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# INDONESIAN CAPITAL MARKET REVIEW

## Bank Ownership and Decline in Loan Growth due to the Pandemic

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This study aims to analyze the effect of bank ownership structure on loan growth before and during the pandemic. Specifically, we developed four models to capture different loan types provided in the Indonesian banking system; working capital, investment, consumer, and total loan growth. This study used 150 observations of commercial banks for 2019 (before the pandemic) and 2020 (during the pandemic). We conducted the regression method to test hypotheses. The main finding of this study was that foreign banks' consumer credit growth significantly lower than domestic banks. Similar findings occurred for other types of loans, and this conclusion has controlled for the adverse effects of the pandemic. This finding means that foreign banks in Indonesia are not substitutes for loan suppliers in the domestic market and tend to behave pro-cyclical. The government needs to carry out regulations to reduce the risk-accelerate nature of foreign banks in the Indonesian economy.

**Keywords:** *Bank Ownership Structure; Bank Loan Growth; Working Capital Loan; Investment Loan; Consumption Loan; Pandemic Crisis.*

**JEL Classification:** F23; F31; G2; G31.

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### Introduction

The bank's lending activities are a critical source of capital for a national economy to ensure that the production process in an economy takes place continuously (Wu et al., 2022). The banking market promotes other activities, such as providing commercial or business loans (Clarke et al., 2003) and consumer financing for citizens (Tabak et al., 2022). The extensive interconnection of world markets marked the last decade. The banking sector experienced the same development. Technological advances from developed countries accelerate the change in the banking industry (Bouzgarrou et al., 2018). Banks from one country are increasingly connected by cross-border interbank

lending relationships and ownership ties (Cao et al., 2018).

The existence of foreign banks has become a common phenomenon throughout the world. Since the 1990s, countries have witnessed a significant restructuring of their banking sector due to financial liberalization and deregulation. In emerging countries during 1995-2009, this restructuring was characterized by a considerably higher presence of foreign banks, which increased by 74% and approximately doubled their market share (Wu et al., 2017). In Indonesia, as amended by Law No. 10 of 1998, Article 22 mentioned that the establishment of commercial banks can be carried out by (i) Indonesian citizens or Indonesian legal entities; (ii) Indonesian citizens or legal entities with foreign

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citizens or foreign legal entities in partnership.

These foreign banks bring many benefits to a country's economy, shape how domestic banking operates (Bouzgarrou et al., 2018), increase commercial bank loan growth (Vithessonthi, 2023), and provide liquidity to the economy. However, these benefits come with some costs, such as weakening the competitiveness of domestic banks (Yildirim et al., 2021) and creating a higher risk for the host country's economy (Wu et al., 2017; Wu et al., 2022). The ownership structure influences a bank's behavior (Agoraki & Kouretas, 2021). Atahau & Cronje (2020) argue that the ownership structure of a bank affects its loan portfolio. According to Clarke et al. (2003), foreign banks in developing countries allocate a more significant portion of their loan portfolio to commercial or industrial loans. Meanwhile, domestic banks are more competitive in developing relationship-based lending (Degryse et al., 2012) based on soft information. Relationship lending is more difficult to adopt by a foreign bank. Thus, domestic banks loan more heavily on consumer loans or working capital loans for SMEs.

Under normal economic conditions, the risks posed due to the existence of foreign banks may be mitigated at an affordable cost. However, the situation may be different in a crisis. Internationally transmitted crises might be difficult to control (Dungey & Gajurel, 2015). Recently, the world experienced an economic shock due to the covid-19 pandemic. The COVID-19 pandemic spread rapidly worldwide, putting health issues in markets worldwide in a crisis. Referring to data from the Indonesian central statistics bureau, Syihab & Dalimunthe (2022) stated that the pandemic impacted Indonesian SMEs by a decreased income of 84.2% and a financial constraint of 62.21%. Measures taken to minimize the spread of the virus created an enormous shock to the economy. During the shock, the financial sector, and banks, in particular, are expected to play a critical role in absorbing the shock by supplying the funding needed (Dungey & Gajurel, 2015) to support the business sectors and ultimately restore the aggregate economy (Ahmad et al., 2019).

Vithessonthi (2023) described how loan

growth shows a more substantial positive influence on non-performing loans during financial crisis periods. Furthermore, particularly for Indonesia, during the pandemic shock, there were fears that the 1997-1998 crisis would repeat. The 1997/1998 financial crisis was an internationally transmitted monetary crisis. The crisis quickly spread to real economic activities through the banking sector and created severe damage. Indonesia's central bank had to intervene in the banking sector. They are including by adopting of blanket guarantee scheme in 1998 and limited guarantee in 2005 (Hadad et al., 2011), providing liquidity to the market through a less stringent requirement to access central bank funds, taking over bad loans from banks, and directly injecting funds through equity positions (Agusman et al., 2014). Those measures were costly, but without that intervention, the Indonesian banking system could have collapsed (Agusman et al., 2014).

The monetary shock caused banks to experience liquidity difficulties and experienced a tremendous credit crunch. Therefore, the essential research question here is whether the COVID-19 pandemic has impacted lending growth in Indonesia and whether there are differences in lending behavior between foreign and domestic banks. This research contributes to the banking sector research, especially during the crisis caused by the covid-19 pandemic. The result of this study is input for regulators who constantly monitor risks in the banking sector to prevent a repeat of the 1997-1998 crisis. In particular, foreign vs. domestic bank behavior analysis is crucial because more than 90% of the Indonesian economy sector are SMEs. Research by Hoffmann et al. (2022) points out that countries with many SMEs mainly dependent on the domestic bank might become more vulnerable to a shock that affects domestic banking. Different features of how the domestic and foreign bank operates make SMEs' need for funds during the shock not readily provided by a foreign bank.

This article is organized into several sections. The first part described the research background, then followed by a literature review in the second part. The research method will be presented in the third section, followed

by results and discussion in the fourth section. Research conclusions are presented in the fifth section before listing the references used.

## Literature Review

### *Credit Crunch Theory and Market Crisis*

A credit crunch is a situation where the supply curve of bank loans shifts to the left (Bernanke & Gertler, 1995). In the credit crunch, there is a significant contraction in the availability of loanable funds. It is also described as the leftward shift of the bank loan supply curve without changing borrowers' interest rates and quality. A financial crisis generally refers to a period of extreme pressure on the financial markets. Credit crunch might be due to economic shock, internal source, or transmitted from external shock. However, a credit crunch may result from either credit supply or demand factors. Credit crunch might be due to the weakening demand for a loan due to economic recession, hence driving down credit supply (Bernanke & Gertler, 1995; Peek & Rosengren, 1995).

History records several significant events related to the financial crisis, such as The Great Depression of 1930 and The Global Financial Crisis of 2008. The recent crisis was caused by the Covid-19 Pandemic, which the International Monetary Fund (IMF) called the Great Lockdown (Sogani, 2020). The IMF reveals that the current crisis (The Great Lockdown) was the worst global economic downturn after The Great Depression of 1930. It is because the Covid-19 crisis is an exogenous public health shock and is facing pressure from both the demand and supply sides of the economy (Sogani, 2020).

### *Foreign Banks vs. Domestic Banks' Behavior*

The role of foreign or foreign-owned domestic banks in the banking system has become more critical (Cao et al., 2018) to provide liquidity, lowering loan costs and thus reducing credit crunch in an economy (Hsieh & Lee, 2020). However, the increasing penetration of foreign banks brings certain risks to domestic

banks and makes competition in this sector more fierce (Wu et al., 2022). Xu (2011) stated that foreign banks are experienced in foreign exchange business and international trade financing. Foreign banks can provide more sophisticated banking services to their clients, thus becoming a competitive threat to domestic banks (Bouzgarrou et al., 2018). Meanwhile, Indonesian domestic banks heavily provide consumers loan for citizens or business loans for SMEs. Domestic banks have better information about local small firms and often engage in long-term relationships with their borrowers. Domestic banks can develop a relationship lending, a process to build a robust and long-term relationship between lender and borrower by putting more trust in the prior relationship (Syahid & Dalimunthe, 2017). In relationship lending, a lending decision is heavily based on soft information and requires further understanding of the integrity of the borrowers (De-gryse et al., 2012).

The level of competition in the banking market is partly explained by how a foreign bank enters the host market and whether the foreign bank is owned by a strong parent who provides internal support (Wu et al., 2017). Foreign banks' impacts on domestic banks' risk are more pronounced when they enter the host market via M&A, as opposed to greenfield investments, and when they belong to foreign conglomerates with strong financing support (Wu et al., 2017). In Indonesia, after the 1997/1998 crisis, foreign banks enter through the purchase of existing local banks under the divestment program (Mulyaningsih et al., 2015). This method reduces the number of domestic banks and competition posed by newly entered foreign banks. Ultimately, Bouzgarrou et al. (2018) found that foreign banks are more profitable than domestic banks, and foreign banks from advanced economies are more profitable than foreign banks from emerging economies. Based on the previous study, in this research, we propose the hypothesis:

- H1: Credit risk has a significant effect on a bank's loan growth
- H2: Profitability has a significant effect on a bank's loan growth

On the other hand, Agoraki & Kouretas (2021) argues that bank ownership structure also affects the banks' behavior in lending. The banks' ownership influences their loan portfolios (Atahau & Cronje, 2020). Clarke et al. (2003) point out that foreign banks in developing countries allocate a more significant portion for commercial and industrial loans. It is in line with the studies by Weill (2003), Haas et al. (2010), and Kowalewski (2019), which revealed that foreign banks generally focus on serving corporate customers whose types of loans are working capital and industrial loans. This different type of loan and customer focus also links to the information and relationship the banks have with their customers. Haas et al. (2010) mention that domestic and foreign banks have access to different client information and process the information differently. Domestic banks can develop a relationship lending, a process to build a robust and long-term relationship between lender and borrower by putting more trust in the prior relationship (Syahid & Dalimunthe, 2017). In relationship lending, a lending decision is heavily based on soft information. It requires a further understanding of the integrity of the borrowers (Degryse et al., 2012), which is more difficult to adopt by a foreign bank. Foreign banks have difficulty processing soft information as they lack local knowledge. Thus they often use "hard information" using standardized methodologies to grant a loan, and often on a transaction-by-transaction basis (Haas et al., 2010). Hence, foreign banks usually perform "transaction lending" toward their customers.

### ***Foreign Bank Lending During Crisis***

Previous studies show that banks' ownership structures behave differently during a financial crisis. Research by Albertazzi & Bottero (2014) investigates the dynamics of foreign vs. domestic credit supply in Italy around the Lehman collapse and found that foreign lenders cut the credit supply more sharply than their domestic counterparts (Albertazzi & Bottero, 2014). Bonin & Louie (2017) evaluated the impact of the financial crisis of 2008 on the banking sector in

eight emerging Europe countries. He found that multinational banks who treated these countries as a 'second home market remained committed to the region in their lending behavior, similar to domestic banks. Similarly, Hsieh & Lee (2020) stated that the nationality of a bank affected bank lending in 2008 and found that Asian banks with a higher level of foreign ownership tend to experience more sharp loan decline. Contrariwise, the other foreign banks active in the region were involved in fueling the credit boom but then decreased their lending aggressively during the crisis periods. In sum, foreign banks typically lend more than domestic banks during boom periods but aggressively cut their loan than domestic banks during crisis periods (Bonin & Louie, 2017; Hsieh & Lee, 2020). Based on the previous study, in this research, we propose the hypothesis:

H3: Loan growth before the pandemic is higher in foreign banks than in domestic banks

H4: Loan growth during the pandemic is lower in foreign banks than in domestic banks

### ***Liquidity Shock during Crisis***

According to Dungey & Gajurel (2015), banking crises transmitted from other jurisdictions present a considerable risk to the domestic economy. Meanwhile, the ownership structure in the banking industry has a strong relationship with bank lending behavior (Cao et al., 2018). There is a kind of internal capital market within international banking groups, thus providing a theoretical explanation regarding how liquidity shock is transmitted from a parent through ownership structure (Cao et al., 2018). Thus, a country with a high portion of foreign bank penetration would be exposed to external shock transmitted through a foreign bank.

Liquidity has become a primary concern in the banking sector during the financial crisis, especially when liquidity issues become systemic problems. Banks with sufficient capital, liquid assets, and stable funding structures can more effectively maintain their intermediation capacity amid external adverse economic shocks (Kim & Sohn, 2017). Policymakers and regulatory authorities are rightly concerned with

the systematic (Dungey & Gajurel, 2015). The government needs to intensify the intervention and fuel the market with liquidity to prevent the market from collapsing. Bonin & Louie (2017) studied bank behavior during crisis periods in the region and, by extension, in other small countries where foreign financial institutions with different business models dominate banking sectors.

During the pandemic recession, bank loans, especially the productive ones, are very much needed to support the business sectors and ultimately restore the aggregate economy (Ahmad et al., 2019). In this regard, a government needs support from the banking sector, including burden sharing. Liquidity support, borrower assistance programs, and monetary easing moderated the adverse impact of the crisis (Demirgüç-Kunt et al., 2021). These insights have significant consequences for central banks and banking supervisory authorities. Based on the previous study, we propose the hypothesis:

H5: Bank liquidity has a positive effect on loan growth

H6: Bank capitalization has a positive effect on loan growth

## Research Method

### Data

This study uses secondary data from Indonesian banks during 2019 and 2020. Data for 2019 reflects the pre-crisis period, while 2020 reflects the crisis period. We collected data from each bank's financial report. After a data cleaning process to screen the data, 75 commercial banks were selected as samples. Therefore, this study uses a total of 150 observations.

### Research Model and Operationalization of Variables

We use the bank's loan as the dependent variable in this study and use 4 (four) measurements for loan growth; thus, we use four models with similar independent variables. Four different loan growth measurements are; (a) to-

tal loan growth (TC), (b) working capital loan growth (WC), (c) investment loan growth (IS), and (d) consumption growth (C). The equation for each model are:

Model 1

$$\text{Growth\_TC}_i = \alpha + \beta_1 \text{Risk}_i + \beta_2 \text{Profit}_i + \beta_3 \text{dCrisis}_i + \beta_4 \text{dOwn}_i + \beta_5 \text{Car}_i + \beta_6 \text{Liq}_i + e_i$$

Model 2

$$\text{Growth\_WC}_i = \alpha + \beta_1 \text{Risk}_i + \beta_2 \text{Profit}_i + \beta_3 \text{dCrisis}_i + \beta_4 \text{dOwn}_i + \beta_5 \text{Car}_i + \beta_6 \text{Liq}_i + e_i$$

Model 3

$$\text{Growth\_IS}_i = \alpha + \beta_1 \text{Risk}_i + \beta_2 \text{Profit}_i + \beta_3 \text{dCrisis}_i + \beta_4 \text{dOwn}_i + \beta_5 \text{Car}_i + \beta_6 \text{Liq}_i + e_i$$

Model 4

$$\text{Growth\_C}_i = \alpha + \beta_1 \text{Risk}_i + \beta_2 \text{Profit}_i + \beta_3 \text{dCrisis}_i + \beta_4 \text{dOwn}_i + \beta_5 \text{Car}_i + \beta_6 \text{Liq}_i + e_i$$

Meanwhile, independent variables in this study are (a) the bank's credit risk, (b) the bank's profitability, (c) a dummy variable reflecting a period of pre-crisis and during the crisis, (d) a dummy variable reflecting the bank's ownership structure, (e) banks capital adequacy ratio and (f) banks liquidity. We also use the bank's size as a control variable, measured with the natural logarithm of the bank's total assets. Table 1 exhibits the summary of the definition of each variable.

### Analysis Method

This study uses Stata 14 to carry out the panel regression estimation. Before the analysis, we tested the model statistically to check its robustness. Those tests consist of a multicollinearity test, autocorrelation test, and heteroscedasticity test. Moreover, if there is outlier data, we exclude it from each model before running the regression. The following section describes the result of the F-test and t-test.

## Results

Table 2 presents the descriptive statistics of variables after the data-cleaning process. The

Table 1. Operational Definitions of Variables

Variables	Measurement
Total Loan Growth	Percentage change in bank's total loan from the previous year
Working Capital Loan Growth	Percentage change in bank's working capital loan from the previous year
Investment Loan Growth	Percentage change in bank's investment loan from the previous year
Consumption Loan Growth	Percentage change in bank's consumption loan from the previous year
Credit risk	A bank's non-performing loan (NPL)
Profitability	ROA (return on total assets) is a ratio of net income to the bank's total assets
Crisis Period	Dummy variable; 1 for 2020 (during the crisis period) and 0 (zero) for 2019 (pre-crisis period)
Ownership	Dummy variable; 1 for foreign banks and 0 (zero) for domestic bank
Capitalization	Capital Adequacy Ratio from respective years
Liquidity	The ratio of liquid assets to total assets

Table 2. Descriptive Statistic of Variables

Variables	Obs.	Means	Std	Minimum	Maximum
Dependent Variables					
GROWTH_TC	150	0.03086	0.20608	-0.62199	1.25089
GROWTH_WC	150	0.03353	0.27360	-0.61806	1.88825
GROWTH_IS	148	0.03918	0.29156	-0.77873	1.15758
GROWTH_C	142	0.06643	0.35492	-0.62972	1.88178
Independent and control variables					
Risk (% of NPL)	150	0.03220	0.02409	0	0.2227
Profitability (% of ROA)	150	0.01414	0.01352	-0.0461	0.0467
CRISIS (dummy variable)	150	0.5	0.50166	0	1
OWNERSHIP (dummy variable)	150	0.34	0.47530	0	1
CAR	150	0.25859	0.12530	0.0901	0.9463
LIQ	150	0.30706	0.11657	0.10492	0.84993
Size (ln of total assets)	150	17.2519	2.19678	13.7681	30.8933

Note. Obs = Observation, Std. Dev = Standard Deviation, Min = Minimum, Max = Maximum

Table 3. Regression Result

Variables	Coefficient (sig) Model 1	Coefficient (sig) Model 2	Coefficient (sig) Model 3	Coefficient (sig) Model 4
Risk	-1.217 (**)	-1.944 (*)	-0.408	0.716
Profitability	-0.055	0.921	1.182	-0.817
dCrisis	-0.064(*)	-0.043	-0.041	-0.132***
dOwnership	-0.096***	-0.106**	0.042	-0.161**
CAR	0.025	-0.008	-0.090	0.234
Liquidity	-0.375**	-0.487**	-0.186	-0.188
Size	-0.002	-0.016	0.014	-0.007
Constanta	0.293**	0.562**	-0.129	0.309
obs	150	150	148	142
F-Stat (sig)	2.99**	18.39**	0.85	16.88**
R-squared	0.1326	0.1240	0.041	0.0839

Note: (\*\*\*),(\*\*), and (\*) indicate 1%, 5%, and 10% significance level

total loan growth falls from -62% to 125%, with an average of 3%. The minimum value of -62.20% comes from BPD Sumatera Utara in 2019, and the maximum value of 125.09% comes from BPD Sulawesi Tenggara in 2020. Specified by its category, the average working capital and investment loan growth are similar to the average total loan growth, which lies around 3%. The highest value of working capital loan growth (188.82%) comes from BPD Jambi in 2020, and the lowest value (-61.81%)

comes from BPD Sumatera Utara. As for the investment loan growth, BPD Sulawesi Tenggara also recorded the highest growth of 115.76% in 2020 during the crisis.

On the other hand, the lowest value (-77.8%) came from BPD Jambi in 2020. This data implies that although BPD Jambi recorded the highest growth of working capital growth in 2020, its investment loan had the most profound decline. Moving on to consumption growth, Table 2 shows an average of 6%, higher than

the other three types of loans. The maximum value (188.18%) was from Bank Aceh Syariah in 2020, while the minimum value (-62.97%) was from BPD Sumatera Utara in 2019.

Table 3 presents the regression results for the four models using 150 observations for Model 1 and Model 2, 148 observations for Model 3, and 142 observations for Model 4. The table shows significant global F tests for Models 1, 2, and 4, which F-statistics represent at 5% and 10% significance levels. However, on the other hand, Model 3 is not valid to analyze, as shown by the F-statistic value below 5%. In other words, Models 1, 2, and 4 are valid to analyze. Each model's independent variables jointly affect the dependent variables (total loan growth, working capital loan growth, and consumption loan growth). As for Model 3, since the global significance represented by F-statistic is insignificant, the model cannot explain the investment loan growth. The table also shows that none of the variables in Model 3 are individually significant, so there is no relationship between the independent variables and the investment loan growth. Furthermore, the regression results show that each model has explanatory power (r-squared) of 13.26% (Model 1), 12.40% (Model 2), 4.1% (Model 3), and 8.39% (Model 4), respectively. This study has low R<sup>2</sup> values for each model.

## Discussion

From Table 3, a significant negative coefficient is found between crisis and total loan growth and between crisis and consumer loan growth. This finding shows a significant decline in banks' total loan growth and consumption loan growth during the pandemic crisis in 2020. A coefficient of -0.064 for dCrisis in Model 1 implies that the total loan growth during the Covid-19 pandemic crisis (2020) was 6.38% lower than during the pre-crisis period (2019). This result supports a previous study conducted by Agoraki & Kouretas (2021), which proves that the Global Financial Crisis of 2008-2009 had a negative and significant impact on total loan growth in European countries. It means that loan growth during the 2008-2009 finan-

cial crisis was higher than during the non-crisis years. The coefficient for model 4 is -0.1384, which means that during the pandemic crisis in 2020, banks' consumption loan growth was lower by as much as 13.84% than the previous year when there was no crisis.

The coefficient values show that the consumption loan growth decline is more profound than the total loan growth decline. Two reasons explain this condition; first, the supply side of the bank itself. Banks may have a high-risk perception towards consumer loans compared to other loans, indicated by the risk premium on consumption loans which had the highest increase among other types of loans. This results in the high-interest rate of consumption loans, even though the government has sought to reduce interest rates through monetary policy. The second reason is the demand factor which is reflected by the consumer confidence index (CCI). Indonesia's CCI has experienced a substantial decline from 113.8 in March 2020 to 77,8 in May 2020 and remained under 100 until April 2021. The pandemic has left people in isolation, causing consumption to be sluggish and the economy stagnating, thus driving down credit card loans remarkably.

Conversely, the working capital and investment loan growth is not found to be significant, although they declined during the pandemic, as reflected by the negative coefficient. One of the reasons for this result could be the government's policy of providing credit guarantees for businesses. This policy aims to overcome banks' risk-averse behavior in lending during the pandemic.

Furthermore, significant negative results are found between ownership and total loan, working capital loan, and consumption loan growth. On the contrary, investment loan growth is not found to be significant since the overall model is not significant either. A coefficient of -0.0958 means that the foreign banks' total loan growth is 9.58% lower than that of domestic banks. This result aligns differently with Kowalewski (2019), who claims that foreign banks significantly positively impact total loan growth, meaning that the growth is higher than that of



government and domestic private banks. Moving on, the coefficient value of Model 2 is -0.1061, meaning that foreign banks' working capital loan growth is lower by 10.61% than domestic banks. This finding does not align with Agoraki & Kouretas (2021), who prove that foreign banks have a significant positive relationship on commercial and industrial loans aimed at the business sector in EU-15 countries. Atahau & Cronje (2020) also found a contrary finding where the proportion of foreign banks' working capital loans is higher than domestic banks. Moreover, a coefficient of -0.1610 means that foreign banks' consumption loan growth is 16.10% lower than domestic banks. This result also does not align with Agoraki & Kouretas (2021), who find that foreign banks' consumption loan growth in EU-15 countries is higher than that of domestic banks. Furthermore, Kowalewski (2019) also proves that foreign banks' subsidiaries positively affect consumption loan growth. However, in general, those findings supported Bonin & Louie (2017) and Hsieh & Lee (2020), who stated that foreign bank cut their loan deeper than domestic banks during the crisis.

Table 3 shows that only liquidity and loan risk significantly affect loan growth, total loan growth, and working capital loan growth. Since the coefficients are all negative, liquidity and loan risk (measured by NPL) negatively affect the total loan and working capital loan growth. This finding does not support previous studies by Nguyen & Dang (2020) and Agoraki & Kouretas (2021), which claim a significant positive relationship between liquidity and loan growth. The negative relationship might be because banks with high liquidity usually put their funds in liquid assets, thereby limiting the availability of loans that can be distributed (Kim & Sohn, 2017). Regarding loan risk measured by NPL, the finding imply that banks with high NPL will likely reduce the total loan and working capital loan growth. This finding supports previous findings by Nguyen & Dang (2020), who revealed that NPL negatively affects banks' loan growth, even though they do not specify which type of loan.

## Conclusion

This study aims to analyze the impact of the pandemic-driven economic crisis and bank ownership structure on loan growth for Indonesian banks. We use loan measurement in this study based on loan types used by the Indonesian banking authority: working capital, investment, and consumer loan. We found that loan growth during the pandemic crisis was significantly lower than before the crisis period. This finding supports the loan crunch theory, which stipulates that credit contraction occurs during a financial crisis. Specifically, in this study, we found that the negative effect of the pandemic is profound on consumers' loans. However, a more important finding is that foreign bank loan growth was significantly lower than domestic banks for the four loan sizes used. This finding means that after controlling for crisis factors due to the pandemic, foreign banks are still experiencing lower credit growth compared to domestic banks. This finding supported previous studies stating that foreign bank operations in emerging countries tend to fuel the market with liquidity during a good period and dry the market during a bad period. In other words, foreign bank in Indonesia increases the economic risk. However, this study has several limitations. First is the limited observation period, which is only two years, due to the pandemic situation that had just happened before this study was conducted. Hence, we suggest further research to extend the observation period before and after the 2020 pandemic crisis. Moreover, the bank-specific variables in this study are limited and might not capture other variables that may explain loan growth. Therefore, further study might need to seek other more representative variables in explaining loan growth.

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## Declaration of Conflicting Interests

The authors declare that there is no known competing financial interests or personal rela-

tionship that could have appeared to influence the work reported in this paper.

## References

- Agoraki, M.-E. K., & Kouretas, G. P. (2021). Loan growth, ownership, and regulation in the European Banking Sector: Old versus new banking landscape. *Journal of International Financial Markets, Institutions and Money*, 75, 101450. <https://doi.org/10.1016/j.intfin.2021.101450>
- Agusman, A., Cullen, G. S., Gasbarro, D., Monroe, G. S., & Zumwalt, J. K. (2014). Government intervention, bank ownership and risk-taking during the Indonesian financial crisis. *Pacific-Basin Finance Journal*, 30, 114–131. <https://doi.org/10.1016/j.pacfin.2014.07.003>
- Ahmad, N. F. G., Zamil, N. A. M., Basiruddin, R., & Saruchi, A. (2019). Ownership Structure, Bank Capital and Bank Lending/Financing Behaviour in a Dual Banking System. *International Journal of Engineering and Advanced Technology*, 8(5C), 233–237. <https://doi.org/10.35940/ijeat.E1034.0585C19>
- Albertazzi, U., & Bottero, M. (2014). Foreign bank lending: Evidence from the global financial crisis. *Journal of International Economics*, 92, S22–S35. <https://doi.org/10.1016/j.jinteco.2014.01.002>
- Atahau, A. D. R., & Cronje, T. (2020). Bank lending: The bank ownership focus in the pre-and post-global financial crisis periods. *Economic Systems*, 44(4), 100813. <https://doi.org/10.1016/j.ecosys.2020.100813>
- 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.
- Bonin, J. P., & Louie, D. (2017). Did foreign banks stay committed to emerging Europe during recent financial crises? *Journal of Comparative Economics*, 45(4), 793–808. <https://doi.org/10.1016/j.jce.2016.08.003>
- Bouzgarrou, H., Jouida, S., & Louhichi, W. (2018). Bank profitability during and before the financial crisis: Domestic versus foreign banks. *Research in International Business and Finance*, 44, 26–39. <https://doi.org/10.1016/j.ribaf.2017.05.011>
- Cao, Y., Gregory-Smith, I., & Montagnoli, A. (2018). Transmission of liquidity shocks: Evidence on cross-border bank ownership linkages. *Journal of International Financial Markets, Institutions and Money*, 53, 158–178. <https://doi.org/10.1016/j.intfin.2017.09.017>
- Clarke, R. G., Cull, R., Maria, M. S. M., & Sanchez, S. M. (2003). Foreign Bank Entry: Experience, Implications for Developing Economies, and Agenda for Further Research. *The World Bank Research Observer*, 18(1), 25–59. <https://doi.org/10.1093/wbro/lkg002>
- Degryse, H., Havrylchyk, O., Jurzyk, E., & Kozak, S. (2012). Foreign bank entry, credit allocation and lending rates in emerging markets: Empirical evidence from Poland. *Journal of Banking & Finance*, 36(11), 2949–2959. <https://doi.org/10.1016/j.jbankfin.2011.12.006>
- Demirgüç-Kunt, A., Pedraza, A., & Ruiz-Ortega, C. (2021). Banking sector performance during the COVID-19 crisis. *Journal of Banking & Finance*, 133, 106305. <https://doi.org/10.1016/j.jbankfin.2021.106305>
- Dungey, M., & Gajurel, D. (2015). Contagion and banking crisis – International evidence for 2007–2009. *Journal of Banking & Finance*, 60, 271–283. <https://doi.org/10.1016/j.jbankfin.2015.08.007>
- Haas, R. D., Ferreira, D., & Taci, A. (2010). *What determines the composition of banks' loan portfolios? Evidence from transition countries*.
- Hadad, M. D., Agusman, A., Monroe, G. S.,

- Gasbarro, D., & Zumwalt, J. K. (2011). Market discipline, financial crisis and regulatory changes: Evidence from Indonesian banks. *Journal of Banking & Finance*, 35(6), 1552–1562. <https://doi.org/10.1016/j.jbankfin.2010.11.003>
- Hoffmann, M., Maslov, E., & Sørensen, B. E. (2022). Small firms and domestic bank dependence in Europe's great recession. *Journal of International Economics*, 137, 103623. <https://doi.org/10.1016/j.jinteco.2022.103623>
- Hsieh, M.-F., & Lee, C.-C. (2020). Foreign bank lending during a crisis: The impact of financial regulations. *Economic Systems*, 44(3), 100791. <https://doi.org/10.1016/j.ecosys.2020.100791>
- Kim, D., & Sohn, W. (2017). The effect of bank capital on lending: Does liquidity matter? *Journal of Banking & Finance*, 77, 95–107. <https://doi.org/10.1016/j.jbankfin.2017.01.011>
- Kowalewski, O. (2019). Does Foreign Bank Branch Activity Affect Lending Behavior? *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3346685>
- Mulyaningsih, T., Daly, A., & Miranti, R. (2015). Foreign participation and banking competition: Evidence from the Indonesian banking industry. *Journal of Financial Stability*, 19, 70–82. <https://doi.org/10.1016/j.jfs.2015.02.001>
- Nguyen, H. D. H., & Dang, V. D. (2020). Bank-Specific Determinants of Loan Growth in Vietnam: Evidence from the CAMELS Approach. *The Journal of Asian Finance, Economics and Business*, 7(9), 179–189. <https://doi.org/10.13106/JAFEB.2020.VOL7.NO9.179>
- Peek, J., & Rosengren, E. (1995). Bank regulation and the credit crunch. *Journal of Banking & Finance*, 19(3–4), 679–692. [https://doi.org/10.1016/0378-4266\(94\)00148-V](https://doi.org/10.1016/0378-4266(94)00148-V)
- Sogani, A. (2020). The Great Lockdown vs. The Great Depression and the 2008 Global Financial Crisis. *International Relations*, <https://www.e-Ir.Info/2020/07/02/the-Great-Lockdown-vs-the-Great-Depression-and-the-2008-Global-Financial-Crisis/>, accessed Dec 12 2022.
- Syahid, W., & Dalimunthe, Z. (2017). On the Existence of Relationship Lending in Islamic Microfinancing: *1st International Conference on Islamic Economics, Business, and Philanthropy*, 751–755. <https://doi.org/10.5220/0007089207510755>
- Syihab, H., & Dalimunthe, Z. (2022). *Why Did Borrowers Apply For Debt Restructuring During The COVID-19 Pandemic?*: 3rd International Conference on Business and Management of Technology (ICONBMT 2021), Surabaya, Indonesia. <https://doi.org/10.2991/aebmr.k.211226.021>
- Tabak, B. M., Silva, I. B. D. R. e, & Silva, T. C. (2022). Analysis of connectivity between the world's banking markets: The COVID-19 global pandemic shock. *The Quarterly Review of Economics and Finance*, 84, 324–336. <https://doi.org/10.1016/j.qref.2022.03.002>
- Vithessonthi, C. (2023). The consequences of bank loan growth: Evidence from Asia. *International Review of Economics & Finance*, 83, 252–270. <https://doi.org/10.1016/j.iref.2022.08.025>
- Weill, L. (2003). The role of foreign ownership. *Economics of Transition*, 11(3), 569–592.
- Wu, J., Chen, M., Jeon, B. N., & Wang, R. (2017). Does foreign bank penetration affect the risk of domestic banks? Evidence from emerging economies. *Journal of Financial Stability*, 31, 45–61. <https://doi.org/10.1016/j.jfs.2017.06.004>
- Wu, S.-W., Nguyen, M.-T., & Nguyen, P.-H. (2022). Does loan growth impact on bank risk? *Heliyon*, 8(8), e10319. <https://doi.org/10.1016/j.heliyon.2022.e10319>
- Yildirim, C., Kasman, A., & Hamid, F. S. (2021). Impact of foreign ownership on market power: Do regional banks behave differently in ASEAN countries? *Economic Modelling*, 105, 105654. <https://doi.org/10.1016/j.econmod.2021.105654>