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Effects of Bank Lending Channel on Emerging Market Economies: Empirical Evidence from Capital Market Sector

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ABSTRACT

This research aims to investigate the effects of the bank lending channel of monetary policy on capital markets in seventeen emerging market economies, which are comprised of bank-level data from 5589 banks and 76518 observations within the sample period from 2006 to 2021. This research concentrates on the bank lending channel because of the significant effect that banks have on the economy and financial markets. While monetary policy is vital and has various transmission channels into the actual economy, the bank lending channel will therefore, be the primary focus of this study. The study utilizes a dynamic panel model with sys-GMM and fixed effect model along with performing robustness checks, firstly by performing instrumental variable regressions and secondly by taking higher lags from the data sample. Among the countries included in the study, monetary policy has a negative impact on bank lending, while economic growth has a positive effect, according to the financial development indicators. The study findings suggest that the bank lending channel influences the capital markets.

| **KEYWORDS** | Bank Lending, Emerging Markets Financial Development, Policy Rate, Monetary Policy |

Introduction

Monetary policy refers to the measures implemented by central banks to control the amount of money in circulation, with the aim of achieving various macroeconomic goals Adal (2018). The reduction of the unemployment rate, the enhancement of economic growth, maintaining the level of interest and currency exchange rates and the management of inflation are a few of the objectives that fall within this category. Central banks within the limits of this framework have a few monetary policy instruments at their disposal. They can change interest rates in order to influence the economy. Their ability to acquire and sell foreign currencies on the market also gives them influence over the unstable currency exchange rates. The purchase and sale of government bonds can also be performed in the open market (Yuksel, 2017).

Central banks aim to influence the financial markets by using these techniques. They support monetary policies that encourage economic growth and employment (expansionary), such as cutting interest rates or buying government bonds from the open market (Galati et al., 2018). The purpose of these kinds of policies that central banks implement is to increase the amount of money that is available in the market in order to make it possible to revive the economy. However, it is particularly important to emphasize that this strategy leads to an increase in price levels. Gertler et al. (2018) suggested that in the presence of excessive inflation, implementing an expansionary policy is not advisable. In such a situation, the monetary authorities responsible for the

country's central banks should implement actions that reduce the money supply, Dincer (2018). Interest rate increases and selling bonds in the open market are examples of such measures. Decisions made by the central bank have a major effect on the capital markets (Aizenman et al., 2018). Therefore, the impact of monetary policies on capital markets is widely recognized. The price of government bonds would change over time regardless of whether monetary policy remained expansionary or contractionary (Lo Duca et al., 2018).

Furthermore, it is commonly recognized that the type of monetary policies implemented significantly affect stock prices. If a contractionary monetary policy prevails, financial institutions will then offer loans to businesses at higher interest rates. Based on these conditions, there will be an increase in the cost of living in these economies, which will have a negative influence on the financial viability of the businesses in these economies. Based on the research conducted by Dincer et al. (2019) and Somoye et al. (2018), it is clear that the stock markets of developing countries would experience a decline in value.

Examining how monetary policy influences the capital markets of developing nations is the primary objective and goal of this research. For this purpose, seventeen emerging countries (Bangladesh, Brazil, Cambodia, China, Indonesia, Kyrgyzstan, Malaysia, Mongolia, Myanmar, Nepal, Pakistan, Philippines, Russia, South Africa, Srilanka, Tajikistan, Uzbekistan) are taken into consideration. The real interest rate of the countries is used to represent monetary policy. Moreover, the annual data of these variables for the periods between 2006 and 2021 is evaluated using fixed effects, sys-GMM, and IV panel regressions. As a result of this analysis, it can be possible to understand whether monetary policies affect capital markets in emerging economies. The key innovation of this study is that it investigates the connection between monetary policy and capital markets by incorporating financial development indicators. These factors appear to us to be highly important in determining the effects that financial development and financial stability have on economic growth. The first variable is domestic credit to the private sector, which is termed financial development indicator 1. This variable was taken into consideration as a percentage of the GDP. This variable facilitates the provision of financial resources to the private sector by other depository businesses (deposit-taking corporations other than central banks), such as loans, purchases of non-equity securities, trade credits, and other accounts receivable that generate a claim for repayment. The second is market capitalization as a percentage of GDP, which is being taken into account as a financial development indicator. 2. This variable explains the positive impact of market capitalization on loan growth. Market capitalization refers to the overall value of a firm, which is calculated by multiplying its current share price by the number of outstanding stocks. The market capitalization of a corporation is determined by multiplying the current market price of each share by the total number of outstanding shares. The third financial development variable is the stocks traded, as % of GDP. This enhances the distribution of limited financial resources by providing credit to areas with the highest productivity while also enabling people to manage their spending patterns over time by means of saving and borrowing. All variables were log-transformed before the conduction of relevant regression tests, which are to be discussed in the latter section. Another important point is that using fixed effects, sys-GMM and IV panel regressions for this subject firstly increases the originality of this study. While considering these aspects, it is believed that this study contributes to the literature.

Literature Review

The transmission of monetary policy has been an interesting subject of discussion among policymakers. This is because monetary policy has a significant impact on the real economy through multiple channels. There are four main ways in which monetary policy affects the economy: interest rates, credit, asset prices and exchange rates. The interest rate channel of monetary policy transmission is the means by which monetary policy, and more specifically, the policy interest rate, exhibits an influence on both the market interest rate and the retail interest rate. Subsequently, the cost of capital, investment, and consumption expenditure will affect the overall output of the economy and its aggregate demand (Mishkin–1999). By the use of loan supply, the credit channel examines the mechanism that is responsible for the implementation of monetary policy in the actual economy. According to Mishkin (1999) and Hubbard (1995), the supply of loans is sensitive to changes in the policy interest rate. As a result, business and household investments, as well as consumer expenditures, are influenced, which affects the real economy.

Bernanke and Gertler (1995) stated that the influence of monetary policy through the credit channel also filters through to the balance sheets of organizations. The empirical evidence supports these findings. This is due to the fact that an increase or decrease in the policy interest rate will impact the cash flow and balance sheet of financial institutions. The shifts in the financial condition of enterprises will impact not only their investment expenditures but also aggregate demand and production. Another mechanism through which monetary policy can influence the economy is through the asset price channel. The objective of this channel is to demonstrate that a change in the policy interest rate can influence not just market interest rates but also the market value of bonds in relation to the return on equity investment. Consequently, it affects stock prices and the demand for equity, and as a result, investment expenditure and aggregate output are affected (Ireland, 2006).

Transmission of monetary policy may also occur via the exchange rate channel, which is also a different approach. A change in the policy interest rate will also affect the domestic interest rate and capital in comparison to the foreign interest rate, which will have an impact on the investment returns in foreign nations in comparison to the returns in the home country (Ullah 2022; Arestis and Sawyer, 2002; Mishkin, 1999). According to the Bank of England (1999), this circumstance generates a disturbance in the movement of capital out of the economy as well as the exchange rate, and it also has an impact on the economy's net exports and aggregate production. The channels of monetary policy transmission that are related to the banking sector and the credit aspect of the transmission have been recognized to be a key problem in many studies of monetary policy over the last several decades. The importance of this research emerges from the fact that financial intermediaries (which include the banking industry and other financial institutions) play a significant role in the capital markets. The banking sector and bank credits exert a significant influence on channels through which monetary policy is transmitted. The reason is that these channels are responsible for the transmission effect felt across the economy, including changes to investment, aggregate demand, and the interest rate provided by commercial banks, as well as changes to the supply and demand for bank loans (Berg et al.- 2005). In order to investigate the impact of monetary policy on the economy's capital markets, this study will concentrate on the bank lending channel. This is because banks play a big part in the economy and financial market, and giving money to people through banks is a very important way for the government to control inflation (Tadesse 2021; Tian and Tunio 2023). An additional crucial component of the research on the transmission of monetary policy is the concept of financial

development. Financial market development encompasses a multitude of facets, such as the advancement of the banking sector and capital markets, the liberalization of the financial sector, the promotion of financial innovation, the enhancement of financial competition, and the deepening of financial markets (Singh et al., 2008). Attasuda (2017), Yıldırım (2018), Suhaibu et al. (2020), and Shuja and Tunio (2024) changes in the financial development indicators in emerginging countries can have significant effects on the capital market. They can also change the roles that financial institutions and banks play in the market and the economy as a whole.

In the economies of emerging countries, bank-controlled financial systems are more conducive to growth; however, in the economies of developed countries, the market for oriented systems would be more promising for future growth. On the other hand, Atje and Jovanovic (2019) and Tunio et al. (2020) found that the indicators of the banking sector were a much less correlated to the performance of investments when compared to the indicators of the cash flow part of the stock market. Numerous arguments have been brought forward to emphasize the weak link or negative effect that financial development has on the progression of the economy. These arguments have been generated for a wide range of factors. The aim of the study by Praptiningsih (2018) was to have a better understanding of Indonesia. According to the results obtained with the use of VECM, the Jakarta Commodity index is significantly affected by changes in monetary policy. In their respective fields of research, Wan-Chun and ChenMin (2016), Mario (2011), Fu-Sheng Hung (2019), and Eggoh (2020) have all emphasized the correlation between financial and economic growth in their similar area of study. Eggoh (2019) examined the correlation between financial development, financial stability, and economic growth in fourteen nations.

Material and Methods

The study employs panel data analysis based on previous research (Attasuda. (2016), Dincer et al. (2018), Galati et al. (2018)). It utilizes fixed effects (FE), system GMM (SGMM), and instrumental variable regression (IVR). The basic model is in the following form:

$$
\begin{aligned}
\Delta lnloan_{i,s} = \ &\alpha_i + \sum_{s=1}^{k} \beta_1 \, \Delta lnloan_{j,s} + \sum_{s=1}^{k} \beta_2 \, \Delta gdp_{j,s} + \sum_{s=1}^{k} \beta_3 \, \Delta r_{j,s} \\
&+ \sum_{s=1}^{k} \beta_4 \, FD_{1\,i,s} + \sum_{s=1}^{k} \beta_5 \, FD_{2\,i,s} + \sum_{s=1}^{k} \beta_6 \, FD_{3\,i,s} \\
&+ \sum_{s=1}^{k} \beta_7 \left(\Delta r_{j,s} \times FD_{1\,i,s} \right) + \sum_{s=1}^{k} \beta_8 \left(\Delta r_{j,s} \times FD_{2\,i,s} \right) \\
&+ \sum_{s=1}^{k} \beta_9 \left(\Delta r_{j,s} \times FD_{3\,i,s} \right) + \varepsilon_{i,t}
\end{aligned}
\tag{1}
$$

Where $\Delta lnloan_{i,s}$ is the dependent or response variable; the growth rate of loan supply, which is a proxy for the bank lending for country i and time s to s-1. The growth rate of the loan supply is put off by one year to assess persistence in the dependent variable, following earlier studies. (Ehrmann et al., 2001; Huybens and Smith, 1999). The lagged economic growth is represented by $\Delta gdp_{j,s}$ and included in the model in order to control the economic condition of emerging economies. Changes directly influence bank lending in monetary policy, $\Delta r_{j,s}$ That is, monetary tightening (loosening) negatively affects bank lending. Because bank lending reacts after monetary policy announcements

(due to decision lag), therefore the model incorporates lagged monetary policy. (Kasman et al., 2011; Papadamou and Siriopoulos, 2014). The capital market-specific variables are represented by $FD_{1\,i,s}$ which is Domestic credit to the private sector, $FD_{2\,i,s}$ termed as Market Capitalization as a percentage of GDP and $FD_{3\,i,s}$ is termed as Stocks traded, as % of GDP respectively, for country i and time s.

Equation for the system generalized method of movement as follows:

$$y_{it} = X_{it}\,\beta + u_{it} \dots\dots.. (2)$$

Where y_{it} is the dependent variable and X_{it} is a metrix of independent variable for individual i and t time β is vector of coefficient to be estimated. u_{it} is the error term.

For instrumental variable regression model include one more instrumental variable denoted as Z_i which are used to solve the endogeneity problem and IVR equation is represent as:

$$Yi = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \dots + \beta_k X_{ki} + \varepsilon_i \dots\dots\dots.. (3)$$

$$X_{1i} = \pi_0 + \pi_1 Z_i + \pi_2 X_{2i} + \dots + \pi_p X_{pi} + u_i \dots\dots.. (4)$$

Y is dependent variable X_1, X_2, X_k are explanatory variables, $\beta_0, \beta_1, \beta_2, \beta_k$ are coefficient to be estimated. Z_I is instrumental variable $\pi_0, \pi_1, \pi_2,\,\pi$ are the coefficients of instrumental variable equation. u_i is the error terms in the instrumental variable equation. Estimation of parameter is normally done by using two stage least squares.

Table 1
Variables, Definition, Sources and Expected Relationship with Bank Loan

Variables	Definition, description, source	Expected Relationship
Loan Growth	The growth rate of loan supply, Source: Bank Focus	Positive/Negative
Policy Rate	Monetary policy rate of the central bank, Source: IMF	Negative
GDP	Annual growth rate of the economy, Source: IMF	Positive
Financial Development 1	Domestic credit to private sector ratio, Source: World Bank	Positive
Financial Development 2	Market Capitalization as a % of GDP, Source: World Bank	Positive
Financial Development 3	Stocks traded, as % of GDP, Source: World Bank	Positive
Policy Rate * FD_1	Interaction between monetary policy and FD_1	Positive
Policy Rate * FD_2	Interaction between monetary policy and FD_2	Positive
Policy Rate * FD_3	Interaction between monetary policy and FD_3	Positive

Results and Discussion

This study examines the impact of monetary policy on capital markets by analyzing loan growth in selected emerging economies. Different approaches have been used to assess these impacts. For this purpose, the study employs fixed effect, system-GMM and instrumental variable approach (IV regs) in the case of the sampled emerging economies. The selection of econometric methodologies for this examination was based on previous studies conducted by Lerskullawat (2017), Abuka et al. (2019), and Caporale et al. (2020).

Table 2
Correlation Results

	Loan Growth	Policy Rate	Economic Growth	FD1	FD2	FD3
Loan Growth	1.000					
Policy rate	-0.011	1.000				
Economic growth	0.053	-0.045	1.000			
Financial Development 1	0.001	-0.022	-0.008	1.000		
Financial Development 2	0.135	-0.027	0.225	-0.013	1.000	
Financial Development 3	0.030	0.041	0.009	-0.002	0.386	1.000

Table 3
Fixed Effects and SGMM Estimation

Dependent variable: Loan Growth		
	Fixed Effect	**SGMM**
L. Loan Growth	0.042***	-0.135
	(0.004)	(0.174)
Policy rate	-6.814***	-2.746**
	(1.457)	(1.199)
Economic growth	1.836	6.436***
	(2.921)	(1.549)
Financial Development 1	2.267***	2.983***
	(0.731)	(0.841)
Financial Development 2	-3.695	5.097
	(5.473)	(5.323)
Financial Development 3	1.587***	2.087***
	(0.458)	(0.667)
Policy Rate * FD1	0.079	0.672***
	(0.363)	(0.252)
Policy Rate * FD2	0.968***	0.883***
	(0.371)	(0.312)
Policy Rate * FD3	1.365**	1.208***
	(0.565)	(0.416)
Constant	75.245***	-12.402***
	(3.921)	(4.356)
N	76,518	
R-sq	0.77	

Note: ***, ** and * indicates statistical significance at 1%, 5% and 10%, respectively

When estimating causal effects from observational data, the fixed effects regression model is often employed to minimize selection bias. This model does this by removing substantial chunks of variance that are believed to include confounding variables. The elimination of between-unit variation and the production of an estimate of a variable's average effect within units over time make fixed effects models ideal for panel data sets where units are believed to differ systematically in unobserved ways that impact the outcome of interest (Allison2009; Wooldridge2010). However, social scientists frequently disregard the substantial reduction in variance caused by fixed effects despite this fact. Fixed effects allow researchers to focus on certain data dimensions, such as within-country variation (i.e., over time), and make a significant decision in their methodology (Bell and Jones 2015). Researchers miss out on a chance to explain between-unit variation when they focus on within-unit variation instead. This is because, in most cases, estimations of a causal influence may be more reliably derived from within-unit variation. Researchers describing results utilizing fixed effects should highlight the variation employed. It is essential to determine which units change over time (in the context of unit fixed effects), as units that do not fluctuate and contribute anything to one-way unit-fixed effects estimate (Troeger et al. 2007).

One of the advantages of using different techniques is that it helps analyze whether the results hold throughout the estimation process. Allows the establishment that the estimates are robust and supported by previous studies. The empirical results for capital market development and monetary policy are reported in Table 3. It is to be mentioned that the lagged loan growth is taken to assess whether there is persistence in the dependent variable. Table 3 illustrates the regression analysis of fixed effect and sys-GMM. This technique will help us find the results without inputting the biggest developing economy of our sample. The procedure of regression analysis, as shown above, is the same. The number of observations has also been reduced see Table 3. The results of the study demonstrate that the lagged loan growth is statistically positive in both fixed effect and sys-GMM; however, the level of significance at one percent in the fixed effect model shows that there is persistence in the dependent variable. The monetary policy interest rate shows negative results in both fixed effect and sys-GMM analysis. The results indicate that monetary policy negatively influences loan growth. In addition to the fixed effect model, it is observed that monetary policy is statistically insignificant at a one percent level and negatively affects loan growth. In the sys-GMM approach, monetary policy negatively affects loan growth and is statistically insignificant at a ten percent significance level. The economic growth variable shows that it, although it positively affects loan growth, is statistically insignificant in the fixed effect model. The variable, however, positively affects loan growth and is statistically significant at the conventional level while regressing in sys-GMM. Domestic credit to the private sector is termed as financial development indicator 1. This variable has been taken into account as a percentage of GDP. The results show that in both the fixed effect and sys-GMM, this variable is one percent positively significant with respect to the Lag variable of loan growth. Market capitalization as a percentage of GDP is taken into account as a financial development indicator 2. This variable explains the negative impact of market capitalization on loan growth in fixed effect; however, it implies a positive regression by using sys-GMM. Stocks traded, as % of GDP, is also a key variable in our study. This variable shows both statistically positive results with a five percent level of significance in sys-GMM regressions.

Regarding the effect of capital market development, the coefficients of Policy Rate * FD2 and Policy Rate *FD3 are positive and statistically significant. However, Policy Rate * FD1 shows a negative impact while performing the fixed effect model. The overall result is showing that higher capital market development in terms of size and activity of loan growth. Table 4 illustrates the regression analysis 2SLS. This technique will help us find the results without inputting the biggest developing economy of our sample. The procedure of regression analysis, as shown above, is the same. The number of observations has also been reduced see Table 4. The 2SLS analysis shows that there was a positive and statistically significant relationship between the lagged loan growths and persistence at the one percent level. The 2sls results for the policy interest rate used in monetary policy are negative. The findings point to a negative relationship between monetary policy and loan growth. Negative impacts indicate that tightening of monetary policy and in fact, slowing the expansion of credit. The policy interest rate influences the real economy which is transmitted through the interest rate channel to the market interest rate and the retail interest rate (aggregate output) (Claessens et al. 2017) and (Altavilla et al. 2019a). In the 2sls model, the effect of economic growth on loan growth is positive at five percent significance. The variable has a statistically significant beneficial effect on loan growth at the conventional level. The findings are supported by Obamuyi et al. (2010) and (Ndung'u, 2012). The first indicator of financial development is termed as domestic credit to the private sector. This variable has been accounted for as a proportion of the total GDP. The findings indicate that with regard to the

lagged variable of loan growth, this variable exhibits a positive significance while performing the 2sls technique. These results are also backed by the previous researchers, i.e., Obeng-Amponsah et al. (2019) and Mukuka (2019).

Table 4
Instrumental Variable Regression Results (2SLS)

Dependent variable: Loan Growth	
	2SLS
L. Loan Growth	1.409***
	(0.041)
Policy rate	-6.569**
	(2.899)
Economic growth	3.222
	(2.538)
Financial Development 1	1.138
	(0.733)
Financial Development 2	3.092***
	(0.472)
Financial Development 3	2.426***
	(0.635)
Policy Rate * FD1	0.894***
	(0.344)
Policy Rate * FD2	0.801*
	(0.466)
Policy Rate * FD3	0.382
	(0.714)
Constant	-41.647***
	(4.751)
N	76,538
R-sq	0.607

Note: ***, ** and * indicates statistical significance at 1%, 5% and 10%, respectively.

As a second part of the financial development indicator, the market capitalization expressed as a percentage of GDP is being considered as financial development indicator 2. The contribution of this variable to the favorable effect that market capitalization has on loan growth is examined. The overall worth of the firm, as determined by the current share price in addition to the total number of outstanding stocks, is known as the company's market capitalization. It is determined by multiplying the current price of a share of the firm's stock on the market by the total number of shares that are currently issued and outstanding in the company. This variable shows a negative impact of market capitalization on loan growth. The value of stocks traded as a percentage of GDP is another important factor in our research. The 2sls technique exhibits the statistical significance of financial development indicator 3 at one percent. The economy relies on loans from financial institutions to perform a number of essential services. They allow people to plan their consumption across time through the use of saving and borrowing, which in turn improves the allocation of limited resources (capital) by directing credit to the areas of the economy that are the most productive with that capital (Allen et al. 2000). The financing of stock and bond markets is another way in which banks contribute to the economy's liquidity (Diamond et al. 1983). In this way, banks are able to assist savers in managing the risk associated with their liquidity while simultaneously facilitating long-term investment, which is beneficial to the economy as a whole.

Regarding the effect of capital market development, the coefficients of Policy Rate * FD1 and Policy Rate *FD3 are positive and statistically significant. However, Policy Rate * FD2 shows a negative impact while performing the 2sls technique. The overall result is showing that higher capital market development in terms of size and activity of loan growth.

Conclusion

This study examines the effects of monetary policy on capital markets in order to undergo the bank lending channel via loan growth. The study focuses on investigating the research topic by considering 17 emerging economies, namely Bangladesh, Brazil, Cambodia, China, Indonesia, Kyrgyzstan, Malaysia, Mongolia, Myanmar, Nepal, Pakistan, Philippines, Russia, South Africa, Sri Lanka, Tajikistan, and Uzbekistan. For the implementation of the monetary policy methodology, the real interest rates of the respective economies are employed. Furthermore, the study uses the fixed effect (FE) model, system GMM, and instrumental variable regression analysis to assess the annual data of these variables comprising the years 2006 to 2021. The findings indicate that the bank lending channel is operative in emerging economies. In addition, further analyses are carried out to assess the impact of monetary policy on capital markets in a more comprehensive way. Firstly, all 17 countries were examined using the methodologies mentioned above. Secondly, we performed the additional tests by including higher lags and performing an instrumental variable regressions approach; it is feasible to determine the impact of monetary policy on capital markets in emerging economies.

Central banks actively use monetary policies to reach macroeconomic purposes. Within this framework, central banks have some monetary policy instruments, such as changing interest rates, purchasing or selling foreign exchanges, and government bonds. The results of this study reveal that there is a long-run relationship between real interest rates and loan growth. A higher monetary policy rate is obtained as a result, which negatively affects loan growth as investors and borrowers find it very costly to secure loans due to high interest rates, which eventually negatively influences loan growth in the economy. The study indicates that policy interest rates indeed enhance bank lending in the sampled economies. It is possible because it has been observed in the past literature that such data samples respond to a drop in the interest rate with a lag on loan growth. Because banks may temporarily respond to negative interest rates by raising their lending volumes, backward-looking indicators may, in reality, be skewed in terms of the durability of bank profits. It is because banks may choose to increase their lending volumes. Suppose negative interest rates continue for an extended period. In that case, banks may eventually be forced to raise their lending margins, which will result in a decrease in their lending volumes, market share, and profitability (Demiralp et al. 2019, Tan 2019).

Monetary policy contains bank lending; that is, credit supply shrinks when monetary policy increases. The interaction of Financial Development Indicators with the monetary policy has positively affected bank lending, which means that large banks and banks with better liquidity positions are in a stronger position to increase bank lending when monetary policy is decreased; that is, the effects of monetary policy are minimized with large size and better liquidity positions. The results remained robust and broadly unaltered when, firstly, higher lags were taken and, secondly, when the analysis was performed with 2sls regression. The study can be further expanded. First, the role of capital market development with additional financial development indicators should be considered in order to assess whether financial deepening enhances bank lending and

how the interaction between financial development and monetary policy influences bank lending growth in emerging economies.

Moreover, in this study, the interest rate is taken into consideration regarding monetary policy. Also, it is believed that a new study, which considers the variables of required reserve ratio and currency exchange rate as monetary policies, contributes to the literature. The study demonstrates that financial development indicators can effectively enhance the availability of loans and increase economic growth within the sampled countries. Policymakers should be alert that if they do not carefully oversee financial development in the country, the default risk of banks will rise, and bank lending channels will weaken. This weak condition of banks would result in more non-performing loan issues for banks in the future. As a result, policymakers should take financial development into account when regulating and controlling monetary policy as well as before publishing new financial development policies since these measures may weaken the economy through the channel of bank lending and make it more difficult for policymakers to control the overall economic situation. For future financial development to be successful, there must be an effective system of supervision and suitable methods for managing risk in the banking sector and capital markets.

This study also recommends that emerging economies should enhance the strength of their capital markets with more capitalization as it is noted that the mean value of market capitalization in emerging economies is very low and because the effects of capitalization were largely statistically insignificant. Second, when monetary policy tightens, then the focus should be on improving liquidity position and increasing market capitalization in order to minimize the negative effects of monetary policy on bank lending growth. In order to maintain financial stability and promote financial development, it is essential to prioritize risk management and mitigate the impact of external shocks. In order to reduce the liquidity risk that may arise during periods of economic recession and to prevent banks from excessively issuing debt, it is advisable for banks to establish loan loss reserves during prosperous economic conditions (Dickinson and Mullineux, 2001; Siregar, 2011). (LTV) loan-to-value ratio, (DTI) debt-to-income ratio and credit ceilings are macro-prudential policy tools that can be utilized to mitigate systematic risk, prevent excessive credit expansion, and tackle liquidity issues faced by banks and firms. These tools are particularly effective in regulating investment in non-productive sectors such as real estate and short-term securities, as well as managing credit card and personal loan activities (Watanagase, 2012; Oh, 2013; Nijathaworn, 2010). In order to solve the issue of maturity mismatch and enhance the financial stability of banks and enterprises, it is necessary to effectively monitor and regulate various liquidity management tools, including the liquid asset minimum holding, maximum cash outflow, maximum leverage ratio, and maximum reserve holding (Siregar, 2011).

References

Abdul Karim, Z., Azman-Saini, W. N. W., & Abdul Karim, B. (2011). Bank lending channel of monetary policy: Dynamic panel data study of Malaysia. *Journal of Asia-Pacific Business*, *12*(3), 225-243.

Afrin, S. (2017). Monetary policy transmission in Bangladesh: Exploring the lending channel. *Journal of Asian Economics*, *49*, 60-80.

Albrizio, S., Choi, S., Furceri, D., & Yoon, C. (2020). International bank lending channel of monetary policy. *Journal of International Money and Finance*, *102*, 102124.

Alfaro, R., Franken, H., García, C., &Jara, A. (2004). The bank lending channel in Chile. *Banking Market Structure and Monetary Policy*, *7*, 121-146.

Altunbas, Y., Gambacorta, L., & Marques-Ibanez, D. (2010). Bank risk and monetary policy. *Journal of Financial Stability*, *6*(3), 121-129.

Angeloni, I., Kashyap, A. K., &Mojon, B. (Eds.). (2003). *Monetary policy transmission in the euro area: a study by the eurosystem monetary transmission network*. Cambridge University Press.

Arellano, M., & Bond, S. (1991). Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. *The review of economic studies*, *58*(2), 277-297.

Bekiros, S., Dahlström, A., Uddin, G. S., Ege, O., & Jayasekera, R. (2019). A tale of two shocks: The dynamics of international real estate markets. *International Journal of Finance & Economics*, *25*(1), 3-27.

Bernanke, B. S., & Blinder, A. S. (1988). Credit, Money, and Aggregate Demand. *The American Economic Review*, *78*(2), 435-439.

Bernanke, B. S., & Gertler, M. (1995). Inside the black box: the credit channel of monetary policy transmission. *Journal of Economic perspectives*, *9*(4), 27-48.

Borio, C., &Gambacorta, L. (2017). Monetary policy and bank lending in a low interest rate environment: diminishing effectiveness?. *Journal of Macroeconomics*, *54*, 217-231.

Bräuning, F., &Ivashina, V. (2020). US monetary policy and emerging market credit cycles. *Journal of Monetary Economics*, *112*, 57-76.

Bustaman, Y. (2019). Monetary Shock, Banking Risk and Bank Lending Channel: Evidence from Indonesian Banking Industry. *Int. Journal of Economics and Management*, *13*(2), 381-392.

Chen, M., Wu, J., Jeon, B. N., & Wang, R. (2017). Monetary policy and bank risk-taking: Evidence from emerging economies. *Emerging Markets Review*, *31*, 116-140.

Chowdhury, R. A., Jahan, D., Mishra, T., &Parhi, M. (2022). Monetary policy shock and impact asymmetry in bank lending channel: Evidence from the UK housing sector. *International Journal of Finance & Economics*.

Correa, R., Paligorova, T., Sapriza, H., &Zlate, A. (2022). Cross-border bank flows and monetary policy. *The Review of Financial Studies*, *35*(1), 438-481.

Dickinson, David G., and Andrew W. Mullineux. "Lessons from the East Asian financial crisis: a financial sector perspective." *Geoforum 32, no. 1 (2001): 133-142.*

Duan, K., Mishra, T., Parhi, M., & Wolfe, S. (2019). How effective are policy interventions in a spatially-embedded international real estate market?. *The Journal of Real Estate Finance and Economics*, *58*, 596-637.

Ehrmann, M., Gambacorta, L., Martinez-Pagés, J., Sevestre, P., & Worms, A. (2001). The effects of monetary policy in the euro area. *Oxford Review of Economic Policy*, *19*(1), 58-72.

Ferri, G., Kalmi, P., &Kerola, E. (2014). Does bank ownership affect lending behavior? Evidence from the Euro area. *Journal of Banking & Finance*, *48*, 194-209.

FH Tunio, K Agha, MA Khan, M Kishore, AA Nabi (2020), the impact of cash flow on share price of firms: a case study on gas & oil marketing industry of pakistan; PalArch's Journal of Archaeology of Egypt/Egyptology, 2020

Furceri, D., & Choi, S. (2018). *Uncertainty and Cross-Border Banking Flows* (No. 2018/004). International Monetary Fund.

Gambacorta, L. (2005). Inside the bank lending channel. *European Economic Review*, *49*(7), 1737-1759.

Halvorsen, J. I., & Jacobsen, D. H. (2016). The bank-lending channel empirically revisited. *Journal of financial stability*, *27*, 95-105.

Hussain, M., & Bashir, U. (2019). Impact of monetary policy on bank lending: does market structure matter?. *International Economic Journal*, *33*(4), 620-648.

Huybens, E., & Smith, B. D. (1999). Inflation, financial markets and long-run real activity. *Journal of monetary economics*, *43*(2), 283-315.

Imran ULLAH, Fayaz Hussain TUNIO, Zia ULLLAH, Agha Amad NABI (2022); The Impact of Capital Account Openness on Income Inequality: Empirical Evidence from Asia; Journal of Asian Finance, Economics and Business Vol 9 No 2 p 0049–0059

Jiménez, G., Ongena, S., Peydró, J. L., &Saurina, J. (2012). Credit supply and monetary policy: Identifying the bank balance-sheet channel with loan applications. *American Economic Review*, *102*(5), 2301-2326.

Kashyap, A. K., & Stein, J. C. (1995). The role of banks in monetary policy: A survey with implications for the European monetary union. *Economic Perspectives-Federal Reserve Bank of Chicago*, *21*, 2-18.

Kashyap, A. K., & Stein, J. C. (2000). What do a million observations on banks say about the transmission of monetary policy?. *American Economic Review*, *90*(3), 407-428Kasman, S., Vardar, G., &Tunç, G. (2011). The impact of interest rate and exchange rate volatility on banks' stock returns and volatility: Evidence from Turkey. *Economic Modelling*, *28*(3), 1328-1334.

Khan, H. H., Ahmad, R. B., & Gee, C. S. (2016). Bank competition and monetary policy transmission through the bank lending channel: Evidence from ASEAN. *International Review of Economics & Finance*, *44*, 19-39.

Kishan, R. P., &Opiela, T. P. (2000). Bank size, bank capital, and the bank lending channel. *Journal of Money, credit and banking, Vol. 32, No. 1, pp. 121-141*

Kishan, R. P., &Opiela, T. P. (2006). Bank capital and loan asymmetry in the transmission of monetary policy. *Journal of Banking & Finance*, *30*(1), 259-285.

Lerskullawat, A. (2017). Effects of banking sector and capital market development on the bank lending channel of monetary policy: An ASEAN country case study. *Kasetsart Journal of Social Sciences, 38(1), 9-17.*

Matousek, R., &Sarantis, N. (2009). The bank lending channel and monetary transmission in Central and Eastern European countries. *Journal of Comparative Economics*, *37*(2), 321-334.

Merrino, S. (2021). *State-dependent fiscal multipliers and financial dynamics: An impulse response analysis by local projections for South Africa* (No. 2021/77). WIDER Working Paper.

Morais, B., Peydró, J. L., Roldán-Peña, J., & Ruiz-Ortega, C. (2019). The international bank lending channel of monetary policy rates and QE: Credit supply, reach-for-yield, and real effects. *The Journal of Finance*, *74*(1), 55-90.

Mushtaq, S., & Siddiqui, D. A. (2017). Effect of interest rate on bank deposits: Evidences from Islamic and non-Islamic economies. *Future Business Journal*, *3*(1), 1-8.

Nijathaworn, Bandid. "Regional financial supervision–challenges and the way forward for Asia." *Remarks at the Conference on Macroeconomic and Financial Stability in Asian Emerging Markets, Organised by the Bank Negara Malaysia and Asian Development Bank Institute, Kuala Lumpur*. Vol. 4. 2010.

Newman Wadesango , L. Nani , Charity Mhaka , Ongayi Vongayi Wadesango An analysis of the impact of liquidity constraints on new financial product development: case of ZB bank. *Risk Governance and Control: Financial Markets and Institutions , volume 7 , issue 3 , p. 65*

Ogawa, K., &Kitasaka, S. I. (2000). *Bank Lending in Japan: its Determinants and Macroeconomic Implications* (No. 0505). Institute of Social and Economic Research, Osaka University.

Olivero, M. P., Li, Y., & Jeon, B. N. (2011). Competition in banking and the lending channel: Evidence from bank-level data in Asia and Latin America. *Journal of Banking & Finance*, *35*(3), 560-571.

Oh, Onook, Manish Agrawal, and H. Raghav Rao. "Community intelligence and social media services: A rumor theoretic analysis of tweets during social crises." *MIS quarterly* (2013): 407-426.

Papadamou, S., &Siriopoulos, C. (2014). Interest rate risk and the creation of the Monetary Policy Committee: Evidence from banks' and life insurance companies' stocks in the UK. *Journal of Economics and Business*, *71*, 45-67.

Peña, G. (2015). *Does monetary policy affect lending? Evidence from some panel data* (No. 103882). University Library of Munich, Germany.

Petkovski, M., &Kjosevski, J. (2014). Does banking sector development promote economic growth? An empirical analysis for selected countries in Central and South Eastern Europe. *Economic research-Ekonomskaistraživanja*, *27*(1), 55-66.

Ramos-Tallada, J. (2015). Bank risks, monetary shocks and the credit channel in Brazil: Identification and evidence from panel data. *Journal of International Money and Finance*, *55*, 135-161.

Roodman, D. (2006, July). How to Do xtabond2. In *North American Stata Users' Group Meetings 2006* (No. 8). Stata Users Group.

Roodman, D. (2009). How to do xtabond2: An introduction to difference and system GMM in Stata. *The stata journal, 9(1), 86-136.*

Sáiz, M. C., Azofra, S. S., Olmo, B. T., & Gutiérrez, C. L. (2018). A new approach to the analysis of monetary policy transmission through bank capital. *Finance Research Letters*, *24*, 95-104.

Sapriza, H., &Temesvary, J. (2020). Asymmetries in the bank lending channel of monetary policy in the United States. *Economics Letters*, *189*, 109050.

Shim, I., & Shin, K. (2021). Financial stress in lender countries and capital outflows from emerging market economies. *Journal of International Money and Finance*, *113*, 102356.

Shokr, M.A. and Al-Gasaymeh, A., 2018. Bank lending channel and banking sector efficiency: panel data of Egypt. *International Journal of Emerging Markets, 13(5), pp.1291-1310.*

Simpasa, A., Nandwa, B., &Nabassaga, T. (2015). Bank lending channel in Zambia: empirical evidence from bank level data. *Journal of Economic Studies*, *42*(6), 1159-1174.

Siregar, R., 2011. The Concepts of Equilibrium Exchange Rate: A Survey of Literature. *MPRA Paper No. 28987, posted 22 Feb 2011.*

Shuja, S. M., & Tunio, F. H. (2024). Effects of Monetary Policy on Emerging Market Economies: Study Perspective from Bank Lending Channel. *Journal of Development and Social Sciences, 5(1),* 481–493.

Tian Y, Tunio FH (2023) Assessing financial risks of foreign agricultural investment in belt and road countries: A risk index approach and VHSD-EM model analysis. *PLoS ONE 18(12): e0293146. https://doi.org/10.1371/journal.pone.0293146*

Tuna, G., &Almahadin, H. A. (2021). Does interest rate and its volatility affect banking sector development? Empirical evidence from emerging market economies. *Research in International Business and Finance, 58, 101436.*

Wu, J., Luca, A. C., & Jeon, B. N. (2011). Foreign bank penetration and the lending channel in emerging economies: Evidence from bank-level panel data. *Journal of international money and finance*, *30*(6), 1128-1156.

Yang, J., & Shao, H. (2016). Impact of bank competition on the bank lending channel of monetary transmission: Evidence from China. *International Review of Economics & Finance, 43, 468-481.*

Ziaei, S. M. (2012). Transmission mechanisms of monetary policy in Saudi Arabia: evidence from SVAR analysis. *Journal of Modern Accounting and Auditing*, *8(7), 990.*

Zulkhibri, M. (2013). Bank-characteristics, lending channel and monetary policy in emerging markets: Bank-level evidence from Malaysia. *Applied Financial Economics*, *23(5), 347-362.*