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BANK-SPECIFIC AND MACROECONOMIC DETERMINANTS OF BANKS LIQUIDITY IN SOUTHEAST ASIA

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Abstract

In this paper, we investigate bank-specific and macroeconomic factors in Southeast Asia from Malaysia, Indonesia, Philippines, Thailand, and Vietnam during the period 2011 to 2020. We demonstrate that deposits to total assets and total loans to total assets are the major factors determining the liquidity of commercial banks in Southeast Asia. Prior research focuses on developed and emerging markets. Past researchers yield inconsistent results and to assess the impact of determinants on commercial bank liquidity, this study adds the factor of the political stability index, which has not been studied in any literature before. Bank-specific factors play a dominant role in determining liquidity in the Philippines and Vietnam. Similarly, in Malaysia and Thailand, liquidity is mainly influenced by bank-specific factors and GDP, while inflation and unemployment primarily affect liquidity in Indonesia. Banks in Indonesia should consider internal and external factors when strengthening their liquidity. Political stability has little impact in

Southeast Asia. These findings can guide regulatory authorities in enhancing the banking sector's resilience. Additionally, future studies may explore industry-specific determinants like interest rate margins and rates on loans and advances.

Keywords

Bank Liquidity, Bank-Specific Factors, Macroeconomic Factors, Political Stability

1. Introduction

Liquidity is a significant indicator of insolvency. Financial institutions use the term "liquidity" to describe their ability to meet both anticipated and unanticipated obligations in terms of cash and collateral (Diamond & Dybvig, 1983). BIS (2008) defines liquidity as the ability of a bank to increase assets and service debt obligations without suffering unacceptably severe losses. Banks have enough liquidity when they consistently have sufficient capital accessible at affordable costs to meet customer requirements. By contrast, banks will lose their solvency and eventually fail if they do not have enough funds to meet market demand.

There are past studies examining the bank-specific determinants, especially in Europe, and Africa (Assfaw, 2019; Tibebu, 2019; Al-Qudah, 2020; Yitayaw, 2021; Kajola, Sanyaolu, & Alao, 2021). These studies capture debatable perspectives on the direction and relevance of the variables. Existing studies in Southeast Asia reported the absence of bank-specific determinants (Al-Homaidi, Tabash, Farhan, & Almaqtari, 2019; Mahmood, Khalid, Waheed, & Arif, 2019; Umamaheswari & Prakash, 2020; Nguyen, 2022). One of the probable reasons why these studies generate divergent outcomes is that may be the open market operations and financing structure (Loutskina, 2011; Abdul-Rahman, Sulaiman, & Said, 2018).

Studies on Southeast Asia's commercial banking industry have generally examined factors that influence the profitability of banks, but only limited attention has been given to studying the liquidity of banks and its determinants. Commercial banks in Southeast Asia must therefore be examined for their liquidity determinants. The study aimed to add new data about Southeast Asia's present liquidity position and the macroeconomic and bank-specific factors that influence commercial banks' liquidity. This paper attempts to answer the following research questions to meet the objective and examine the determinants of commercial banks liquidity in Southeast Asia, mainly Malaysia, Indonesia, Philippines, Thailand, and Vietnam:

- What impact does a commercial bank's liquidity have on its **capital adequacy**?

- How does a commercial bank's liquidity change as a result of **deposits**?
- How does a commercial bank's **profitability** affect its liquidity?
- How does a commercial bank's **loan to assets** affect its liquidity?
- How does **gross domestic product** influence the liquidity of commercial banks?
- How does **inflation** influence the liquidity of commercial banks?
- How does **unemployment** influence the liquidity of commercial banks?
- How does **political stability** influence the liquidity of commercial banks?

2. Literature Review

The reason that researchers want to study the determinants of banking liquidity in Southeast Asia is due to the lack of study in the countries. Most of the research is contributed to the developed countries. There are a smaller number of academic journals or published journal studies on commercial banks' liquidity in Southeast Asia. Mostly, the researchers contributed to the determinants of banks' profitability (Vejzagic & Zarafat, 2014), determinants of liquidity and market risk of conventional and Islamic banks (Zolkifli, Samsudin, & Yusof, 2019), firm-level determinants of liquidity in Malaysian SMEs by employed a quantile regression approach (Wasiuzzaman, 2018), how the liquidity risk will impact to the bank performance by using return on asset and return on equity as the dependent variables (Rahman & Saeed, 2015), macroeconomic and bank-level determinants of liquidity of Islamic Bank in Malaysia (Dabiri, Yusof & Wahab, 2019), factors influence the liquidity risk in Islamic Banks in Indonesia and Malaysia (Anggun & Waspada, 2018).

The relationship between bank liquidity and bank-specific and macroeconomic factors is not conclusively determined, as literature demonstrates a divergent perspective on the direction and relevance of the variables under the study. The researcher was motivated by an inconsistent result of prior research on the same variables. Therefore, this study tries to examine the impact of determinants on commercial bank liquidity by adding new variables of political stability which are not investigated in any study yet to the author's best knowledge. Empirical research on liquidity risk is limited, with most studies focusing on advanced economies. Most of the studies on banking fragility used profitability as a predictor, which was used by academics to conduct their research. There may be no correlation between the specific bank structure variables (capitalization and loans

to assets), but the results suggest that the variables picked can influence the risk management of liquidity.

Even though banks' primary role is to function as a middleman in financial transactions, most prior research failed to analyze the full impact of deposit growth on bank liquidity in any depth. Liquidity is mostly determined by how much money customers deposit. A rapid rise in the need for liquidity may necessitate the sale of illiquid assets at any time. By dividing the entire assets by the total deposits. Even though deposits constitute the primary activity of banks as financial intermediaries, there has been relatively little research on the effect of deposits on bank liquidity.

The commercial loan theory clarifies the function of commercial lending while implying that commercial banks must focus on commercial loans to ensure liquidity. Although most mobilized capital has a brief or indefinite tenure, commercial banks' capital mobilization is ongoing, providing consecutive cash flows. Liquidity levels in banks are largely dictated by the demand for loans, which Eakin (2008) says is the foundation for loan growth. Because short-term loans are more profitable, banks prefer to store more liquid assets when loan demand is low. Conversely, banks prefer to hold fewer liquid assets when loan demand is high. This finding demonstrates that, while banks retain their liquidity ratios over minimum requirements, they must pay special attention to their long-term loan portfolio to preserve the sector's optimal liquidity position.

Political stability is the author's contribution, as Chagwiza (2014) suggested that political stability should be considered in the determining of macroeconomic variables. To the author's best knowledge, the political stability index is the first contribution by the author to include as the independent variable to the determination of banks' liquidity. Besides that, most researchers prefer to study microeconomic factors instead of macroeconomic ones. There is a lack of evidence to show whether macroeconomic factors such as unemployment will affect the liquidity of a bank. Al-Harbi (2017) and Ahmad & Rasool (2017) recommended that future research be encouraged to include the unemployment rate in the determinations of the key factors of banks' liquidity. The research that has been conducted in this study consists of eight independent variables which are profitability, loans over total assets, capital adequacy ratio, deposits over total assets, gross domestic product, inflation, unemployment, and political stability index. At the same time, liquidity will be the dependent variable in this research. Considering these

studies' contradictory and varied conclusions, more research into determinants of liquidity is needed.

3. Research Methodology

The sample includes all commercial banks sources from the Central Bank of each country (***Table 3.1***). The annual financial data of all banks are collected from 2011 to 2020 from each bank's annual report. All banks with missing data, with less than 5 years of data, foreign currency and languages are excluded from the sample. The final sample consists of 100 commercial banks, which sum up to 1,000 bank-year observations. The details of exclusion are referred from ***Table 3.2***.

Table 3.1: *Central Bank of Malaysia, Thailand, Indonesia, Vietnam and Philippines*

Country	**Sources**
Malaysia	Bank Negara Malaysia (BNM)
Singapore	The Monetary Authority of Singapore (MAS)
Thailand	The Bank of Thailand (BOT)
Philippines	The Bango Sentral Ng Pilipinas
Vietnam	The State Bank of Vietnam (SBV)
Indonesia	Otoritas Jasa Keuangan (OJK)

(Source: Author's own work)

Table 3.2: *Sample Selection Process Based on Criteria*

	Malaysia	***Singapore***	***Thailand***	***Indonesia***	***Vietnam***	***Philippines***
Commercial Bank	26	4	13	68	31	25
Out of sample size	(2)	-	(1)	(4)	(6)	(3)
Incomplete financial reports	(1)	(1)	-	(12)	(5)	(3)
Financial statements are not in home currency	-	-	-	(5)	-	(12)
Financial statements that are	-	-	-	-	(9)	-

not in English Version						
Final sample amount	**23**	**3**	**12**	**47**	**11**	**7**
	88.46%	**75.00%**	**92.31%**	**69.12%**	**35.48%**	**28.00%**
Final Sample	**100**					
Observation year	**10**					
Amount of observations	**1000**					

(Source: Author's own work)

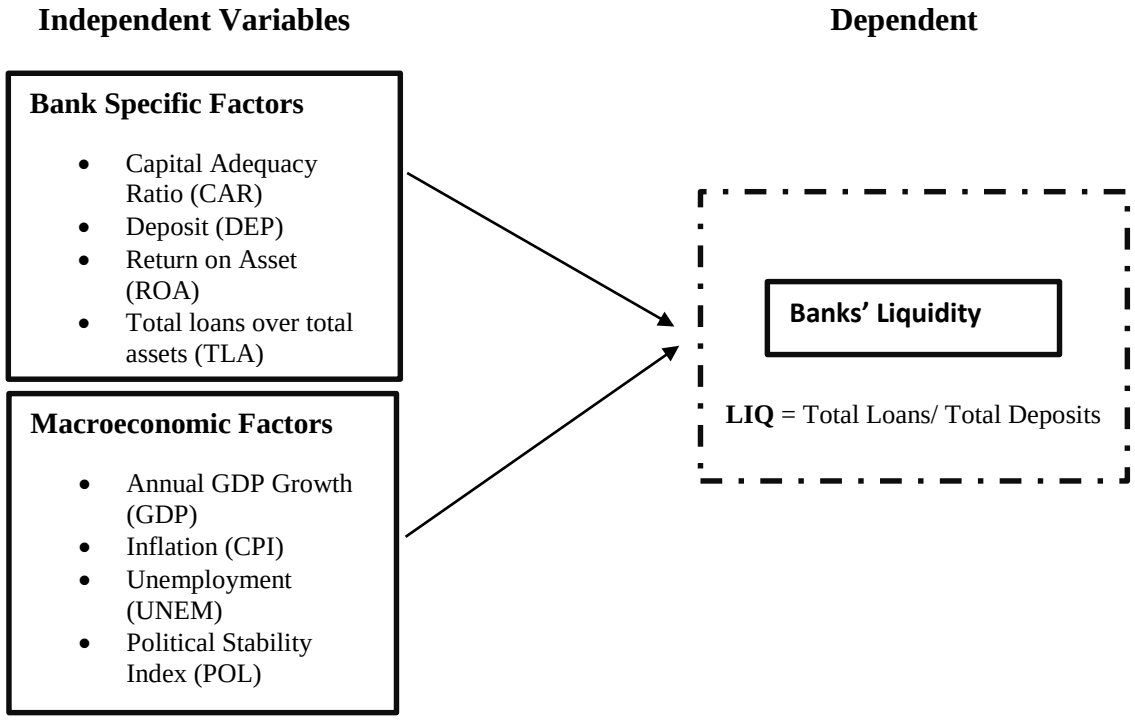
A study conducted utilizing suitable data gathering instruments increases the legitimacy and worth of research findings, according to consistent and reliable research. This study's data comes from secondary sources. The audited financial statements of each commercial bank included in the sample were used to collect bank-specific data, while industry and macroeconomic data were obtained from the World Bank's Database of the Global Economy for the period from 2011 to 2020.

The authors initially intended to include the liquidity ratio of liquid assets over total assets, as well as bank size and non-performing loans, as dependent variables in their study. However, the authors faced challenges in obtaining data for the liquid assets from the annual reports. The lack of specification and clarity regarding liquid assets, current assets, or assets maturing within 0-12 months in the audited annual reports of most banks in Malaysia, Thailand, Vietnam, Philippines, and Indonesia led the authors to exclude the liquidity ratio from their analysis.

It is important to note that a high liquidity ratio does not necessarily indicate a company's good performance, nor does a low liquidity ratio necessarily imply poor performance. The underlying assumption of this liquidity ratio is that a bank's entire asset portfolio would be liquidated to meet any stochastic withdrawal needs, which may not accurately reflect the reality of banking institutions treating the company as a going concern. Maintaining high amounts of liquid assets does not guarantee a bank's ability to handle unexpected withdrawals, and large volumes of liquid assets on a bank's balance sheet may be seen as underutilization of assets. Instead, the cash on hand could have been better utilized through investment (Chagwiza, 2014; ~~Vodova, 2012~~).

3.1. Theoretical Framework

Figure 3.3: *Theoretical Framework - The Impact of Bank-Specific and Macroeconomic Factors on Banks' Liquidity in Southeast Asia*



(Source: Author's own work)

3.2. Model Specification

The panel regression analysis technique is used to test the effect of independent variables, which are loans to assets, probability, capital adequacy ratio, deposit, gross domestic product, inflation, unemployment, and political stability index on the dependent variables, namely liquidity ratio of total loans over total deposits using the EViews 12 test tool. The first step is to determine the best model between the Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM) through the Chow Test, Hausman Test and Lagrange Multiplier Test. The panel regression equation model is as follows:

$$LIQ_{it} = a_{it} + \beta_1 CAR_{it} + \beta_2 DEQ_{it} + \beta_3 ROA_{it} + \beta_4 LTA_{it} + \beta_5 GDP_{it} + \beta_6 CPI_{it} + \beta_7 UNEM_{it} + \beta_8 POL_{it} + \varepsilon_{it}$$

Where:

$\boldsymbol{LIQ_{it}}$ = total loans over total deposits

$\boldsymbol{a}$ = constant

$\boldsymbol{\beta}$ = Regression Coefficient

$\boldsymbol{CADEQ_{it}}$ = Capital Adequacy Ratio

$\boldsymbol{DEP_{it}}$ = Deposit

$\boldsymbol{ROA_{it}}$ = Return on Asset

$\boldsymbol{LTA_{it}}$ = Loans to Assets

$\boldsymbol{GDP_{it}}$ = Gross Domestic Product

$\boldsymbol{CPI_{it}}$ = Inflation

$\boldsymbol{UNEM_{it}}$ = Unemployment

$\boldsymbol{POL_{it}}$ = Political Stability Index

$\boldsymbol{\varepsilon_{it}}$ = Error term

Empirical literature typically studies bank-specific determinants using a panel model (Cucinelli, 2013; Malik and Rafique, 2013; Chagwiza, 2014; Leykun, 2016; Singh and Sharma, 2016; Shah, Khan, Shah, Tahir, 2018; Assfaw, 2019; El-Chaarani, 2019; Al-Qudah, 2020). Therefore, we estimate the following baseline panel regression analysis. Statistical techniques included the Fixed Effect Model, Random Effect Model and Pooled Ordinary Least Square (POLS) by using the Chow test, Hausman test and Lagrange Multiple Test (LM Test). Chow test was conducted to determine the best model among fixed effect and common effect, the Hausman test to determine the best model among fixed effect and random effect, LM Test was conducted to determine whether REM is better than the common effect (PLS) method used. ***Table 3.4*** summarizes the model that will be employed by each of the countries after the Chow Test, Hausman Test and Lagrange Multiplier Test.

Table 3.4: *Summary of Statistical Model*

Country	***Chow Test***	***Hausman Test***	***Lagrange Multiplier Test***
Malaysia	H_0 rejected Fixed Effect Model	H_0 failed to reject Random Effect Model	H_0 failed to reject **Random Effect Model**

Indonesia	H_0 rejected Fixed Effect Model	H_0 failed to reject Random Effect Model	H_0 failed to reject **Random Effect Model**
Philippines	H_0 rejected **Fixed Effect Model**	Number of Cross Sections < Number of Coefs, unable to generate random effects estimation	
Thailand	H_0 rejected Fixed Effect Model	H_0 failed to reject Random Effect Model	H_0 failed to reject **Common Effect Model**
Vietnam	H_0 rejected Fixed Effect Model	H_0 failed to reject Random Effect Model	H_0 failed to reject **Common Effect Model**

(Source: Author's computation using EViews 12)

Table 3.5 lists the variables and their definitions. Liquidity Ratio are computed as the proportion of total loans over total deposits and denoted as LIQ_{it}. The capital adequacy ratio is computed by total equity over total assets as the independent variables and denoted as CAR_{it}. Followed by deposit denoted as DEP_{it} derived from total deposits over total assets. Profitability proxy by net income over total assets denoted as ROA_{it}. The fourth independent variables of loans to assets denoted are as LTA_{it}. For bank-specific factors, data are hand collected from published annual reports on the bank's website. The World Bank and The Global Economy provide data for macroeconomic factors.

Table 3.5: *Description of Variables*

Variables	Descriptions
LIQ	Liquidity Ratio (total loans over total deposits)
CAR	Capital adequacy ratio (total equity/ total assets)
DEP	Deposits (total deposits/ total assets)
ROA	Profitability (net income/ total assets)
LTA	Loans to Assets (total loans over total assets)
GDP	Gross domestic product (current US$)
CPI	Consumer Price Index
UNEM	Unemployment Growth Rate (%)
POL	Political Stability Index (values between -2.5 and +2.5)

(Source: Author's own work)

4. Results and Discussions

The findings of this study are presented and discussed in this chapter. The data analysis will be carried out accordingly on 5 countries namely, Malaysia, Indonesia, Philippines, Thailand and Vietnam.

Table 4.1: *Regression results for bank-specific and macroeconomic determinants of Bank Liquidity in Southeast Asia*

	Malaysia	***Thailand***	***Indonesia***	***Philippines***	***Vietnam***
LIQ	***REM***	***PLS***	***REM***	***FEM***	***PLS***
Constant	-7.3865	10.5855*	12.6942***	1.2035	1.9800
	(-1.5595)	(1.9295)	(2.8459)	(1.0129)	(1.1597)
	[0.1203]	[0.0562]	[0.0046]	[0.3156]	[0.2489]
CAR	-0.7211***	1.5344**	0.1207	0.6184***	-0.2170
	(-6.2391)	(2.3376)	(-1.6198)	(3.5162)	(-0.8700)
	[0.0000]	[0.0212]	[0.1060]	[0.0009]	[0.3864]
DEP	-1.7692***	-2.4002***	-2.1102***	-0.2742***	-0.7332***
	(-17.3135)	(-18.3104)	(-42.1872)	(-5.7376)	(-13.0481)
	[0.0000]	[0.0000]	[0.0000]	[0.0000]	[0.0000]
ROA	2.9883*	-3.5826	-0.1820	1.0459	3.1928**
	(1.7771)	(-1.3104)	(-0.5547)	(1.3523)	(2.3910)
	[0.0769]	[0.1928]	[0.5793]	[0.1818]	[0.0001]
LTA	2.0187***	1.9129***	1.8830***	1.3977***	1.1577***
	(21.4787)	(11.3598)	(39.7820)	(17.2799)	(16.1721)
	[0.0000]	[0.0000]	[0.0000]	[0.0000]	[0.0000]
GDP	0.3140*	-0.3479*	-0.4008**	-0.0415	-0.0491
	(1.7690)	(-1.7378)	(-2.5795)	(-0.9239)	(-0.7406)
	[0.0783]	[0.0850]	[0.0102]	[0.3596]	[0.4606]
CPI	-0.2749	-0.0209	-1.4050**	0.0280	-0.1095
	(-0.2383)	(-0.2992)	(-1.9721)	(0.0836)	(-0.4879)
	[0.8118]	[0.7654]	[0.0492]	[0.9337]	[0.6267]
UNEM	2.1655	-1.0396	-5.0368*	-0.6616	-2.3734
	(0.6621)	(-0.0828)	(-1.7822)	(-0.6507)	(-1.0773)
	[0.5086]	[0.9342]	[0.0754]	[0.5179]	[0.2839]
POL	-0.1732	0.0426	0.1228	0.0028	0.05975
	(-1.5531)	(0.3358)	(-1.5192)	(0.1408)	(0.8554)
	[0.1218]	[0.7376]	[0.1294]	[0.8886]	[0.3944]

R-squared	0.7695	0.8708	0.8336	0.9834	0.8016
Adjusted R-Squared	0.7612	0.8615	0.8307	0.9792	0.7858
F-statistic	92.2441*** [0.0000]	93.5176*** [0.0000]	288.6293**** [0.0000]	232.7451*** [0.0000]	50.9937*** [0.0000]
Durbin-Watson stat	1.1044	1.1424	0.8711	1.8904	0.9735
BreuschPagan LM Test	11.0066 (0.0000)***	3.7378 (0.0007)***	11.0066 (0.0000)***	8.4358 (0.0000)***	12.9569 (0.0000)***
Serial Correlation	21.5037 (0.0000)***	1.5392 (0.2192)	21.50369 (0.0000)***	5.0695 (0.0093)***	6.8954 (0.0016)****
Observations	230	470	120	70	110

(Source: Author's computation using EViews 12)

As shown in ***Table 4.1*** an adjusted R-squared coefficient of 76.12%; 86.15%; 83.07%; 97.92% and 78.58% was obtained from the estimated model for Malaysia, Thailand, Indonesia, Philippines and Vietnam respectively revealing that 76.12%; 86.15%; 83.07%; 97.92% and 78.58% of the variables for liquidity (LIQ) is explained by the selected explanatory variables Capital Adequacy (CAR), Deposit Growth (DEP), Profitability(ROA), Loans to assets (LTA), Gross Domestic Product (GDP), Inflation (CPI), unemployment (UNEM) and political stability index (POL). The R-square result makes sense because there might be other factors which are not included in the model but could help in explaining liquidity in commercial banks of Southeast Asia. Those factors can account for the remaining 23.88%; 13.85%; 16.93%; 2.08% and 21.42% for Malaysia, Thailand, Indonesia, Philippines and Vietnam respectively.

Malaysia

Capital adequacy and deposits would have a positive impact on the Malaysian Banking sector. BNM can enhance the capital adequacy ratio to enhance the liquidity as greater capital can raise the bank liquidity. Bank management shall propose a variety of attractive deposit products to attract depositors to credit their money. High profit will diminish the level of liquidity. Hence, banks should strike a balanced level of profitability and liquidity to ensure the smoothness of operation. Loans would diminish the liquidity as well as the primary business transaction of the

business, when the more the loan had been lent out the bank would face the liquidity risk from the bank run deposit from depositors if any unexpected circumstance happened.

Thailand

Deposits and loans are the primary sources and determinants of liquidity for commercial banks, which are financial intermediaries that convert surplus to deficit. Capital adequacy and loans are negative to determinants of bank liquidity whereas deposits and GDP will enhance the liquidity level of Thailand.

Indonesia

Commercial banks as the financial intermediate that transform surplus to deficit units bring the significant relationship that deposits and loans are the primary sources that affect the banking liquidity. Macroeconomic factors are less likely to impact Southeast Asia as only Indonesia is impacted by economic growth, inflation, and unemployment. This might be due to the economic level of Indonesia, which is the top-ranking in Southeast Asia and the 15th-largest economy in the world. Hence, the largest economy will be more sensitive to the changes in the macro economy.

Philippines

In Philippines, only loans to assets and capital adequacy have a negative relationship to the determinants of bank liquidity while deposits demonstrate an inverse relationship with banking liquidity. Profitability and macroeconomics will not bring any significant impact on the liquidity of banking in Philippines. The Bangko Sentral Ng Pilipinas should take note of the requirement of granting a massive amount of loan to prevent the excessive approved loan that might have consequences to the liquidity level of the bank.

Vietnam

The results from Vietnam in this study align with the latest researcher, Nguyen (2022). The deposit has a negative significant impact on bank liquidity in Vietnam where loan to asset shows positive significance to the determinants of bank liquidity in Vietnamese commercial banks. Nevertheless, the findings of trade-off relationships in Vietnam are also backed by Tran, Nguyen, Nguyen and Tran (2019) and Nguyen (2022). Macroeconomic variables have no empirical evidence that will affect the determinants of bank liquidity in Vietnam. This study also supports

Nguyen and Vo (2021) that capital adequacy, gross domestic product, and inflation did not impact the liquidity of commercial banks in Vietnam and profitability does have a positive significant impact on the determinants of bank liquidity.

5. Conclusion

This study, to the best of the author's knowledge, is the first to investigate the determinants of commercial bank liquidity in Southeast Asia that covers more than one country in the sample, mainly Malaysia, Thailand, Indonesia, Philippines and Vietnam. The study considers four bank-specific factors, four macroeconomic factors and different variables reflect that different statically significant results for each country. Based on the empirical findings, it can be concluded that loans to assets and deposits are the most significant determinants of bank liquidity in all the countries. The current study contributes to the literature by examining factors influencing liquidity in commercial banks in Southeast Asia, which is valuable to banks in Southeast Asia to manage liquidity risk and determine suitable liquidity conditions.

The study identifies several similarities and differences among empirical results on the five countries in Southeast Asia by using panel data regressions. The most outstanding similarity is that all countries record a significantly positive relationship between deposit and bank liquidity and a negative relationship with loans to assets as predicted. The loans-to-assets ratio has a strong negative correlation with determinants of liquidity. This form of risk like credit risk causes the bank's liquidity to dry up, which in turn diminishes the liquidity level and threatens the long-term viability of banks. This result confirms H_4 which assumes loan activities are heavily exposed to liquidity risk. The basic role of balance sheet intermediation, centered primarily on the provision of credit and the collection of deposits, must therefore be re-evaluated by banks.

Likewise, the significantly negative influence of profitability ~~to~~ on liquidity is found in Malaysia and Vietnam, however there is no significant effect in Thailand, Indonesia and Philippines. While the capital adequacy ratio only significantly impacts Malaysia, Thailand and Philippines and does not contribute to the determinants of liquidity in Indonesia and Vietnam.

Macroeconomic factors are less likely to impact Southeast Asia as only Indonesia is impacted by the economic growth, inflation, and unemployment. This might be due to the economic level of Indonesia, which is the top-ranking in Southeast Asia and the 15th-largest economy in the world (Research FDI, 2021). Hence, the largest economy will be more sensitive

to the changes of the macroeconomy. GDP also determines the bank liquidity in Malaysia and Thailand whereas they do not contribute to the determinants of liquidity in Vietnam and Philippines. Furthermore, inflation and unemployment have no impact on the bank liquidity of Malaysia, Thailand, Philippines and Vietnam. Lastly, the political stability index is insensitive to the banking liquidity in Southeast Asia.

Findings suggest that the liquidity of the banks is more affected by bank-specific factors. It is possible to improve a bank's liquidity by focusing on the highlighted factors since the management of the banks has control over the bank-specific characteristics.

5.1. Limitations of the Study and Future Research Direction

First, this study did not cover Brunei, Cambodia, Laos, Myanmar, and Timor-Leste which are in the Southeast Asia Region due to the accessibility to the annual report and Singapore had been excluded due to the multicollinearity problem. Future researchers can extend their topic into more countries like the ASEAN region etc. Other than that, a comparison between developed and developing countries can be carried out as well.

Second, there are other variables which were not included in the models due to the unavailability of data such as non-performing loans and liquid assets. Bank size had been excluded as this study covers 5 countries that apply 5 currencies, and authors are unable to convert it to the standardized currency as some of the banks might have different financial year endings in March, June, September, and December. Hence, this poses a challenge for authors to include bank size as one of the independent variables to test the relationship between the banks' liquidity for the six countries. Moreover, different home currencies will result in biased or misleading results due to the value of their currencies and lead to incomparable situations which is not fair to compare MYR 1 billion with THB 1 billion.

The liquidity ratio in the study might not always capture all liquidity, but it is widely used as it is easy to calculate and interpret (El Khoury, 2015). Hence, it is suggested that using liquidity coverage ratio and net stable funding ratio be provided by the Basel Committee.

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