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Determinants Factors of Indonesian Banking Asset Growth Period 2014-2023

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Abstract: This study investigates the influence of various banking performance indicators, interest rates, and macroeconomic factors on Indonesia's banking assets growth. It focuses on two distinct periods: the BUKU period, which refers to the classification of banks based on their business activities and was in effect until September 2021, and the KBMI period, which is based on core capital and was implemented per the regulations outlined in POJK No. 12/POJK.03/2021. The study utilizes data from 95 commercial banks spanning December 2014 to June 2023 and employs static panel data estimation methods, a reliable and widely accepted approach, to evaluate the impact of these variables.

The findings reveal that during the KBMI period, a broader array of variables significantly influences banking asset growth compared to the BUKU period. Specifically, the Common Effects Model (CEM) applied to the KBMI period identifies key influencing variables such as profitability (NIM), liquidity (LDR and LAR), capital adequacy (CAR and CCR), interest rates, inflation, the BI Rate, and the BI Exchange Rate. In contrast, during the BUKU period, the Random Effects Model (REM) suggests that asset quality (NPL), profitability (ROA), liquidity (LAR), efficiency (BOPO), capital (CAR), deposit interest rates, and GDP are the primary drivers of asset growth.

The study's findings underscore the significant shift in the determinants of banking asset growth between the BUKU and KBMI periods. This shift, from predominantly internal to more external influences, particularly in response to the economic disruptions caused by the COVID-19 pandemic, has important implications for the Indonesian banking sector. The reclassification of banks under the KBMI system, in line with the objectives of the POJK, is a strategic move to fortify and sustain economic growth and national stability by promoting banks with robust and competitive capital structures.

Keywords: Asset Growth, Banking, Panel Data Analysis, Bank Performances, BUKU, KBMI

Backgrounds

Banking institutions drive global economic growth as intermediaries between surplus and deficit spending units. Banks collect deposits and savings and extend credit to borrowers at higher interest rates, earning profit from the interest rate margin. The funds disbursed by banks stimulate economic activity by fostering the creation of products and services, thereby supporting overall economic growth. The integration of financial institutions and collaborations with fintech companies further expands banking services to underserved populations and optimizes fund management.

Bank performance is highly dependent on internal management, the complexity of issues, and public trust. Research by Naous, Badraoui, and Abdelli (2021) demonstrates that the banking sector, particularly regional banks, significantly supports local economic growth in the MENA region. Similarly, Pradhan, Arvin, and Norman (2020) emphasize the pivotal role of banking in supporting economies in developing and developed nations.

Banks' management of public funds is influenced by internal factors such as management quality, human resources, capital adequacy, risk management, strategy, and technology, as well as external factors, including macroeconomic conditions, inflation, exchange rates, and interest rates. Bank performance, measured by ratios such as NPL, ROA, NIM, CAR, and BOPO, relies on effective internal management and external factor responsiveness. Studies by Benson & Fortune (2022) and Bolt et al. (2010) indicate that banking performance is closely linked to macroeconomic developments, with inflation affecting metrics like Return on Equity (ROE) and Return on Assets (ROA) in South African agricultural firms. Additionally, Curak et al. (2012) find that GDP positively and significantly impacts bank profitability, as reflected in ROA and ROE in Macedonia.

Rakshit and Bardhan (2023) analyze internal banking factors in India, revealing that CAR, LDR, BOPO, and NPL collectively significantly impact ROA, with operational efficiency (BOPO) being a significant determinant of profitability. Conversely, Prabowo and Sutomo (2020) identify a negative impact of BOPO on bank profitability in Indonesia. Adegbite and Olorunsola (2021) also report a negative relationship between asset growth and interest rates, inflation, and exchange rates in Nigeria.

This study focuses on Indonesian banks from December 2014 to September 2021, aiming to address gaps in understanding the determinants affecting bank assets while considering regulatory policies. In 2021, there was a shift from classifying banks based on BUKU to KBMI. The BUKU is a grouping of banks based on business activities that apply until September 2021, while the KBMI is a grouping of banks based on core capital after September 2021. This change in grouping was formalized by the Financial Services Authority Regulation (POJK) No. 12/POJK.03/2021. This research will identify internal and external factors influencing bank assets and provide insights for bank management and policymakers to enhance competitive strategies and develop ideal banking policies, considering performance metrics, interest rates, and macroeconomic indicators.

Literature Review

Analyzing the determinants affecting banking assets in Indonesia intersects with public policy theory and banking theory. Public policy encompasses rules the government establishes in political decisions to address various societal issues and concerns. Soetari (2014) outlines several perspectives on public policy: (1) It is defined as "Whatever governments choose to do or not to do," which includes all government actions or inactions, as noted by Dye (1978), focusing on understanding government actions, their reasons, and variations across different governments. (2) Easton (1969) describes public policy as allocating power values that bind society, emphasizing that only governments can enact measures affecting the public, reflecting their role in distributing values. (3) Dye (1978) also highlights that public policy is an effort to discern what the government does, the reasons behind these actions, and the variations in policy implementation. (4) Udoji (1981) defines public policy as "A sanctioned course of action addressed to a particular problem or group of related problems that affect society at large," referring to formal actions aimed at specific issues impacting a broad segment of society.

According to Intan Fitri (2017), public policy can be categorized into three stages: policy formulation, managerial policy, and operational technical policy. From a management perspective, the public policy process includes policy creation, implementation, and evaluation. In the Indonesian banking sector, public policy implementation is exemplified by consolidation measures to strengthen the banking structure, requiring banks to meet capital requirements under the new Bank Based on Core Capital (KBMI) classification. This policy reflects a rational approach for banks to absorb complex risks better and consider political aspects to enhance the competitiveness of Indonesian banks on the international stage.

In banking theory, Heffernan (2004) in "Modern Banking" argues that banks primarily function as intermediaries between depositors and borrowers. Additionally, Abdullah et al. (2018) cite Prof. G.M. Verryn Stuart in "Bank Politic," defining banks as institutions designed to meet credit needs through payment instruments, funds obtained from others, or by circulating money substitutes. The Indonesian Banking Law No. 7/1992, amended by Law No. 10/1998, defines banks as entities that collect public funds in deposits and distribute them to improve living standards. This law categorizes banks into two types: (1) Commercial Banks and (2) Rural Credit Banks (BPR).

Regular performance assessments are required to ensure that banks continue to grow and operate prudently. This has led to the development of supporting regulations such as the Bank Health Rating system, evolving into the Risk-Based Bank Rating (RBBR). Key performance ratios include Non-Performing Loans (NPLs), which categorize credit quality into doubtful, substandard, and non-performing; efficiency ratios (BOPO), comparing operational costs to income; liquidity ratios (LDR, LAR), assessing bank effectiveness; profitability ratios (ROA, NIM),

measuring bank profit levels; and the Capital Adequacy Ratio (CAR), which gauges bank capital strength and interest rates.

Several previous studies relevant to this review cover various aspects of efficiency and innovation in banking. Mateev et al. (2024) found that efficiency positively impacts the financial stability of conventional banks, though its significance was somewhat reduced during the COVID-19 pandemic. Judijanto et al. (2024) and Fatmawati and Lestari (2024) revealed that financial technology (Fintech) innovation positively affects traditional banking business models. Muhammed et al. (2023) and Puspitasari et al. (2023) identified factors such as bank size, efficiency, and capital adequacy influencing credit risk and profitability.

Rakshit and Bardhan (2022) assessed that cost and income efficiency contribute positively to bank profitability in India. Kola Benson et al. (2022) showed significant relationships between economic indicators and corporate performance in Nigeria and South Africa. López-Penabad et al. (2022) found that harmful interest rate policies impact bank profitability and risk, depending on the bank's business model. Other studies, such as Gazi et al. (2022) and Dsouza et al. (2022), revealed the adverse effects of the COVID-19 pandemic on bank profitability in Bangladesh and India. Morina (2020) and Kustyaningrum and Lisiantara (2020) highlighted determinants of credit risk and profitability, while Hack and Nicholls (2021) showed the complex effects of low interest rates on bank profits. Additionally, various studies like Ekananda (2017) and Saleh & Abu Afifa (2020) evaluated the impact of macroeconomic factors and risks on bank profitability in different contexts.

Methodology and Data

The analysis utilizes monthly data from all conventional banks (95 Commercial Banks) in Indonesia, categorized according to the previous Business Activities (BUKU) and the new Core Capital-Based grouping (KBMI). The research period spans from December 2014 to September 2021 for the BUKU classification and from October 2021 to June 2023 for the KBMI classification. The data types used include secondary data, which consists of panel data from financial statements, and primary data obtained through in-depth interviews. This dual-data approach ensures a comprehensive analysis of asset determinants by integrating quantitative financial metrics.

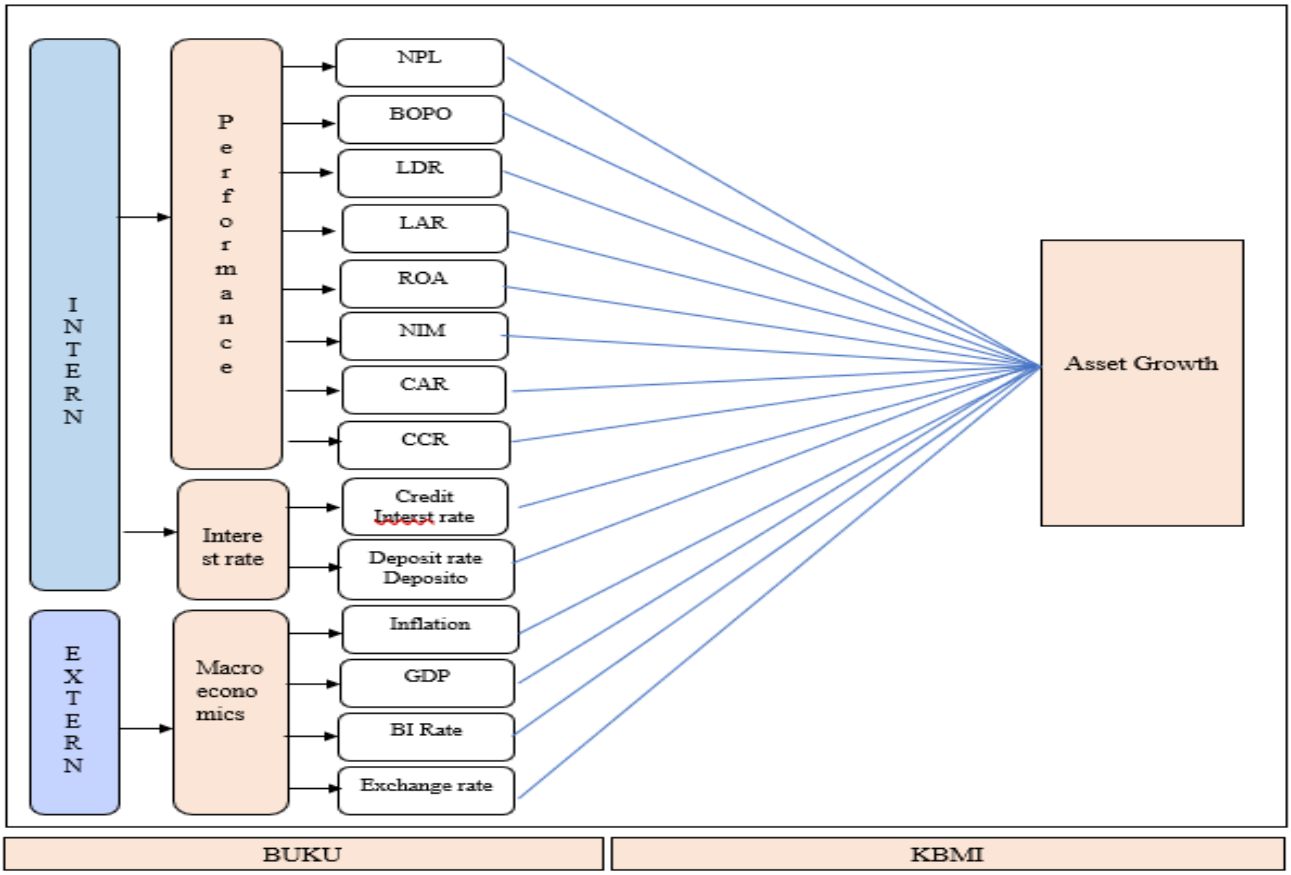
Table 1. Data

No	Indicator	Variables	Sources
Performance Aspects (Internal)			
1	Credit Risk	NPL	Appendix to Bank Indonesia Circular Letter No. 13/24/DPNP on the Assessment of the Health Level of Commercial Banks (Bank Indonesia, 2011) and OJK Regulation No. 4/2016 on the Assessment of the Health Level of Commercial Banks (Financial et al., 2016))
2	Efficiency	BOPO	
3	Liquidity	LDR and LAR	
4	Profitability	ROA and NIM	
5	Capitalization	CAR and CCR	
Interest Rate Aspects (External)			
6	Interest Rate	Credit Interest Rate and Deposit Interest rate	
Macroeconomics Aspects (External)			
7	GDP	GDP	Introduction to Macroeconomics (Suparmoko and Eleonora, 2014) and Bank Indonesia Website
8	Inflation	Inflation	
9	Exchange rate	Exchange rate	
10	Interest Rate	Interest Rate	

Sources: Bank Indonesia Website (2024)

According to Hardani et al. (2020), a Conceptual Framework is a structured representation that elucidates the concepts embedded within theoretical assumptions. This framework defines the elements present in the subject of study and illustrates the interrelationships between these concepts. In this study, the conceptual framework functions as a tool to describe and explain the phenomena under investigation. Figure 1 demonstrates how this conceptual framework is integrated into the research's flow of thought as follows:

Figure 1. Conceptual Framework



Source: Researcher (processed 2024)

Table 2 presents a comparative analysis of the distribution of various types of banks in Indonesia across two distinct periods: September 2021, under the BUKU classification, and December 2023, under the KBMI framework. The transition from BUKU to KBMI reflects significant regulatory changes in the banking sector, which is evident in banks' reclassification and distribution over time.

The impact of regulatory changes on the banking sector is reflected in the following observations**: Government Banks:** The number of government-owned banks remains stable, with a consistent total of 4 banks in September 2021 and December 2023, indicating resilience and continuity in this sector despite regulatory shifts. **Private National Banks**: A significant decrease is observed in the number of private national banks, declining from 51 banks in September 2021 to 30 banks in December 2023. This reduction may be attributed to processes such as mergers, acquisitions, or reclassification initiatives driven by regulatory adjustments within the private banking sector. **Regional Development Banks**: The number of regional development banks shows a slight increase, from 24 banks in September 2021 to 25 banks in December 2023, reflecting modest growth, possibly facilitated by regulatory support or regional economic development policies. **Foreign Banks**: The number of foreign banks remains unchanged at nine banks across both periods, indicating a stable presence of foreign entities within the Indonesian banking market, unaffected by the regulatory changes during this period. **Joint Venture Banks**: A substantial increase is observed in the number of joint venture banks, which rose from 7 in September 2021 to 27 in December 2023. This marked growth suggests a strengthening trend of strategic alliances between domestic and foreign banking institutions, likely encouraged by regulatory frameworks facilitating such partnerships.

These changes underscore the varied impact of regulatory shifts on different categories within the Indonesian banking sector, highlighting stability in specific segments and significant realignment in others. Joint Venture Banks: The number of joint venture banks has increased substantially, from 7 banks in September 2021 to

27 in December 2023. This significant growth suggests an increasing trend of strategic alliances between domestic and foreign banking institutions.

Table 2: Comparison of the Distribution of Different types of Banks in Indonesia

Type of Bank	BUKU	KBMI
Government Banks	4	4
Private National Banks	51	30
Regional Development Banks	24	25
Foreign Banks	9	9
Joint Venture Banks	7	27
Total	**95**	**95**

Source: Indonesian Banking Statistics (processed, 2024)

This study employs a quantitative approach utilizing a comprehensive methodology to examine the determinants affecting banking asset growth in Indonesia. It incorporates various performance indicators, interest rates, and macroeconomic factors to understand their impact on asset growth. Several econometric models are applied to achieve a robust analysis, ensuring a thorough exploration of the factors influencing the banking sector's asset expansion.

Econometric specifications to answer our research questions:

$$Asset\ Growth_{it} = \alpha + \beta_1 NPL_{it} + \beta_2 BOPO_{it} + \beta_3 LDR_{it} + \beta_4 LAR_{it} + \beta_5 ROA + \beta_6 NIM_{it} + \beta_7 CAR_{it} + \beta_8 CCR_{it} + \beta_9 ICR_{it} + \beta_{10} IDEP + \beta_{11} GDP_{it} + \beta_{12} INF_{it} + \beta_{13} BI\ Rate_{it} + \beta_{14} xchange\ rate_{it} + \mu_{it}$$

Initially, Pooled Ordinary Least Squares (Pooled OLS) provides a broad estimate of the relationships between banking asset growth and the explanatory variables, assuming a common intercept and slope across all banks. This approach treats the entire dataset as a single pooled entity, offering a preliminary view of average effects.

Following this, the Common Effects Model (CEM) is employed. This model assumes that individual-specific effects are not correlated with the explanatory variables and provides estimates reflecting the overall average impact across the sample. The CEM is appropriate when the focus is on the average impact of variables rather than individual differences.

To account for individual-specific characteristics that may affect asset growth, the Fixed Effects Model (FEM) is used. This model introduces individual-specific intercepts to control for time-invariant bank-specific factors, making it suitable for analyzing the impact of variables that vary over time within each bank.

In contrast, the Random Effects Model (REM) is applied, assuming that individual-specific effects are random and uncorrelated with the explanatory variables. The REM estimates the influence of variables while treating individual differences as part of the error term, which is appropriate when such differences are random and not systematically related to the variables of interest.

Model selection involves several tests: the Chow Test helps determine whether to use CEM or FEM, with significant results suggesting FEM, while non-significant results support CEM. The Hausman Test is employed to choose between FEM and REM, indicating FEM if there is a significant correlation between individual effects and explanatory variables. Estimation is performed using E-Views 9.0 software, with the analysis focusing on coefficient estimation to assess the impact of asset quality, profitability, liquidity, efficiency, capital, interest rates, and macroeconomic indicators on banking asset growth. Model performance is evaluated using the coefficient of determination (R-squared) and other relevant statistics, and a comparative analysis is conducted to provide a nuanced understanding of the factors influencing banking asset growth in Indonesia.

Result and Discussion

Based on Table 5, which presents descriptive statistics for BUKU banks, the average Non-Performing Loan (NPL) ratios for BUKU 2 and BUKU 3 exceed the industry average of 2.86%, primarily due to high levels of problematic loans, particularly in working capital credit. Conversely, BUKU 4 shows an NPL ratio below the industry average, indicating better risk management and control systems. BUKU 1 and BUKU 4 also report NPL ratios below the industry average, with BUKU 1 being relatively small and less expansive, while BUKU 4 benefits from adequate provisioning and systems. The highest NPL ratio is observed in BUKU 2, while BUKU 4 records the lowest NPL, aligning with more effective risk management policies and controls. Furthermore, the average ratios of Operational Efficiency (BOPO) and Liquidity (LAR) for BUKU 1, 2, and 3 are above the industry average, reflecting lower efficiency and liquidity compared to BUKU 4, which is more efficient and has better liquidity. Regarding Capital Adequacy Ratio (CAR), all BUKU banks meet industry standards, with BUKU 4 slightly below the industry average but still considered robust.

Additionally, Table 6 summarizes the statistics for KBMI banks, where the average NPL ratios for KBMI 1 and KBMI 3 exceed the industry average of 2.80% due to high levels of problematic loans, especially in working capital credit. In contrast, KBMI 2 and KBMI 4 report NPL ratios below the industry average, with KBMI 4 demonstrating the lowest NPL ratio, attributed to its effective credit control systems and adequate provisioning. KBMI 3 has the highest NPL ratio, while KBMI 4 has the lowest, reflecting superior risk management policies and systems.

Table 3. Chow Test, Hausman Test, and LM Test

Classification	Chow Test		Hausman Test		LM Test		Decision
	Cross-section Chi-square	Probability Chi-square	Cross-section random	Probability Chi-square	Breusch-Pagan	Probability	
BUKU	667.667225	0.0000	0.007159	1.0000	326.2874	0.0000	REM
KBMI	258.305900	0.0000	0.000000	1.0000	0.681735	0.4090	CEM

Sources: Processed using Eviews 9 (2024)

Table 3 shows that the analysis results for the BUKU variable, namely the Chi-square probability in the Chow Test, is 0.0000, which indicates high significance and indicates that the fixed effect model is more appropriate than the pooled regression model. However, the Hausman Test shows a Chi-square probability of 1.0000 for this variable, indicating no significant difference between the fixed effect and random effect models, thus supporting the use of the random effect model. Additionally, the LM Test (Breusch-Pagan) presents a Chi-square probability of 0.0000, confirming the presence of significant cross-sectional effects, favoring the random effect model over the pooled regression.

In contrast, for the KBMI variable, the Hausman Test yields a Chi-square probability of 1.0000, suggesting that the random effect model is suitable as there is no significant difference compared to the fixed effect model. However, the LM Test reveals a Chi-square probability of 0.4090, indicating non-significance and suggesting that the standard effect model (CEM) is more appropriate. Based on these findings, it can be concluded that for the BUKU variable, either the fixed effect or random effect model may be considered. In contrast, the standard effect model is more suitable for the KBMI variable.

Table 4. Estimation Result

Independent Variables	BUKU Model (REM)	KBMI Model (CEM)
	Asset Growth (Dependent Variable)	
C	15.77849*** (1.171742)	-9.932387 (9.122169)
NPL	**-0.177539*** (0.030490)**	0.039384 (0.079079)
ROA	**0.088486* (0.049154)**	-0.009489 (0.067349)

Independent Variables	**BUKU Model (REM)**	**KBMI Model (CEM)**
	Asset Growth (Dependent Variable)	
NIM	-0.038968 (0.035318)	**0.197114***** **(0.035816)**
LDR	0.001878 (0.003531)	**0.018900***** **(0.004661)**
BOPO	**-0.009640*** **(0.005530)**	-0.000246 (0.004051)
LAR	**0.010925****** **(0.003978)**	**0.014849**** **(0.006321)**
CAR	**-0.045066****** **(0.008674)**	**-0.376760**** **(0.161041)**
CCR	0.016294 (0.010636)	**0.362689**** **(0.173306)**
Exchange Rates	2.67E-05 (2.47E-05)	**2.147153**** **(0.878417)**
Inflastion	0.020476 (0.015883)	**-0.044665*** **(0.025643)**
BI RATE	0.019250 (0.016044)	**0.204299***** **(0.068603)**
GDP	**-0.013873****** **(0.004795)**	-0.019397 (0.085352)
Lending Interest Rate	-0.013300 (0.016968)	**0.403487*** **(0.203058)**
Deposit Interest Rate	**-0.123354****** **(0.021676)**	**-0.497058****** **(0.101424)**
Observation	328	84
R-Square	**0.358351**	**0.982436**
Adj R-Square	**0.329651**	**0.978872**
F-Stat	**12.48614**	**275.6780**
Prob F-stat	**0.000000**	**0.000000**

Sources: Processed using Eviews9 (2024)

Table 4 shows the estimation results for both BUKU and KBMI. Based on the estimation results using the Random Effects Model, it is found that the internal variables influencing the growth of total bank assets are NPL, ROA, BOPO, LAR, and CAR. In contrast, the external variables affecting total asset growth are GDP and Deposit Interest Rates. In this context, Non-Performing Loans, CAR, BOPO, GDP, and deposit interest rates negatively impact total bank asset growth, with statistical significance at the 1% level.

Conversely, the estimation results using the Common Effects Model indicate that the internal factors influencing total bank asset growth are NIM, LDR, LAR, CAR, and CCR. In contrast, the external factors include the BI Exchange Rate, Inflation, BI Rate, Lending Interest Rates, and Deposit Interest Rates. In this scenario, the variables that negatively affect total asset growth are CAR, Inflation, and Deposit Interest Rates. The variables NIM, LDR, LAR, CCR, BI Exchange Rate, BI Rate, and Lending Interest Rates positively impact total bank asset growth.

This study comprehensively examines and analyzes the overall impact of performance variables, interest rates, and macroeconomic factors on the growth of banking assets, both before (BUKU) and after (KBMI) the implementation of the Financial Services Authority Regulation (POJK) No.12/POJK.03/2021, dated July 30, 2021. From the table, it is observed that before the implementation of POJK No.12/POJK.03/2021 (BUKU), an increase in non-performing loans (NPL) led to a 4.51 percent decline in banking asset growth, statistically significant at the 1 percent level. As represented by an increase in the ROA variable, profitability positively influenced banking asset growth by 8.85 percent, which was also significant at the 1 percent level. Efficiency, represented by an increase in the BOPO variable, led to a 0.96 percent reduction in banking asset growth, statistically significant at the 10 percent level. Liquidity, represented by an increase in the LAR variable, positively impacted banking asset growth by 1.09

percent, statistically significant at the 1 percent level. Capital adequacy, indicated by an increase in the CAR variable, resulted in a 4.51 percent decrease in banking asset growth, statistically significant at the 1 percent level. Macroeconomic conditions, as reflected by an increase in GDP, contributed to a 1.39 percent decline in banking asset growth, statistically significant at the 1 percent level. Additionally, the interest rate indicator, represented by an increase in deposit interest rates, led to a 12.34 percent reduction in banking asset growth, statistically significant at the 1 percent level.

Furthermore, the overall influence of performance variables, interest rates, and macroeconomic factors on the growth of banking assets after the implementation of POJK No.12/POJK.03/2021 (KBMI) reveals that profitability, represented by an increase in the NIM variable, positively affected banking asset growth by 19.71 percent, statistically significant at the 1 percent level. Liquidity indicators, reflected by increased LDR and LAR variables, positively impacted banking asset growth by 1.89 percent and 1.48 percent, respectively, statistically significant at the 1 percent level. As indicated by increases in the CAR and CCR variables, capital adequacy indicators resulted in a 37.68 percent decrease and a 36.27 percent increase in banking asset growth, respectively, statistically significant at the 5 percent level. Macroeconomic indicators, such as the BI Exchange Rate and BI Rate, increased banking asset growth, while inflation led to a 4.47 percent decline in banking asset growth. In terms of banking interest rates, an increase in lending rates positively influenced banking asset growth by 40.35 percent. In contrast, an increase in deposit interest rates led to a 49.71 percent decrease in banking asset growth.

The literature supporting this research indicates that performance variables such as ROA, NIM, LDR, and CCR positively impact banking asset growth. At the same time, NPL, BOPO, and inflation exhibit adverse effects. Studies by Santoso and Wahyuni (2021) and Prasetyo and Widodo (2022) highlight the significant influence of NPL and LDR ratios on asset growth. In contrast, Zulfikar and Utama (2020) emphasize the positive relationship between profitability, efficiency, and ROA and NIM. Macroeconomic factors like GDP also show a positive impact, though not always significant (Kola Benson et al., 2022; Shair et al., 2019; Esya, 2019). Regarding interest rates, an increase in the lending rate positively influences asset growth, while a rise in the deposit rate tends to have a negative effect (López-Penabad et al., 2022; Amelia et al., 2023). Effective Asset Liability Management (ALMA) is crucial for optimizing liquidity and profitability to support banking asset growth.

In summary, the estimation results suggest that before the implementation of POJK No.12/POJK.03/2021 (BUKU), banking asset growth was predominantly driven by internal factors due to relatively stable national economic conditions. In contrast, after the implementation of POJK No.12/POJK.03/2021 (KBMI), macroeconomic factors significantly influenced banking asset growth, mainly due to the economic shocks caused by the COVID-19 pandemic.

Conclusion

This study aims to identify the determinants influencing banking asset growth in Indonesia, considering both internal and external factors. Through rigorous empirical analysis, several key findings contribute to our understanding of the dynamics between these variables. First, our results indicate that the factors driving banking asset growth in the BUKU system (before the implementation of POJK No.12/POJK.03/2021) were primarily influenced by internal banking indicators such as profitability, efficiency, non-performing loans, capital adequacy, and liquidity.

However, in the KBMI system (following the enactment of POJK No.12/POJK.03/2021), external macroeconomic factors became more dominant in influencing asset growth. In this context, the COVID-19 pandemic has catalyzed transformation in the Indonesian banking sector, prompting innovation, digitalization, and strategic shifts to address challenges and seize new opportunities in the post-pandemic era. Given these implications and the empirical estimates, the negative impact of the COVID-19 pandemic on performance, macroeconomic conditions, and interest rates could shift to positive growth more rapidly.

To enhance decision-making and bank management in the future, it is recommended that bank management focuses on several strategic actions: (1) closely monitoring key performance variables that significantly influence banking asset growth by implementing an adequate Early Warning System (EWS); (2) implementing effective risk management to identify, measure, monitor, and control risks, as well as regularly evaluating risk strategies to avoid new risks that could affect the bank's financial health; (3) enhancing competency and operational efficiency, maintaining credit quality, and adhering to sound banking practices in accordance with applicable regulations; (4) strengthening banking resilience through capital enhancement to better cope with economic changes and support sustainable asset growth; (5) developing adaptive and flexible business strategies to align with banking asset growth;

and (6) conducting regular supervision and evaluation of significant performance variables and macroeconomic factors to adjust strategies and ensure sustainable banking asset growth.

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Appendix

Table 5. BUKU Statistic Descriptive

BUKU	Variables	Mean	StdDev	min	Max
Total	*Performance Aspects*				
	NPL	2,86	0,28	2,16	3,35
	ROA	2,33	0,27	1,59	2,85
	NIM	5,03	0,41	4,06	5,65
	LDR	89,43	4,180	79,11	96,19
	BOPO	81,90	2,62	76,29	88,84
	LAR	17,39	1,62	14,64	21,67
	CAR	22,77	1,12	19,57	25,18
	CCR	20,88	1,37	17,75	23,59
	Macroeconomy				
	Exchange Rates	13.91	658	12.44	16.37
	Inflation	3,45	1,64	1,32	8,36
	BI_Rate	5,52	1,36	3,50	7,75
	GDP	3,89	2,94	-6,21	7,57
	Interest Rate				
	Lending Interest Rate	10,58	1,41	8,05	12,82
	Deposit Interest Rate	6,48	1,43	3,24	9,18
	Dependent Variable				
	Total Assets	7.510,72	1.193,71	5.615,15	9.735,39
	Asset Growth	0,69	1,30	(5,72)	3,05
BUKU 1	*Performance Aspects*				
	NPL	2,75	0,62	1,72	4,62
	ROA	1,08	0,97	-0,99	2,31
	NIM	5,43	0,54	4,57	6,43
	LDR	80,48	5,44	68,66	94,23
	LAR	20,37	3,16	12,39	27,50
	BOPO	91,23	8,95	81,24	111,02
	CAR	22,98	3,96	0,14	30,01
	CCR	21,86	3,038	16,89	28,86
	Macroeconomy				
	Exchange Rates	13.9	658	12.440	16.367
	Inflation	3,45	1,64	1,32	8,36
	BI_Rate	5,52	1,36	3,50	7,75
	GDP	3,89	2,942	-6,21	7,57

BUKU	Variables	Mean	StdDev	min	Max
	Interest Rate				
	Lending Interest Rate	10,58	1,47	8,05	12,82
	Deposit Interest Rate	8,04	0,82	6,92	10,02
	Dependent Variable				
	Total Assets	88,60	45,64	40,33	189,21
	Asset Growth	-1,41	6,92	(27,00)	12,00
BUKU 2	*Performance Aspects*				
	NPL	2,75	0,62	1,72	4,62
	ROA	1,08	0,97	-0,99	2,31
	NIM	5,43	0,54	4,57	6,43
	LDR	80,48	5,44	68,66	94,23
	LAR	20,37	3,16	12,39	27,50
	BOPO	91,23	8,95	81,24	111,02
	CAR	22,98	3,96	0,14	30,01
	CCR	21,86	3,038	16,89	28,86
	Macroeconomy				
	Exchange Rates	13.91	658	12.440	16.367
	Inflation	3,45	1,64	1,32	8,36
	BI_Rate	5,52	1,36	3,50	7,75
	GDP	3,89	2,94	-6,21	7,57
	Interest Rate				
	Lending Interest Rate	10,58	1,41	8,05	12,82
	Deposit Interest Rate	7,51	1,16	3,80	9,58
	Dependent Variable				
	Total Assets	880,98	55,37	790,56	1.079,55
	Asset Growth	0,04	3,77	(20,00)	6,00
BUKU 3	*Performance Aspects*				
	NPL	2,94	0,27	2,32	3,55
	ROA	1,72	0,27	1,24	2,24
	NIM	4,11	0,44	3,31	4,77
	LDR	96,25	5,35	83,22	104,69
	LAR	17,35	2,39	12,90	23,66
	BOPO	87,94	2,12	83,42	92,34
	CAR	25,16	2,62	17,04	30,16
	CCR	22,52	2,52	14,62	27,20
	Macroeconomy				
	Exchange Rates	13.918	658	12.443	16.367
	Inflation	3,45	1,64	1,32	8,36
	BI_Rate	5,52	1,36	3,50	7,75
	GDP	3,89	2,94	-6,21	7,57
	Interest Rate				
	Lending Interest Rate	10,58	1,41	8,05	12,82

BUKU	Variables	Mean	StdDev	min	Max
	Deposit Interest Rate	6,80	1,40	3,03	9,44
	Dependent Variable				
	Total Asset	2.442,23	232,63	1.762,81	2.858,20
	Asset Growth	0,52	2,93	(10,00)	15,00
BUKU 4	*Performance Aspects*				
	NPL	2,54	0,42	1,49	3,37
	ROA	2,96	0,44	1,84	3,94
	NIM	5,73	0,54	4,63	6,59
	LDR	86,06	3,82	78,37	92,69
	LAR	16,74	1,73	13,58	20,91
	BOPO	75,75	4,28	67,10	85,37
	CAR	20,88	1,09	17,18	23,14
	CCR	19,38	1,52	16,03	21,84
	Macroeconomy				
	Exchange Rates	13.910	658	12.440	16.367
	Inflation	3,45	1,68	1,32	8,36
	BI_Rate	5,52	1,36	3,50	7,75
	GDP	3,89	2,94	-6,21	7,57
	Interest Rate				
	Lending Interest Rate	10,58	1,41	8,05	12,82
	Deposit Interest Rate	5,96	1,34	2,96	8,72
	Dependent Variable				
	Total Assets	3.820,06	974,21	2.431,53	5.745,50
	Asset Growth	1,05	1,94	(3,00)	8,00

Sources: Processed using Eviews9 (2024)

Table 6. KBMI Statistic Descriptive

KBMI	Variables	Mean	Std_Dev	min	Max
Total	*Performance Aspects*				
	NPL	2,80	0,26	2,44	3,22
	ROA	2,48	0,40	1,85	3,82
	NIM	4,71	0,08	4,56	4,89
	LDR	79,97	1,50	77,49	82,76
	BOPO	83,86	2,03	13,85	20,53
	LAR	79,55	2,44	77,16	85,07
	CAR	25,37	0,62	24,34	26,74
	CCR	23,72	0,63	22,77	25,17
	Macroeconomy				
	Exchange Rates	14.811	444	14.199	15.66
	Inflation	3,97	1,45	1,66	5,95
	BI_Rate	4,43	1,04	3,50	5,75
	GDP	5,24	0,27	4,74	5,76

KBMI	Variables	Mean	Std_Dev	min	Max
	Interest Rate				
	Lending Interest Rate	8,66	0,19	8,40	8,95
	Deposit Interest Rate	3,58	0,63	2,97	4,52
	Dependent Variable				
	Total Assets	10.498	429	9.824	11.113
	Asset Growth	0,60	1,10	(1,63)	3,11
KBMI 1	*Performance Aspects*				
	NPL	2,92	0,27	2,40	3,48
	ROA	1,02	0,35	0,38	1,59
	NIM	4,30	0,38	3,29	4,93
	LDR	74,21	2,90	69,43	77,97
	LAR	16,62	3,19	13,16	22,43
	BOPO	91,59	2,82	87,57	96,11
	CAR	30,07	1,87	27,54	35,20
	CCR	28,28	1,94	25,99	33,73
	Macroeconomy				
	Exchange Rates	14.811	444	14.199	15.658
	Inflation	3,97	1,45	1,66	5,95
	BI_Rate	4,43	1,04	3,50	5,75
	GDP	5,24	0,27	4,74	5,76
	Interest Rate				
	Lending Interest Rate	8,66	0,19	8,40	8,95
	Deposit Interest Rate	4,36	0,60	3,70	5,29
	Dependent Variable				
	Total Assets	1.387,00	61,90	1.307,90	1.580,09
	Asset Growth	0,47	2,53	(5,84)	6,75
KBMI 2	*Performance Aspects*				
	NPL	2,65	0,48	2,04	3,39
	ROA	1,62	0,47	0,93	2,37
	NIM	4,10	0,22	3,72	4,43
	LDR	79,20	1,93	74,35	82,32
	LAR	21,95	1,05	20,53	24,31
	BOPO	92,28	2,27	84,67	95,32
	CAR	36,12	2,59	25,63	38,74
	CCR	33,79	2,59	23,18	36,18
	Macroeconomy				
	Exchange Rates	14.811	444	14.199	15.658
	Inflation	3,97	1,45	1,66	5,95
	BI Rate	4,43	1,04	3,50	5,75
	GDP	5,24	0,27	4,74	5,76
	Interest Rate				
	Lending Interest Rate	8,66	0,19	8,40	8,95

KBMI	Variables	Mean	Std_Dev	min	Max
	Deposit Interest Rate	4,14	0,54	3,48	4,90
	Dependent Variable				
	Total Assets	1.285,61	104,37	926,29	1.424,05
	Asset Growth	0,72	2,61	(4,46)	6,51
KBMI 3	*Performance Aspects*				
	NPL	2,96	0,18	2,71	3,30
	ROA	1,73	0,19	1,41	2,22
	NIM	3,81	0,07	3,64	3,89
	LDR	84,35	3,02	79,03	89,23
	LAR	17,51	2,33	13,57	21,98
	BOPO	80,29	2,53	77,37	86,35
	CAR	24,24	0,73	23,15	25,34
	CCR	22,39	0,75	21,33	23,62
	Macroeconomy				
	Exchange Rates	14.811	444	14.199	15.658
	Inflation	3,97	1,45	1,66	5,95
	BI_Rate	4,43	1,04	3,50	5,75
	GDP	5,24	0,27	4,74	5,76
	Interest Rate				
	Lending Interest Rate	8,66	0,19	8,40	8,95
	Deposit Interest Rate	3,46	0,58	2,77	4,26
	Dependent Variable				
	Total Assets	2.590,78	108,08	2.408,65	2.754,76
	Asset Growth	0,53	1,07	(1,57)	2,09
KBMI 4	*Performance Aspects*				
	NPL	2,74	0,29	2,26	3,16
	ROA	3,37	0,38	2,56	3,94
	NIM	5,34	0,09	5,15	5,53
	LDR	79,22	1,71	76,20	81,52
	LAR	14,20	2,18	11,57	19,03
	BOPO	69,26	5,48	64,03	82,42
	CAR	22,22	0,79	20,75	23,80
	CCR	20,95	0,78	19,55	22,47
	Macroeconomy				
	Exchange Rates	14,811	444	14,199	15,658
	Inflation	3,97	1,45	1,66	5,95
	BI_Rate	4,43	1,04	3,50	5,75
	GDP	5,24	0,27	4,74	5,76
	Interest Rate				
	Lending Interest Rate	8,66	0,19	8,40	8,95
	Deposit Interest Rate	2,79	0,48	2,22	3,54
	Dependent Variable				

KBMI	Variables	Mean	Std_Dev	min	Max
	Total Assets	5.234,43	224,08	4.909,46	5.617,55
	Asset Growth	0,52	1,57	(2,23)	4,47

Sources: Processed using Eviews9 (2024)