 0.0000 which do not reject Ho. This means that the error term is not correlated with the independent variables. Hence, there is autocorrelation problem in the model. We adjust for autocorrelation by change to first difference in all variables on E-views. As result shown, 0.2175 was obtained which is bigger than 5%.

Granger Causality Findings

Table 4. Pairwise Dumitrescu-Hurlin's Panel Granger Causality Test Result, 2006-2016

Direction of Causality	W-Stat
CAR → LTD	4.6083***
LTD → CAR	3.0540**
EXCR → LTD	2.8836**
LTD → EXCR	0.8666
GDF → LTD	1.1983
LTD → GDF	3.3078***
LEV → LTD	2.7089**
LTD → LEV	2.7920**
LNSIZE → LTD	7.7634***
LTD → LNSIZE	1.1523
INF → LTD	1.55428
LTD → INF	1.15039

Note: Lag length=1, selected based on SIC and ACI long run covariance white noise residuals.

*, ** and *** describes significant level at 10%, 5% and 1% respectively.

Our results in Table 4 above shown there is unidirectional causality between bank liquidity and foreign exchange rate, government deficit financing, log (assets size). These variables were increased when liquidity increased. This proved interaction support the results which reveal there are positive and significant relationship between those variables and their bank liquidity. Furthermore, the results show that there are bidirectional causality between capital adequacy ratio, leverage and bank liquidity in the short run They provide more liquidity and marketability to the investors. In turn, it will lead to an increase in the bank liquidity. Also, the findings reveal that there is homogeneously unidirectional causality running from bank liquidity and inflation. This inferences explained by the lack of financial stability in the banking sector during the tested period that has been witnessed during global crisis.

Conclusion

The result showed that inflation rate (CPI), government deficit financing (GDF) and asset size (LNSIZE) are positive and insignificant relation in explaining the bank's liquidity. Capital (CAR) and leverage (LEV) showed negatively and significant relation with bank's liquidity while foreign exchange rate (EXCR) showed positive and significant relation with bank's liquidity. All the findings are consistent with the past researchers. Moreover, bidirectional causality was found between CAR and LEV with bank liquidity while EXCR, GDF and LNSIZE shown unidirectional causality with bank liquidity.

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