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NAVIGATING ECONOMIC UNCERTAINTY: EXPLORING THE IMPACT OF REDUCED BANK CREDIT ON THE CONSTRUCTION INDUSTRY

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ABSTRACT

Purpose: *This paper aims to analyze credit in the Indonesian banking construction sector empirically. Specifically, we examine whether economic conditions affect construction sector credit and how the response and diversity of construction sector credit in the face of economic shocks.*

Methodology/approach: *This article use monthly data on Indonesian banking credit from 2004 to 2022 using the Vector Error Correction Model (VECM).*

Findings: *The long-term effects of the economy on credit are shown by the results of the VECM research. The Impulse Response Function (IRF) results indicate that credit in the construction industry has both positive and negative effects. Forecast Error Variance Decomposition (FEVD) analysis shows that gross domestic product, crises, industrial price index, interest rates, exchange rates, and inflation affect credit diversity.*

Practical implications: *Banking credit is an essential component in meeting company needs. Banks need to consider several things in the distribution of credit to the construction sector, especially those that impact the long term.*

Originality/value: *This research provides a better understanding of how the construction sector credit can be affected by changing economic conditions, and how diverse credit responses and policies are in the face of such shocks.*

KEYWORDS: *Credit; Industry; Crisis; Interest Rate; Inflation.*

ABSTRAK

Tujuan penelitian: Paper ini bertujuan untuk menganalisis kredit sektor konstruksi perbankan Indonesia secara empiris. Secara khusus, kami menguji apakah kondisi ekonomi mempengaruhi kredit sektor konstruksi dan bagaimana respon dan keragaman kredit sektor konstruksi dalam menghadapi guncangan ekonomi.

Metode/pendekatan: Artikel ini menggunakan data bulanan kredit perbankan Indonesia dari tahun 2004 hingga 2022 dengan menggunakan Vector Error Correction Model (VECM).

Hasil: Dampak jangka panjang dari perekonomian terhadap kredit ditunjukkan oleh hasil penelitian VECM. Hasil Impulse Response Function (IRF) menunjukkan bahwa kredit pada industri konstruksi memiliki dampak positif dan negatif. Analisis Forecast Error Variance Decomposition (FEVD) menunjukkan bahwa produk domestik bruto, krisis, indeks harga industri, suku bunga, nilai tukar, dan inflasi mempengaruhi keragaman kredit.

Implikasi praktik: Kredit perbankan merupakan komponen penting dalam memenuhi kebutuhan perusahaan. Perbankan perlu mempertimbangkan beberapa hal dalam penyaluran kredit ke sektor konstruksi, terutama yang berdampak jangka panjang.

Orisinalitas/kebaharuan: Penelitian ini memberikan pemahaman yang lebih baik tentang bagaimana kredit sektor konstruksi dapat dipengaruhi oleh perubahan kondisi ekonomi, dan bagaimana beragamnya respons dan kebijakan kredit dalam menghadapi guncangan tersebut.

KATA KUNCI: Kredit; Industri; Krisis; Suku Bunga; Inflasi.

INTRODUCTION

In recent years, numerous empirical studies in research on the influence of finance on economic growth and the utilization of various approaches have contributed to the growth of the financial literature. These studies have shown that bank credit has a favorable impact on economic growth (Benczúr et al., 2019; Chu, 2020; Gazdar & Cherif, 2015). The central part of the financial literature suggests that financial institutions' development should lead to economic development in any sector (Alinsari & Putri, 2022; Kavya & Shijin, 2020; Tayssir & Feryel, 2018).

Along with the rapid development of societies worldwide, economic development occupies an important position and has increased society's economic and social development

(Litsareva, 2017; Sarkis & Daou, 2013). The construction industry is an example of an economic sector that is vital to the process of economic development and plays an important role in doing so (Khan et al., 2014). The construction sector contributes more when a country's economy is experiencing growth because it can provide high investment in other economic sectors (Musarat et al., 2020; Rothenberg et al., 2016).

Indonesia is one of the developing nations that is currently engaged in the process of implementing sustainable economic development across a variety of industries, most notably the construction industry (Hermawan et al., 2017; Setiawan et al., 2015). Developing infrastructure in a country is significant to stimulate economic activity, reduce poverty, increase income levels, create jobs, and encourage human resource development (Kodongo & Ojah, 2016; Le Goff & Singh, 2014; Marinho et al., 2017).

The downstream problem in financial viability in infrastructure projects has caused some private financial institutions not to invest. The infrastructure project will positively contribute to economic development (Marinho et al., 2017). However, the amount of revenue generated by the project is not sufficient to return the level of profit anticipated by financial institutions in the form of return on capital and loans. As a consequence of this, banks and other financial institutions are not interested in investing in the project (Ghenimi et al., 2017; Salman & Nawaz, 2018). Therefore, the government must support infrastructure projects by involving the banking sector and other financial institutions so that infrastructure facilities can still run as well as possible, one of which is using financing or providing credit (Khmel & Zhao, 2016; Ozili, 2018).

The construction sector is crucial in supporting economic development in a country that plays a role in driving the real sector, directly involving many people (Stasiak-Betlejewska & Potkány, 2015). Banking provides capital assistance to the real sector by distributing funds in credit or financing, especially in the construction sector. Additionally, the construction industry is dynamic and has the potential to deliver a multiplier effect that is helpful in increasing welfare. This can be accomplished either directly through the creation of new jobs or indirectly through a contribution to gross domestic product (Kodongo & Ojah, 2016; Marinho et al., 2017).

The unpredictability of the economic climate has unquestionably contributed to shifts in the amount of credit made available to the construction industry. Instability is typically the result of a confluence of market failures, which can be attributed to either structural or behavioral factors. Both internal and external factors can contribute to the failure of a market. These various economic conditions could increase and more various financial system instability, thus impacting bank lending.

Michail (2020) revealed that economic instability has the potential to affect credit availability, where in periods of economic instability, financial institutions may become more cautious in extending credit, hampering further economic growth. David et al. (2020) research highlights how disease outbreaks can disrupt credit flows, as increased uncertainty encourages financial institutions to reduce lending. Kaur & Singh (2020) research suggests that Exchange Traded Funds (ETFs) may have an impact on credit access, where more efficient investment instruments such as ETFs may attract more investors, affecting the flow of funds to financial institutions and potentially affecting credit availability. Chu (2020) reformulates the relationship between financial structure and economic growth, which can permeate access to credit for firms. In the context of exchange rates, Gil-Alana & Carcel (2020) indicate that exchange rate fluctuations can affect the competitiveness of exports and imports, which in turn can potentially affect access to credit for firms engaged in international trade.

Salmanzadeh-Meydani & Ghomi (2019) highlight how economic growth related to electricity consumption and capital stock can affect the need for credit, especially in supporting infrastructure projects.

Adedokun (2018) reviews the implications of oil price shocks in Nigeria on government fiscal stability, which may have consequences for the availability and management of government credit. Carreras et al. (2018) open new perspectives in analyzing macroprudential risks, which may affect credit arrangements and overall financial system stability. Yin & Ma (2018) observe the causal relationship between oil prices and the dollar exchange rate, which may affect access to credit and the cost of international trade. Within the scope of globalization and financial trends, Muye & Muye (2017) research explores the impact on cross-border credit and risk. Chen et al. (2017) discuss the role of geographical dependence in real estate markets, which could also have implications for property-related credit assessment. Finally, Singh & Singh (2016) analysis of equity market linkages between the US and BRIC (Brazil, Russia, India, and China) countries highlights the importance of risk perception and investor confidence in international credit.

No one has explicitly discussed the impact of economic instability on credit in the construction sector from the research done. Therefore, this study was carried out to fill in the gaps in our knowledge. Bank Indonesia data states that banks' credit to the construction sector as of February 2019 experienced growth for investment and working capital. Construction loans for investment reached IDR 105.7 trillion, growing 3% from the previous month and up 47.8% (year-on-year). Meanwhile, working capital construction loans reached IDR 211.6 trillion, up 1.8% from the previous month and growing 21.4% (year-on-year).

The increase in demand for construction sector credit is reflected in October, experiencing an increase in growth compared to the previous month. Likewise, in 2020, the demand for construction credit seems to be getting more significant at the end of 2020. Based on Bank Indonesia's data, construction credit in October 2020 was recorded at 379.5 trillion rupiahs which grew by 3.4% compared to the same period last year (year-on-year). Meanwhile, construction credit only grew by 0.9% (year-on-year) to IDR 374.6 trillion in September. This data confirms that the need for credit in the construction sector is enormous. Therefore, further analyzing the construction sector's credit potential is necessary.

The urgency underlying the conduct of this research is significant, as there is a gap in understanding the potential impact of economic instability on credit in the construction sector. Despite the notable growth in demand for credit in the construction sector, studies have yet to explore how economic fluctuations may affect the pattern of credit demand and availability in this context. As a sector that plays a vital role in a country's infrastructure development and economic growth, an in-depth understanding of how economic instability can affect credit dynamics in the construction sector will provide essential insights for various stakeholders.

Through careful analysis, this research can potentially uncover the complex relationship between volatile economic conditions and the need for and accessibility of credit in the construction sector. The resulting information will play an essential role in assisting financial institutions in making credit decisions that are more scalable and adaptive to economic turmoil. In addition, this research will provide valuable input in developing economic policy and financial regulation. The findings and analysis presented will assist in formulating policies that are more effective in addressing the challenges of economic instability and supporting the development of the construction sector in a challenging situation.

It is the goal of th is research to examine the relationship between economic conditions and construction sector credit, as well as the response of construction sector credit to economic shocks. This research contributes to first understanding the problems that exist in the construction sector credit. Second, the findings of this study can serve as a guide for future investigations into similar issues. Third, the government can consider the results of this research in making policy decisions, especially in optimizing construction sector credit.

METHODS

This study uses a sample of conventional banking with monthly time series data from 2004 to 2022. This study uses construction sector credit (CRD), where the amount of credit disbursed to the construction sector, interest rates (RTE), where the service fee provided by banks to customers who buy, economic crisis (CRS), gross domestic product (GDP) where the amount of added value generated by all business units in a particular country, inflation (IFL) where the increase in the price of goods and services in general and continuously within a certain period, the exchange rate (EXT) where the exchange rate between two countries agreed by the inhabitants of the two countries to trade with each other, and the industrial price index (IPI) where the rate of price change. The research data is sourced from Bank Indonesia, the Financial Services Authority, and the Central Bureau of Statistics with a total of 1314 observations. The research method uses Vector Autoregressive (VAR) to answer the research objectives. VAR is an n-equation with n-variables where the lag value describes each variable, the current and past values.

Equation (1) is the general form of the autoregression (AR) model in time series analysis. In this equation, y_t represents the observed value at time t (current), while y_{t-1}, y_{t-2}, ..., y_{t-p} represent the observed values at previous times in the time series. The variable e_t represents the residual or error at time t, which reflects the difference between the observed value and the value predicted by the model. The AR model assumes that previous values in the time series directly influence the current value, with coefficients A_1 to A_p describing the magnitude of the impact of those previous values. These coefficients reflect the impact of the previous time lag on the current value. The values of A_0 to A_p must be estimated from the data.

$$y_t = A_0 + A_1 y_{t-1} + A_2 y_{t-2} + \cdots + A_p y_{t-p} + e_t \quad (1)$$

The Vector Error Correction Model is used if the data is non-stationary but cointegrated (VECM). Where y_t is the vector containing the analyzed variables, m_{0x} is the intercept vector, $m_{1x}t$ is the regression coefficient vector, t is the time trend, II_x is $a_x\beta'$ with β' containing the long-run cointegration equation, y_{t-1} is the in-level variable, τ_{ix} is the regression coefficient matrix, $k-1$ is the VECM order of VAR, and e_t is the error term. Where yt is a vector of size (n*1) containing n variables, A0 is the size (n*1), A1 is the size (n*n) parameter matrix for each i, and et is the error vector of size (n*1).

$$\Delta y_t = m_{0x} + m_{1x}t + II_x y_{t-1} + \sum_{i=1}^{k-1} \tau_{ix} \Delta y_{t-1} + e_t$$

The steps using the VAR method start with a stationary test. Time series data are subjected to a stationary test in order to determine if they are, in fact, stationary. In order for a time series to be termed stationary, there must be no unit root present. Each variable is tested at both the level and the differential level. Static data were subjected to the Augmented Dickey-Fuller (ADF) test for testing purposes.

Following the optimal lag test, the model's optimal lag will be determined. In addition, optimal lag testing aids in the eradication of VAR system autocorrelation issues. The least value of the Akaike Information Criterion (AIC) is used to determine the optimal lag. The goal of the VAR stability test is to ensure that the results of the VAR system are accurate. Each root must be less than one and within the unit circle for VAR to be considered stable. Because variables that are not stationary are cointegrated, the cointegration test attempts to determine this. Testing for cointegration is carried out using the Johannsen test.

The response of an endogenous variable to a specific shock is measured using the Impulse Response Function (IRF). A single shock can have a long-term impact on the innovation of endogenous variables, which IRF monitors. After all the tests have been fulfilled, the VECM is formed, and the estimation results can be analyzed. The final step is to estimate Forecast Error Variance Decomposition (FEVD) to see how a variable changes along with changes in error variance. Using this approach, it is possible to see how the relative strengths and weaknesses of various variables affect one another over time. This research uses E-views as a statistical tool to answer the research objectives.

RESULT AND DISCUSSION

Stationary Test

To remove spurious regression from time series data, the stationary test is used. Because of the presence of the unit root at the level, time series data tend to be non-stationary. The stationarity of the data was examined using the Augmented Dickey-Fuller test. It is clear that the stationary test findings suggest that all of the studied variables are not stationary at the level. This non-stationary data is then re-tested at the level of difference, and the result is that all data analyzed are stationary (ADF statistic > critical value). CRD, EXT, CRS, GDP, IFL, IPI, and RTE all have p values less than 0.05 on the difference. Therefore, the results reject the null hypothesis that the variables have unit roots; thus, the variables are stationary at the difference.

Optimum Lag Test

The optimum lag test analyzes how long the variable's reaction takes to other variables and eliminates the VAR model's autocorrelation problem. This study uses the least Akaike Information Criterion (AIC) criteria for its lag length test. The use of the smallest AIC value for the optimal lag value reference. This study tested the VAR model with different lag levels and compared it with the AIC value. The lag test results show that this research model is optimum at lag 1.

Table 1. Results of Data-Static Testing

Variable	Level			Difference		
	ADF Statistic	Prob.	Result	ADF Statistic	Prob.	Result
CRD	-1.2895	0.6346	No	-15.3330	0.0000	Yes
EXT	-0.9431	0.7730	No	-11.1774	0.0000	Yes
CRS	-2.3834	0.1476	No	-14.7104	0.0000	Yes
GDP	-3.0274	0.0340	No	-3.96342	0.0020	Yes
IFL	-2.2659	0.1841	No	-11.0659	0.0000	Yes
IPI	-6.1603	0.0000	No	-19.5739	0.0000	Yes
RTE	-1.6376	0.4616	No	-14.0459	0.0000	Yes

Lag	LogL	AIC
0	150.294	-1.352
1	1907.929	-17.471*
2	1949.405	-17.400
3	1993.030	-17.349
4	2024.303	-17.182
5	2076.599	-17.213
6	2104.515	-17.014
7	2149.106	-16.973
8	2184.520	-16.844

Table 2. Obtaining the Best Possible Lag Scores

*lag order selected by the criterion

VAR Stability Test

After the optimal lag test, the VAR stability test is carried out. To ensure the accuracy of the Impulse Response Function and Variance Decomposition, it is necessary to run a VAR stability test. This test determines if the combined results of the VAR estimate and the error correction model are stable. An estimate of VAR stability can be made by determining if a certain polynomial root is stable. As long as all roots are less than one, the VAR system is considered to be stable. The VAR stability test results show that the VAR system is stable because the modulus has a range of less than one, ranging from 0.044871-0.960176, so the VAR model can be concluded stable in its optimal lag.

Cointegration Test

All variables are fixed at the difference during the integration process, hence the cointegration test determines long-term relationships. A positive result on the cointegration test means that the system equation contains error correction, and this reflects short-term dynamics that are consistent with long-term dynamics. Obtaining long-term information begins with establishing the cointegration rank, which tells us how many systems of equations are needed to fully explain the current system. Trace statistics and a critical value of 5% are used in the Johansen Cointegration technique to conduct the cointegration test. The equation system is cointegrated if the trace statistic result exceeds the critical value. To carry on with the investigation, the Vector Error Correction Model was used to test for cointegration (VECM).

Root	Modulus
0.992797	0.992797
0.937446 - 0.044993i	0.938525
0.937446 + 0.044993i	0.938525
0.924400	0.924400
0.822148 - 0.085808i	0.826614
0.822148 + 0.085808i	0.826614
0.553898	0.553898

Table 3. Test Results for the VAR Stability

Table 4. Results of the Cointegration Test

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.1987	185.5307	150.5585	0.0001
At most 1 *	0.1773	137.2190	117.7082	0.0017
At most 2 *	0.1423	94.6563	88.8038	0.0177
At most 3	0.1002	61.1706	63.8761	0.0827
At most 4	0.0847	38.1337	42.9153	0.1387
At most 5	0.0444	18.8341	25.8721	0.2907
At most 6	0.0401	8.9156	12.5179	0.1856

With a significance level of 0.05%, the test results can conclude that the proposed hypothesis is rejected at the 0.05% level because the resulting Trace Statistic (185.5307) exceeds the critical value (150.5585) at the 0.05% level. In addition, the p-value is very low (0.0001), which indicates that this test result is highly statistically significant. Thus, the cointegration results have strong evidence to reject the hypothesis of no cointegration between the variables in the model at the 0.05% significance level.

Short and Long-Term Results

Based on the processing results, the short-term CointEq1 t-statistic is significant. These results indicate the speed of adjustment to equilibrium, which means that the error is corrected by -0.019118% every month toward the optimal credit target. In the near run, the variables included in this study have little effect. Exchange rate (EXT), Inflation (IFL), Gross Domestic Product (GDP), and Crisis (CRS) all have long-term effects on construction finance.

Then the variable exchange rate (EXT) significantly affects credit in the construction sector in short and long term. When the value of one currency is relative to another falls, or depreciates, the price of items that are imported will rise as a direct consequence. Because the vast majority of international trade is conducted in U.S. dollars, even as the cost of imported goods continues to rise and an increasing number of industries are dependent on imported raw materials, the impact that a depreciating rupiah exchange rate will have on the economy will be even more severe (Caporale & Zekokh, 2019; Hossain, 2016; Magud & Vesperoni, 2015). In addition, because the industrial company is at risk of going out of business, there is a possibility that its employees could lose their jobs, which would have a negative impact on economic growth (Hakim & Apriliani, 2020).

Short Term		
Variable	Coefficient	[t-statistic]
CointEq1	-0.019118	[-2.06884]*
EXT	-0.249623	[-2.64832]*
IFL	0.005691	[0.35478]
RTE	-0.029137	[-1.18362]
IPI	0.006647	[0.14636]
GDP	-0.009909	[-0.65347]
CRS	-0.003349	[-0.23610]
Long Term		
EXT	-1.564201	[-3.75342]*
IFL	0.364148	[3.07252]*
RTE	-0.124818	[-0.54767]
IPI	0.671214	[0.98607]
GDP	-1.054100	[-6.53972]*
CRS	-0.469266	[-4.76768]*
C	621.488	

Table 5. Analyses of a Vector-Error Correction Model

*significant at 5 percent (t=1.96)

The inflation variable (IFL) significantly affects credit in the construction sector. When inflation increases, the amount of credit will increase. Then because the credit score becomes cheap, it will increase the number of construction companies using the credit. The increase in the amount of credit is because when there is inflation, there will be a weakening of the currency value, which results in a mean credit value (Chadwick, 2018; Nahar & Sarker, 2016; Musarat et al., 2020).

In the construction industry, credit is greatly influenced by interest rates (IR). The less money that can be borrowed, the greater the interest rate paid. A rise in interest rates has the potential to limit its appetite for extending credit and, as a result, its willingness to incur large expenditures. Interest rate changes will affect the extended amount of credit (da Silva & Pirtouscheg, 2015; Jiménez, Mian, Peydró, & Saurina, 2020). An increase in interest rates is because most companies want low credit numbers and expect more significant income to substitute for credit costs.

The crisis variable (CRS) significantly affects credit in the construction sector. The economic crisis will generally disrupt banks, especially commercial banks, by increasing interest rates. The increase in commercial bank interest rates will tighten credit, which usually does not fully meet the 5C (Character, Capacity, Capital, Condition, and Collateral) criteria, especially in terms of collateral (Ashraf, Zheng, Jiang, & Qian, 2020; Bian, Lin, & Liu, 2018; Chen & Lin, 2016). However, if the operation does not depend on export-import, exchange rate fluctuations will not directly affect it (Byström, 2014; Medvedev, 2016). With domestic and even local economies of scale, construction activities are becoming more resilient in facing crises. This condition will likely encourage credit growth even though the economy is currently in crisis.

The gross domestic product (GDP) variable significantly affects credit in the construction sector. These results indicate that the level of public consumption will increase with an increase in GDP. Therefore, credit demand will also increase, helpful in meeting public consumption (Duican & Pop, 2015; Louhichi & Boujelbene, 2016). The increase in public consumption will prevent construction companies from fulfilling their needs in carrying out their work.

Impulse Response Function

The construction sector credit (CRD) responded negatively to the exchange rate shock (EXT) in the second -0.004651 percent. It dropped to -0.006346 percent by the end of the third period. As of the fifth period, it had dropped to -0.006296 percent, down from -0.006540 percent in the fourth period. Once we reached the twentieth period, it started to stabilize and remained stable until the end of the experiment.

The construction sector credit (CRD) responded positively to inflation shocks (IFL) in the second period of 0.000349 percent. It down to -0.000199 percent by the end of the third quarter. There was a decrease of -0.000608 percentage points between periods four and five, and then a further loss of -0.001043 percentage points between periods six and seven, until it dropped to -0.001092 percentage points in the eighth period of the experiment. A stabilizing trend can be observed starting about twenty-one period.

The second phase of -0.002412 percent interest rate (RTE) shock had a detrimental impact on construction sector credit (CRD). It was -0.003080 percent as the third period began. When it reached the twenty-one period, it had steadied at -0.002599 percent, and it remained there until the end of the observation. Construction credit (CRD) reacted negatively to the shock of industrial price index (IPI) in the third period of -0.000473 percent, becoming -0.000349 percent in the fourth period, increasing again in the fifth period to -0.000249 percent in the sixth period, and stabilizing in the twenty-two period until the end of observation.

After increasing by 0.001420 percent in the second period, 0.004330 percent in the third, 0.006922 percent in the fourth, and then 0.008986 percent in the fifth, construction industry credit (CR) responded positively to GDP shocks. Until the twenty-fourth period of 0.014481 percent, it increased steadily. It was in the twenty-fifth period of monitoring that the construction sector's credit reaction began to stabilize. There were positive responses from construction industry credit in periods two and three to crises shocks (CRS), with a CRD response rate of 0.000850 percent in each. In the fourth period, the construction sector credit reacted positively by 0.004150 percent; the fifth period became 0.005157 percent and stabilized while entering the twenty-two period until the end of the observation.

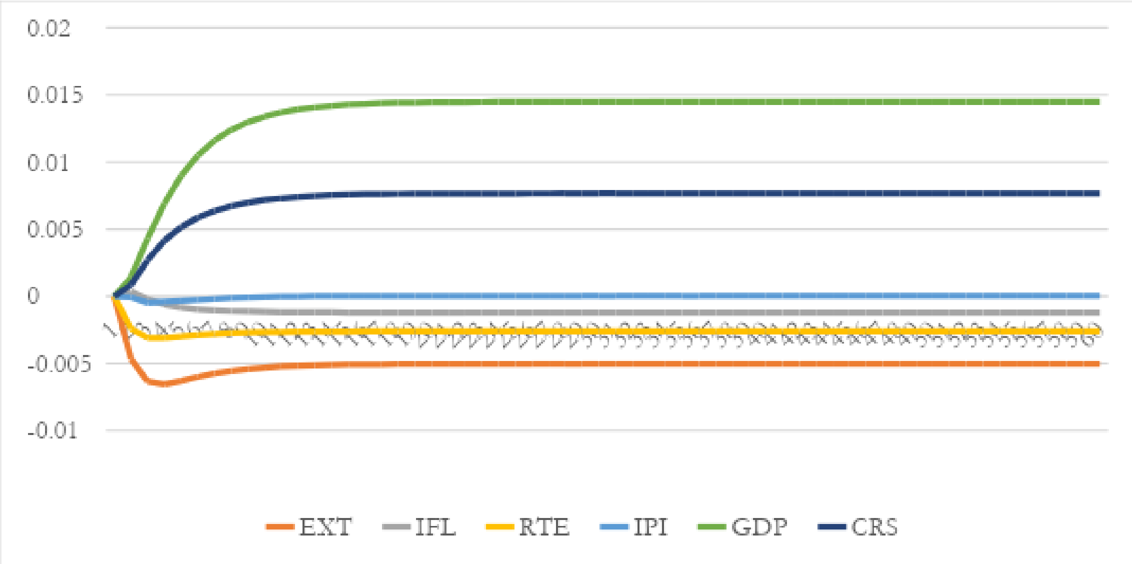

Figure 1.
The Shock of Each Variable

Forecast Error Variance Decomposition

Using Forecast Error Variance Decomposition (FEVD) analysis, this study intends to show how Indonesia's construction sector's diverse loan supply is related to each variable. In the present and future, this study will reveal the ratio of shocks' influence on one variable to shocks' effect on other variables. Construction sector credit has a one-to-one relationship with the first period's credit diversity, according to the FEVD data.

When other variables were taken into account, they had varying amounts of responses to diversity in the construction sector. Over the course of the study, the construction sector credit itself contributed 87.03% of the variance in construction sector credit (CRD), followed by GDP at 8.47 percent, the crisis at 2.43%, the exchange rate at 1.59% , the interest rate at 0.4%, inflation (IFL) at 0.06%, and finally industrial price index at 0.002% as the most significant influences on the CRD variance.

The FEVD results show that the credit variable in the construction sector (CRD) has the largest share in explaining its variation, with a contribution of 87.03%. This means that the internal factors affecting the construction sector credit supply have a significant impact. The results further identified the Gross Domestic Product (GDP) variable as the next contributor, accounting for 8.47% of the variation in CRD. This indicates that macroeconomic growth is essential in influencing credit fluctuations in the construction sector.

Furthermore, the FEVD results also highlighted the contribution of other variables such as crisis (2.43%), exchange rate (1.59%), interest rate (0.4%), inflation (0.06%), and industrial price index (0.002%). This confirms that these economic factors jointly influence the dynamics of the construction sector's credit supply, albeit in lower proportions.

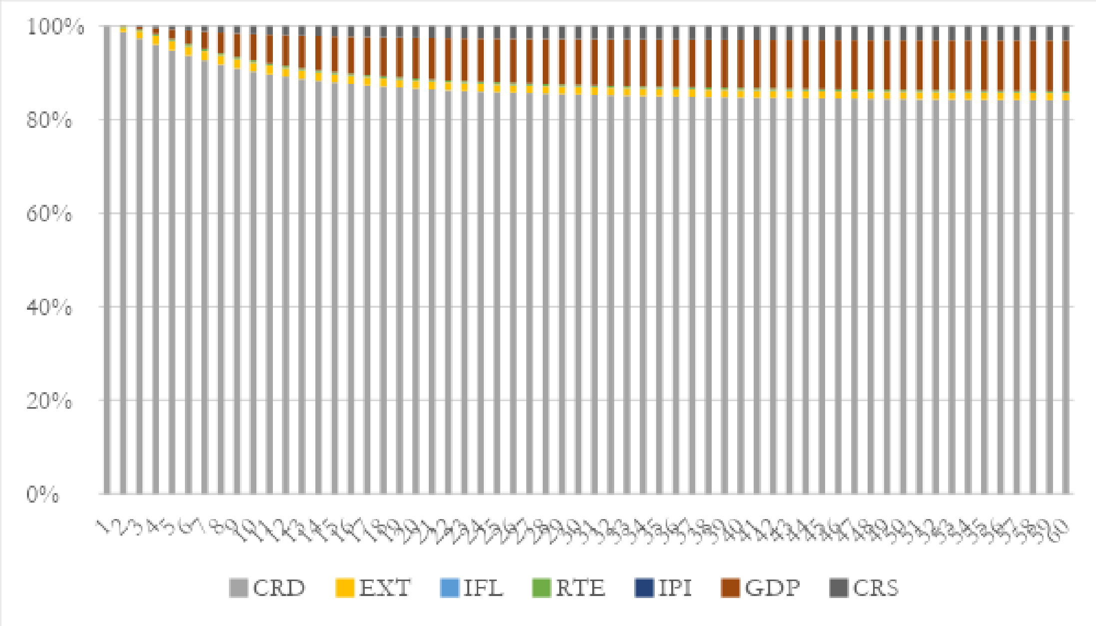

Figure 2. The Diversity of Each Variable

CONCLUSION

The VECM estimation results show that exchange rate (EXT), inflation (IFL), crisis (CRS), and gross domestic product (GDP) affect credit in the construction sector in the long term but have no effect on the short term. The Impulse Response Function (IRF) results show that credit distribution in the construction sector provides positive and negative responses to the variables studied. The credit response in the construction sector quickly becomes stable when it responds to inflation, followed by the exchange rate, gross domestic product, interest rates, industrial price index and the crisis. The Forecast Error Variance Decomposition (FEVD) analysis shows that construction sector credit has the most significant influence on the variety of credit in the construction sector, followed by gross domestic product, crisis, exchange rates, interest rates, inflation, and industrial price index.

Limitation And Suggestion

Banks must pay attention to several things that affect lending to the construction sector because credit in the construction sector is long-term, such as exchange rate (EXT), inflation (IFL), crisis (CRS), and gross domestic product (GDP), where these variables have a long-term influence on this study. The government needs to maintain economic stability and quickly anticipate shocks in the economic climate. The government allows banks to restructure without classifying the credit as a loan at risk. This restructuring will help banks where banks have to provide relaxation to postpone interest and principal and even lower loan interest rates. The government can allow liquidity coverage and a net stable funding ratio of as low as 85 percent to ease operating expenses. Besides, banks need to be selective in lending to the construction sector. Banks must ensure that the prospective debtor's guarantee or collateral level is appropriate to the market risk. If the demand for credit in the construction sector still needs to improve, then the reduction in interest rates impacts increasing demand for credit insignificantly. Therefore, there is a need for a more maximal boost from the fiscal side to stimulate the construction sector to revive the economy.

This study only discusses factors affecting construction sector lending, such as exchange rate, inflation, crisis, and GDP. However, this research could be more robust by considering additional factors such as international interest rates, government regulations on property, and socio-political factors. In addition, a more in-depth analysis of the long-term impact of credit restructuring and potential moral hazard should also be considered. Suggestions for future research include the analysis of credit risk and NPLs over time and studies involving the views of relevant parties such as banks, government, and construction industry players. Finally, the impact of fiscal policy on construction sector growth could also be a focus for future research.

REFERENCES

Bhati, S., Zoysa, A. D., & Jitaree, W. (2019). Factors Affecting the Liquidity of Commercial Banks in India: a Longitudinal Analysis. *Banks and Bank Systems*, *14*(4), 78-88. https://doi.org/http://dx.doi.org/10.21511/bbs.14(4).2019.08.

Bilal, Z. O., & Salim, B. F. (2016). Does Basil III Implementation Impact on Financial Performance? Evidence from Omani's Commercial Banks. *International Journal of Economics and Financial Issues*, *6*(3), 963-971. https://dergipark.org.tr/tr/download/article-file/364820.

Boora, K. K., & Kavita. (2018). The Impact of Basel III Norms on Profitability: An Empirical Study of Indian Public Sector Banks. *IUP Journal of Financial Risk Management*, *15*(3), 44-58. https://www.proquest.com/openview/073114817e7dc8bdfc2ecbc576d2e161/1?pq-origsite=gscholar&cbl=54459.

Calomiris, C. W., Heider, F., & Hoerova, M. (2015). Theory of Bank Liquidity Requirements. Characteristics on Eve of Liquidity Coverage Ratio Application - The Case of the Czech Republic. *Columbia Business School Research Paper No. 14-39*. https://doi.org/https://doi.org/10.2139/ssrn.2477101.

Douglas W. D, Raghuram G. R (2002) A Theory of Bank Capital, The Journal of Finance, 55(6), 2431-2465, https://doi.org/10.1111/0022-1082.00296

Fibriyanti, Y. V., & Nurcholidah, L. (2020). Pengaruh CAR, NPL, NIM, BOPO Dan LDR Terhadap Profitabilitas Bank Umum Swasta Nasional Devisa. *Jurnal Sains Sosio Humaniora*, *4*(2), 344-350. https://doi.org/https://doi.org/10.22437/jssh.v4i2.10863.

FSI. (2019). Financial Stability Institute. *Bank for International Settlements*. https://www.bis.org/fsi/fsisummaries/nsfr.pdf.

Ghozali, I. (2018). *Aplikasi Analisis Multivariate dengan Program IBM SPSS 23 Update PLS Regresi*. Badan Penerbit Universitas Diponegoro.

Giordana, G. A., & Schumacher, I. (2017). An Empirical Study on the Impact of Basel III Standards on Banks Default Risk: The Case of Luxembourg. *Journal of Risk and Financial Management*, *10*(2), 1-21. https://doi.org/https://doi.org/10.3390/jrfm10020008.

Golubeva, O., Golubeva, O., Duljic, M., & Keminen, R. (2019). The Impact of Liquidity Risk on Bank Profitability: Some Empirical Evidence From The European Banks Following The Introduction of Basel III Regulations. *Journal of Accounting and Management Information Systems*, *18*(4), 455-485. https://doi.org/https://doi.org/10.24818 /jamis.2019.04001.

Hamdy, A., Zaky, M., & Soliman, M. M. (2017). The impact of announcement of Basel III on the banking system performance: an empirical research on Egyptian Banking Sector. *The Business and Management Review*, *9*(2), 165-175. https://cberuk.com/cdn/conference_proceedings/conference_56239.pdf.

Hasan, R., & Zayed, N. M. (2018). The New Basel-III Capital Accord: Capability Of The Banks In Adapting And Adopting The New Regime In Bangladesh. *International Journal of Development Research*, *8*(9), 22782-22791. www.journalijdr.com.

Johnson, L. N. (2022). Basel III in Sierra Leone: Delivering on it. *Journal of Economics & Management Research*, *3*(4), 1-4. https://doi.org/https://doi.org/10.47363/JESMR/2022(3)155.

Khalifaturofi'ah, S. O. (2021). Cost Efficiency, Innovation and Financial Performance of Banks in Indonesia. *Journal of Economic and Administrative Sciences*, *ahead-of-print*(ahead-of-print). https://doi.org/https://doi.org/10.1108/JEAS-07-2020-0124.

Kiptoo, S. K., & Maniagi, G. (2020). Influence of liquidity regulation on financial performance of Commercial Banks in Kenya. *The Strategic Journal of Business & Change Management*, *7*(4), 86-96. https://doi.org/https://strategicjournals.com/index.php/journal/article/view/1778.

Magdalena, A., Marpaung, B. S., & Indira. (2019). The Effects Of Bank Funds Sources On Bank Profitability In Indonesian Stock Exchange. *Riset: Jurnal Aplikasi Ekonomi Akuntansi dan Bisnis*, *1*(2), 90-98. https://doi.org/https:// doi.org/10.35212/riset.v1i2.23.

Maria, P., & Georgoulea Eleftheria. (2016). The Impact of Basel III Indexes of Leverage and Liquidity CRDIV/CRR on Bank Performance: Evidence from Greek Banks *Journal of Economics and Business*, *66*(2), 79-107. http://hdl.handle.net/10419/169179.

Mashamba, T. (2018). The Effects of Basel III Liquidity Regulations on Banks' Profitability. *Journal of Governance & Regulation*, *7*(2), 34-48. https://doi.org/http://doi.org/10.22495/jgr_v7_i2_p4.

Merchant, K. A., & White, L. F. (2017). Linking the Ethics and Management Control Literatures. *Advances in Management Accounting*, *28*(1), 1-29. https://doi.org/https://doi.org/10.1108/S1474-787120170000028001.

Myers, Steward C. (1984). Capital Structure Puzzle. The Journal of Finance, 39(3), 574-592. https://doi.org/10.1111/j.1540-6261.1984.tb03646.x

Nisa, R., & Darzi, M. A. (2018). Impact of Basel-III Implementation on Profitability of Banks. *International Journal of Commerce and Management*, *4*(5), 101-109. http://www.managejournal.com/archives/2018/vol4/issue5

Nufus, H., & Munanda, A. (2021). Analisis Pengaruh CAR Dan NIM Terhadap ROA Pada PT Bank Muamalat Indonesia Tbk. *JUrnal Disrupsi Bisnis*, *4*(6), 497-504. https://doi.org/http://dx.doi.org/10.32493/drb.v4i6.12753

Obadire, Moyo, & Munzhelele. (2022). Basel III Capital Regulations and Bank Efficiency: Evidence from Selected African Countries. *International Journal of Financial Studies*, *10*(3), 57. https://doi.org/https://doi.org/10.3390/ijfs10030057

Ozili, P. K. (2021). Basel III in Africa: Making It Work *CBN Bullion*, *45*(1), 16-23. https://www.researchgate.net/publication/353913531_Basel_III_in_Nigeria_making_it_work

Rahman, A. A., Markom, R., & Rashid, U. S. A. (2018). The Regulatory Framework on Liquidity Risk Management of Islamic Banking In Malaysia. *International Journal of*

Business and Society, *19*(S3), 332-352. http://www.ijbs.unimas.my/images/repository/pdf/Vol19-S3-paper1.pdf

Rakshit, B., & Bardhan, S. (2022). Does Bank Efficiency Enhance Bank Performance? Empirical Evidence from Indian Banking. *Bulletin of Monetary Economics and Banking*, *25*(Special 1), 103-124. https://doi.org/https://doi.org/10.21098/bemp.v25i0.1844.

Ramchandani, Bist, K. a., & Singh, S. (2021). Impact of Cost of Funds on Bank Profitability: Evidence from Scheduled Commercial Banks of India. *Empirical Economics Letters*, *20*(special Issue 1), 1-7. https://ssrn.com/abstract=3994327

Santika, E., Fakhrughozy, M. H., Nur, W. M., & Lestari, H. S. (2022). Effect of operational risk on financial performance in banking industry IDX *Jurnal Ekonomi*, *XXVII*(01), 123-137. https://doi.org/http://dx.doi.org/10.24912/je.v27i1.915

Setiyono, B., & Naufa, A. M. (2021). The Impact of Net Stable Funding Ratio on Bank Performance and Risk Around The World. *Buletin Ekonomi Moneter dan Perbankan*, *23*(4), 543-564. https://doi.org/https://doi.org/10.21098/bemp.v23i4.1166.

Shah, S. Q. A., Lai, F.-W., Shad, M. K., Malik, M., & Sadriwala, K. F. (2022). Basel III and Firm Performance: A Lens of Managerial Ownership. *Eurasian Business and Economics Perspectives*, *1*(1). https://www.springerprofessional.de/en/understanding-student-learning-gain-using-student-staff-partners/23596742.

Sidhu, A. V., Rastogi, S., Gupte, R., Rawal, A., & Agarwal, B. (2022). Net Stable Funding Ratio (NSFR) and Bank Performance: A Study of the Indian Banks. *Risk Financial Management Journal*, *15*(11), 527. https://doi.org/ https://doi.org/10.3390/jrfm15110527

Zainudin, S. M., Rasid, S. Z. A., Omar, R., & Hassan, R. (2019). The Good and Bad News about the New Liquidity Rules of Basel III in Islamic Banking of Malaysia. *Journal of Risk and Financial Management*, *12*(3), 120. https://doi.org/https://doi.org/10.3390/jrfm12030120