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Revisiting finance-led growth: Evidence from disaggregated bank credit in Indonesia (period 2009–2023)

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ABSTRACT

Indonesia's economic performance has long been intertwined with the flow of bank credit; however, the rapid expansion of lending has not always moved in harmony with growth. The varied outcomes of working capital, investment, and consumer loans raise concerns about whether credit actually promotes sustainable development or, when misdirected, risks producing an imbalance. This study aims to clarify these dynamics by analyzing the distinct effects of disaggregated bank loans on Indonesia's economic expansion from 2009 to 2023. Taking a quantitative approach, it uses multiple linear regression to examine the individual and collective influence of each loan category, using secondary data from Bank Indonesia and the Central Statistics Agency. The study found that working capital loans have a favorable and significant impact, emphasizing their importance in supporting daily output and short- to medium-term growth. Investment loans typically have a negative impact because of inefficiencies, delays, and intrinsic structural flaws that obstruct their primary purpose of increasing capacity. While consumer loans help boost household demand, their impact on macroeconomic growth is small, highlighting their limitations as long-term growth drivers. Nonetheless, the interaction of these three loan categories is critical in shaping economic results, as models show that they account for a considerable part of the growth fluctuation. This duality emphasizes the potential of finance as both an enabler and a constraint, implying that effective oversight of investment credit, consistent working capital flows, and careful management of consumer credit are critical strategies for promoting inclusive and resilient economic growth in Indonesia.

Keywords: working capital loans, investment loans, consumer loans, economic growth.

1. INTRODUCTION

As a developing nation, Indonesia's economy is in rhythm with the real sector. Livelihoods are created, incomes are nurtured, and poverty is gradually reduced in factories, markets, plantations, and countless small enterprises. However, the resilience of this economy does not stand on the shoulders of the real sector alone. Banking institutions, acting as financial arteries, channel the vital flow of credit to sustain enterprises, both large and small. These credit flows, allocated in the form of working capital, investment, and consumer loans, serve as powerful instruments capable of shaping the trajectory of national growth. When managed effectively, they not only fuel productivity and expand industrial capacity but also stimulate household demand, creating a virtuous cycle of sustainable economic development (Nurjannah & Nurhayati, 2021). As Levine (2005) notes in his seminal survey of finance and growth, financial development eases credit constraints and, by doing so, may unleash entrepreneurship, firm creation, and economic transformation.

However, the strength of the credit–growth nexus is not distributed evenly across all institutions and loan categories. Wiguna and Viverita (2021) reveal that state-owned banks demonstrate the highest correlation between loan growth and economic growth, underscoring their pivotal role in financing the productive sector, while foreign-owned banks show weaker linkages, reflecting their more cautious stance in extending credit to the domestic market. Recent developments have reinforced this nuanced picture. According to TradingEconomics (2025), annual loan growth in Indonesia edged up modestly to 7.56 percent in August 2025, following a slowdown to 7.03 percent in July, the weakest pace since March 2022. This fragile rebound occurred amid persistent caution among banks and elevated interest rates, which together contributed to a substantial stock of undisbursed loan facilities, amounting to more than a fifth of the total credit ceiling. Nevertheless, Bank Indonesia maintains its projection that overall lending will remain within the targeted range for 2025, signaling both resilience and restraint within the financial system.

Working capital loans, by their very nature, address the daily operational needs of businesses: the procurement of raw materials, payment of wages, and coverage of routine expenses that keep production lines moving. In contrast, investment loans are long-term. They enable firms to acquire fixed assets, build new facilities and expand their productive capacity. Consumer loans, meanwhile, support households in financing durable goods or everyday needs, directly feeding into the consumption side of the economy. Each type of loan carries its own character and role: working capital and investment loans lean toward building long-term growth and competitiveness, whereas consumer loans provide short-term dynamism through immediate spending (Maherika et al., 2021). Importantly, as Soedarmono et al. (2017) highlight in their study of Indonesia, the impact of these loan categories is not uniform. They found that while working capital credit consistently spurs growth, excessive investment and consumption credit may paradoxically harm economic performance. See Figure 1

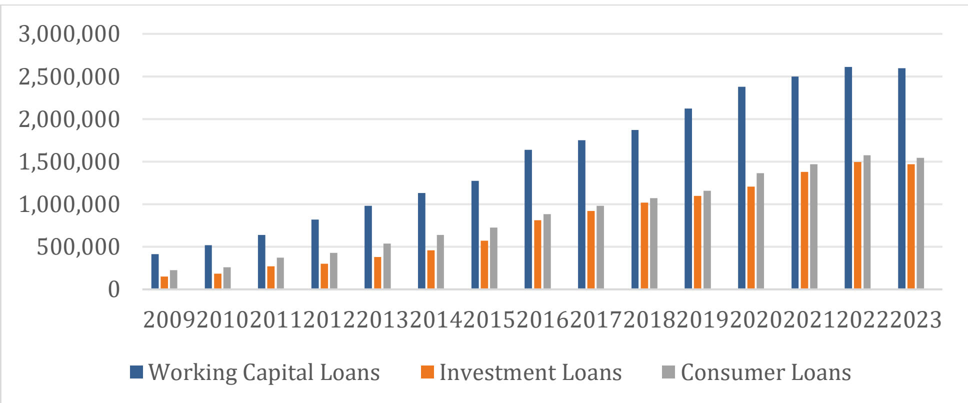

Figure 1. Bank credit distribution in Indonesia by loan type, 2009–2023 (in billion rupiah)

The distribution of commercial bank credit in Indonesia between 2009 and 2023 shows a clear upward trajectory (Bank Indonesia, 2023). Working capital loans surged from IDR 414,749 billion in 2009 to IDR 2,465,419 billion by 2023. Investment loans rose from IDR 151,209 billion to IDR 1,468,687 billion, while consumer loans grew from IDR 226,339 billion to IDR 1,547,454 billion during the same period. Although consumer loans experienced substantial growth, working capital loans continued to dominate, reflecting the banking sector's orientation toward financing productivity-oriented activities (Lestari et al. 2022). See Figure 2

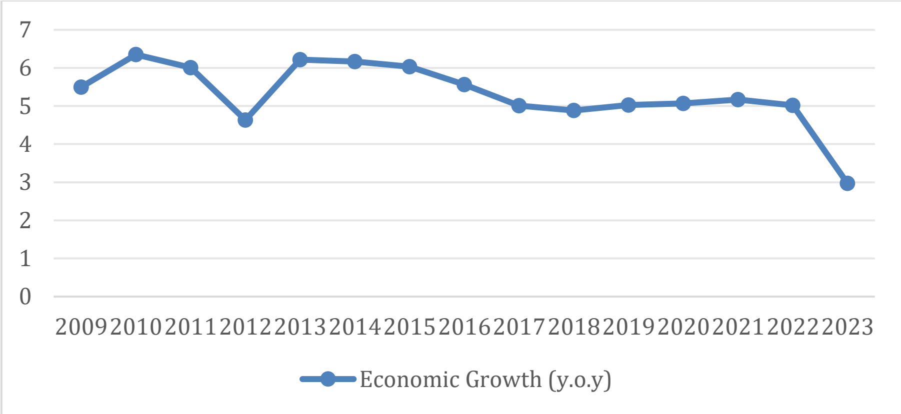

Figure 2. Indonesia's economic growth rate (y.o.y), 2009–2023 (percent)

However, credit and economic growth have not always moved in lockstep. Indonesia's annual GDP growth rate has displayed notable fluctuations: 5.5 percent in 2009, peaking at 6.35 percent in 2010, but falling to just 2.97 percent in 2023 (BPS, 2023). This dissonance provokes critical inquiry. Does the steady rise in credit distribution translate proportionally into higher economic growth? Or does the surge in lending—particularly consumer lending—merely fuel short-lived consumption without adequately expanding the productive capacity? (Goni et al., 2022). Ho and Saadaoui (2022), in their analysis of ASEAN economies, caution that bank credit fosters growth only up to a threshold level of credit-to-GDP, beyond which the effect dissipates. They also stress that whether credit flows to firms or households makes a decisive difference in macroeconomic outcomes.

These questions give rise to several strategic problems. First, the dominance of working capital loans raises concerns about their long-term contribution to sustainable growth. While vital in supporting business operations, they may not always lead to transformative economic expansion. Second, the slower growth of investment loans raises questions about their effectiveness in strengthening production capacity and national competitiveness. Third, the rapid increase in consumer loans introduces the risk of inflationary pressure and potential economic imbalance if not carefully monitored (Nurjannah & Nurhayati, 2021). These risks align with those reported in larger global studies. Arcand et al. (2015) show that private credit's marginal contribution to growth becomes negative as it approaches the size of a country's GDP. Financial deepening is "good only up to a point," according to Cecchetti & Kharroubi (2012), after which it stops being a driver and turns into a drag.

The literature currently in publication presents a range of viewpoints on how different forms of credit affect economic expansion. According to Nurjannah and Nurhayati (2021), consumer loans often have little impact on growth, whereas working capital and investment loans are essential. Furthermore, Maherika et al. (2021) stress that these impacts are not consistent, and local economic factors have a substantial impact on the results, requiring a customized analytical approach. According to Goni et al. (2022), growth is impacted by all three forms of credit, albeit in different ways. This intricacy emphasizes the importance of comprehending how credit functions within the unique frameworks of regional economies, including monetary and fiscal policy. Lestari et al. (2022) argue for sensible regulatory measures, cautioning that unrestrained consumer credit may impede progress. Finally, the Bank for International Settlements (2024) observes that credit ratios that exceed 100% of GDP in many emerging nations result in declining growth returns, with loans going more and more towards real estate and speculative ventures rather than profitable investments.

The recent increase in working capital loans may suggest a sense of optimism among businesses amidst ongoing economic uncertainty; however, this optimism is precarious. Factors such as global commodity price fluctuations, external shocks, and the looming threat of non-performing loans challenge the effective allocation of credit in the banking sector. Although investment loans have a lot of potential, they are frequently hampered by inadequate alignment with real needs, delays in project execution, and regulatory slowdowns. The rapid growth in the consumer lending industry, especially in the housing and auto sectors, puts the macroeconomic system at risk of instability and inflation. Furthermore, the Bank for International Settlements highlights that loan booms can result in excessive real estate and construction investments, creating bubbles that do not always improve industrial competitiveness.

The complexity of finance-led growth is at the heart of this discussion. Credit is a potential risk factor and an engine of economic activity, promoting innovation and production. Credit puts the economy at serious risk when it encourages speculative investments or drives consumption beyond sustainable levels. It is becoming increasingly important to comprehend how credit and economic performance interact in Indonesia, where growth goals face significant structural barriers.

Understanding economic dynamics requires careful analysis of the connections between consumer, investment, and working capital loans. This analysis seeks to clarify the elements that promote or impede growth by examining the interactions between these loan categories. Beyond their theoretical value, these findings are essential for regulators, legislators, and financial organizations working to develop efficient credit allocation plans. Fostering a strong economy requires balancing the short-term gains from consumer spending with the crucial requirement for long-term investment and operational stability.

By examining data from 2009 to 2023 and concentrating on the distinct impacts of working capital, investment, and consumer loans on Indonesia's economic growth, this study adds to this crucial conversation. This study aims to reveal the complex ways in which financial resources impact national development by dissecting the impact of these many forms of loans. The ultimate goal is to offer evidence-based insights that guide policies that support equitable, sustainable, and well-balanced economic growth, in which investment, production capacity, and consumption are carefully balanced.

2. METHOD

Given that numerical data can highlight underlying relationships, this study uses quantitative methodology. This study intends to provide a better understanding of these crucial links by highlighting the concrete influence of bank lending on Indonesia's economic growth through the conversion of economic activity into quantifiable data. Such a method guarantees that judgements are supported by statistical data that accurately capture the rhythm of the country's economy rather than just perception.

The data foundation of this inquiry rests on secondary sources drawn from the Central Statistics Agency (BPS) and Bank of Indonesia. The BPS provides annual records of Indonesia's economic growth, measured as year-on-year GDP changes. Bank Indonesia provided detailed statistics on commercial bank lending, disaggregated into working capital, investment, and consumer loans. These data were selected because of their reliability, structured reporting, and relevance to the research questions. The period 2009–2023 was chosen deliberately, as it reflects both the recovery from the global financial crisis and the resilience-testing years of the pandemic and global uncertainty (BPS, 2023; Bank Indonesia, 2023). The initial step involved identifying the precise variables, classifying them into dependent and independent categories, and ensuring that data consistency across years was maintained.

The dependent variable is the economic growth rate of Indonesia. The independent variables are the three categories of bank credit: working capital, investment, and consumer. To capture their effects, multiple linear regression was employed because this technique allows for the simultaneous analysis of how several independent variables influence a single dependent outcome. The regression model was accompanied by two core tests: The F-test analyzed the model's viability and determined whether the three loan types together have an impact on economic growth. The distinct weights of working capital, investment, and consumer lending were revealed by the t-test, which examined the partial influence of each loan category.

To guarantee the accuracy of our findings, we conducted several traditional assumption tests before beginning the estimations. To ensure that the residual distribution followed the anticipated trends, we evaluated normality. To ensure that the correlations between the independent variables did not skew our results, we also looked for multicollinearity. Tests for heteroskedasticity showed that the residual variance remained constant across observations. Our dataset satisfied the predetermined thresholds, according to additional validity and reliability assessments, confirming the model's statistical soundness and methodological rigor.

3. RESULT AND DISCUSSION

Using a multi-layered analytical methodology, this study explores the complex relationship between bank loans and Indonesia's economic growth. It separates the distinct effects of different lending types using a t-test, showing that some credit streams actively promote economic dynamism, while others find it difficult to sustain it. An F-test was performed to evaluate the combined effects of working capital, investment, and consumer loans to determine whether their synergy is strong enough to affect the nation's economic trajectory. This was done to understand the combined influence of various financial channels. Furthermore, the coefficient of determination (R2) gauges how effectively these three lending categories collectively account for changes in economic performance, whereas the regression coefficients clarify the strength and significance of each loan type. Through this nuanced interplay of individual and collective factors, the findings paint a holistic picture of finance as both a driving force and potential limitation in Indonesia's evolving economic landscape. With this foundation, the following sections unfold the specific findings of each test, allowing for a deeper understanding of how credit in its various forms resonates within the pulse of national growth. See Table 1

Table 1. T test results

Variable	$t_{statistic}$	t_{table}	Partial R^2
Working Capital Loans	2.824	2.201	-4.051
Investment Loans	-3.190	2.201	3.466
Consumer Loans	-0.876	2.201	1.319

Dependent variable: Economic Growth

The first result pertains to working capital loans. With a t-statistic of 2.824 exceeding the critical threshold of 2.201, the evidence is clear: working capital credit exerts a positive and significant influence on growth. This finding affirms that the lifeblood of daily operations—raw materials purchased, wages paid, and machinery maintained—translates into tangible contributions to the national output. When firms are sustained in their immediate activities, production flows more smoothly, trade circulates more actively, and the wider economy feels the pulse of vitality. The strength of this relationship underscores the role of working capital finance as a bridge between routine enterprises and collective prosperity.

The second outcome concerns the investment loans. Here, the t-statistic, measured at -3.190, lies well below the critical value, revealing a significant but negative effect. Thus, the paradox of investment credit is laid bare. Although intended to enlarge productive capacity and build the foundations of long-term growth, such loans may falter in practice. Delays in project implementation, bureaucratic hurdles, or misallocation of funds can turn the promise of expansion into one of stagnation. The negative sign suggests that the capital destined for fixed assets did not immediately mature into growth during the study period. It may instead reflect the time lag between credit disbursement and the realization of productive gains or inefficiencies that prevented these investments from bearing fruit.

The third result addresses consumer loan data. With a t-statistic of -0.876, far below the threshold of 2.201, consumer credit has no significant effect on economic growth. This silence in the statistical evidence is instructive for several reasons. While consumer lending may boost household spending and provide comfort in the short term, it does not appear to leave a lasting imprint on the macroeconomic performance. Although consumption is essential for sustaining demand, it does not expand the nation's productive frontier. The insignificance of this variable reflects the reality that growth is not driven merely by what households consume but by what economies create, invest, and innovate.

Taken together, these results convey a layered message: credit that sustains daily enterprises affirms its role as an engine of growth. Credit meant for long-term investment reveals structural weaknesses when not managed efficiently. Although credit allocated to consumption is beneficial to households, it has no discernible impact on the trajectory of national prosperity. Thus, the t-test delivers more than just data; it offers insights into financial patterns and the fine balance between meeting immediate needs, planning for the future, and maintaining the present. See Table 2

Table 2. F test results

Source	Sum of Squares	Df	Mean Square	F	F_{table}
Regression	7.483	3	2.495	10.076	3.59
Residual	2.724	11	.248		
Total	10.209	14			

The test confirms that the aggregate impact of the three types of credit is large, with an F-statistic of 10.076 exceeding the threshold value of 3.59. In other words, the total amount of bank lending, irrespective of the direction or intensity of its streams, makes a significant contribution to the development of a country. Therefore, the model based on these variables is not a blank canvas but rather a solid framework that can account for changes in Indonesia's economic performance during the study period.

Using a multi-layered analytical methodology, this study explores the complex relationship between bank loans and Indonesia's economic growth. It separates the distinct effects of different lending types using a t-test, showing that some credit streams actively promote economic dynamism, while others find it difficult to sustain it. An F-test was performed to evaluate the combined effects of working capital, investment, and consumer loans to determine whether their synergy is strong enough to affect the nation's economic trajectory. This was done to understand the combined influence of various financial channels. Furthermore, the coefficient of determination (R2) gauges how effectively these three lending categories collectively account for changes in economic performance, whereas the regression coefficients clarify the strength and significance of each loan type. The results present a comprehensive picture of finance as both a driving force and a possible constraint in Indonesia's changing economic landscape through the intricate interaction of individual and societal forces. See Table 3

Table 3. Regression Coefficients and Model Summary

Variable	Unstandardized Coefficients (β)
Working Capital Loans	7.410
Investment Loans	-9.308
Consumer Loans	-3.820
Dependent variable: Economic Growth **Constant (Intercept) = 4.726** **R = 0.856** **R^2 = 0.733**	

The regression model is an essential tool in economic analysis, expressing correlations through its coefficients, each of which has significant economic ramifications. The significantly positive working capital loan coefficient, which is measured at 7.410, provides a convincing account of the economic momentum. This suggests that there is a commensurate improvement in overall economic vibrancy when companies can obtain greater access to these important finances for day-to-day operations. The ramifications are extensive: factories run more efficiently, workers are paid on time, and supply chains run more smoothly, all of which contribute to an atmosphere conducive to development and expansion. Consequently, working capital becomes a force for survival that is small in nature but crucial in its influence.

In contrast, the consumer and investment loan coefficients are negative at -3.820 and -9.308, respectively. Where one might anticipate light, these values show shadows. Despite being designed to fortify the economy's productive underpinnings, investment financing seems more like a burden than a benefit. Such a result could be the consequence of a structural lag between investment and quantifiable growth, inefficient allocation, or delayed project realization. Additionally, consumer credit has a negative coefficient, indicating that it cannot convert temporary expenditure into long-term economic growth. Although consumption may improve comfort at home, it does not push the boundaries of competitiveness or production. The constant value of 4.726 is noteworthy because it indicates the baseline growth rate when the independent variables are maintained at zero. This figure emphasizes a crucial component of economic dynamics by showing a type of fundamental growth that occurs apart from credit. This implies that factors other than credit, including natural resources, demographic shifts, and general world conditions, propel growth.

The correlation coefficient, $R^2 = 0.856$, which shows a significant link between credit flows and economic growth, is also informative. A strong correlation is indicated by such a high R^2 value, suggesting that changes in the GDP closely reflect changes in the lending patterns. With each impacting the other in a reciprocal way that emphasizes their interconnectedness, this relationship vividly illustrates how interwoven the economy and credit system are.

Statistical research provides insights into the complex connection between Indonesia's economic growth and loan distribution. Together, the regression coefficients, significance of the F-statistic, t-test findings, and explanatory strength of R2 provide an instructive and warning story. Every statistic is more than just a figure; it is a representation of the fundamental principles that control the relationship between finance and a country's productive existence.

The positive and significant effect of working capital loans is a cornerstone of growth. According to the regression results, the economy reciprocates when businesses are assisted with their daily operations. This conclusion makes perfect sense and is intuitive. Working capital loans pay salaries, finance raw supplies, and support operating expenses that maintain the supply lines and factories. Free credit allows manufacturing to continue uninterrupted, market circulation to remain active, and the national economy to hum with activity. The results of Nurjannah and Nurhayati (2021), who highlighted the importance of working capital loans as a catalyst for short- to medium-term productivity and growth, are in perfect agreement with this. This also aligns with the findings of Wiguna and Viverita (2021), who discovered that, when compared to other loan types, working capital loan growth shows the best link with economic growth. Similarly, Soedarmono et al. (2017) pointed out that while working-capital loans are particularly useful in Indonesia for fostering growth, an over-reliance on investment or consumer loans may, ironically, impair economic performance.

The finding that investment loans exert a significant negative effect, with a coefficient of -9.308, presents a paradox that is worth examining. Ideally, these loans are intended to enhance productive capacity, modernize industries and bolster long-term competitiveness. Nevertheless, the data indicate that during the research period, this type of funding did not result in immediate growth but rather had the opposite effect. There could be several reasons for this unexpected outcome. Time lags are common in investment projects, and the advantages of new infrastructure or industries usually take time to manifest. Furthermore, the intended benefits of these loans may be compromised by inefficient bureaucracy, delays in project completion, or improper use of funds. To guarantee that capital is used efficiently rather than misdirected or left idle, Maherika et al. (2021) emphasize the need for tighter control of investment credit distribution. This will help promote the same growth that credit is intended to do.

Consumer loans tell a different story: Their coefficient, -3.820, accompanied by an insignificant t-value, suggests that an increase in household borrowing does not significantly propel economic growth. At first glance, this may seem counterintuitive, since consumption forms a large share of Indonesia's gross domestic product (GDP). However, the distinction lies in the quality of spending. Consumer credit often finances durable goods, housing, and immediate household needs. While these enhance living standards and sustain demand in the short run, they do not expand the economy's productive frontier. Worse, unchecked growth in consumer credit risks fuels inflationary pressures or speculative bubbles, particularly in sectors such as real estate and automotive markets. This interpretation supports the findings of Lestari et al. (2022), who argue that growth requires a focus on credit that stimulates productive investment, whereas consumer credit must be carefully managed to avoid imbalances. Similar concerns have been echoed in international research. Arcand et al. (2015) demonstrated that when credit-to-GDP ratios approach 100 percent, additional lending no longer fuels growth and may instead dampen it. Cecchetti and Kharroubi (2012) likewise warn that finance is beneficial only up to a point, beyond which it becomes a drag on expansion.

The F-test result, with an F-statistic of 10.076 far exceeding the critical value of 3.59, affirms the collective significance of all three types of credits. Although their individual effects vary, with some being positive and others negative, their combined force is sufficiently strong to shape the trajectory of the economy. Therefore, the regression model was validated as a credible tool for explaining variations in growth. In reflective terms, this result underscores that credit, in the aggregate, is more than the sum of its parts. The economy responds not only to each channel of lending in isolation but also to their interactions. Together, they form a financial ecosystem that sustains or destabilizes growth, depending on how balance is maintained.

The correlation coefficient of $R = 0.856$ and the determination coefficient of $R^2 = 0.733$ reinforce this conclusion. These values indicate that approximately 73 percent of the variation in Indonesia's economic growth over the study period can be explained by the distribution of working capital, investment, and consumer credit. The extent of this link suggests that loan allocation and macroeconomic success are strongly related. This suggests that lending choices affect the economy as a whole, highlighting the intimate relationship between financial and growth rhythms. Global conversations about finance-led growth are reflected in this study's conclusion. Levine (2005) points out that whereas misallocation negates the purpose of finance, well-allocated capital can encourage new ventures and entrepreneurial activity. Similarly, the BIS (2024) cautions that numerous emerging nations' credit expansions eventually shift to real estate and speculative endeavors, flattening growth gains and increasing vulnerability.

The results point to a nuanced reality of how company loans contribute to economic growth. These loans are essential for providing businesses with the funds they need to expand their market reach, buy equipment, hire more employees, and invest in operations. In addition to encouraging innovation and productivity within businesses, this resource infusion boosts competitiveness, promoting growth on a local and national scale. Furthermore, loan money provides aspiring business owners with a crucial starting point that enables them to turn their concepts into actual companies. This process not only creates job opportunities but also sparks innovation and maintains economic vitality in the region.

The results of these loans do not uniformly impact the economy. Working capital credit is crucial for sustaining day-to-day operations and ensuring trade and production continuity. However, investment loans are difficult to obtain when projects encounter delays or inefficiencies, even though they promise higher long-term profits. Additionally, even though consumer credit improves household welfare, it must be carefully controlled to avoid inflation or economic imbalances. Together, this trio of credit demonstrates how crucial it is to determine the course of national development. The knowledge acquired clearly places Indonesia in the larger context of finance and development, showing that although credit is still necessary, its effects depend on effective strategic management. To maintain welfare without jeopardizing stability, governments and financial institutions must carefully manage credit flows by promoting working capital, concentrating investments on truly productive ventures, and controlling consumer lending. Indonesia can steer towards resilient, inclusive, and sustainable economic growth by addressing these issues.

4. CONCLUSION

This study shows that the impact of various loan flows on Indonesia's economic development varies. The most crucial type of credit is working capital credit, which supports both the production cycle that drives the economy as a whole and the daily operations of the enterprises. Investment financing sometimes fails when delays and inefficiencies occur, weakening its potential, even if it is meant to boost capacity and protect the future. Consumer credit has limitations as a long-term growth engine, despite increasing demand and household welfare. Taken together, these findings serve as a reminder that money is neither a magic bullet nor a guaranteed method of accumulating wealth. The alignment, timing, and direction of this tool determine its effectiveness.

This study has both strategic and practical implications. Banking institutions and policymakers are expected to use discretion when coordinating credit flows. Support for working-capital loans is essential because it protects economic stability and productivity. To guarantee that funds genuinely increase productive capacity rather than stall in unfinished projects, investment credits require stricter oversight and more judicious distribution. Consumer credit should be carefully controlled, promoted in ways that improve welfare, and limited to areas where it could lead to inflation or imbalance. Indonesia can develop a financial system that not only meets short-term demands but also fosters resilience, competitiveness, and inclusive growth in the years to come by balancing various loan sources.

Ethical Approval
Not Applicable

Informed Consent Statement
Not Applicable

Authors' contributions
SH contributed to the conceptual framework, literature review, and theoretical formulation of this study. AY was responsible for data acquisition, preprocessing, and assisting with the econometric analysis. DS led the methodology design, performed the empirical analysis, interpreted the results and finalized the manuscript. He also served as the corresponding author and handled the submission processes.

Disclosure Statement
The Authors declare that they have no conflict of interest

Data Availability Statement
The data presented in this study are available upon request from the corresponding author for privacy.

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