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Examining Effect of Core Capital Tier 1 on Financial Stability in Indonesia

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Abstract: This research aims to examine the impact of core capital tier 1 (CCT), loan to deposit ratio (LDR), leverage ratio (LR), interconnection ratio (INR) and on stability financial that measured from credit growth rate (CGR) in Indonesia. Data in this study used secondary data with a time series of Jan 2012 – Dec 2022 using the Vector Error Correction Model (VECM) method. The estimation results show that variables that have a significant relationship to financial stability in the short term are LDR and CCT variables. In long term results, there is a positive relationship between LDR and CGR. For a given level of risk, having more capital can in principle imply greater stability. Core Capital Tier 1 assess bank resilience to adverse economic situations and maintain the stability of the financial system.

Keywords: Macroprudential, Financial System Stability, Loan to Deposit Ratio, Core Capital Tier 1

Introduction

Indonesia's economy experienced a recession which made its economic growth minus up to 2.07 percent, this was caused by the Covid-19 pandemic that hit the world including Indonesia in 2020. The Large-Scale Social Restrictions policy has disrupted the Indonesian economy. This restriction causes a lot of decline in the productivity of formal and non-formal companies. The economic downturn has also caused a high number of layoffs because companies can no longer pay proper wages. In addition, this decline also caused the company to go bankrupt (Olivia et al., 2020; Yamali & Putri, 2020).

Indonesia's finansial system stability remains safe or maintained. Bank resilience remained strong in 2020, supported by accomodative monetary and macroprudential policies, credit restructuring policy and accommodative policies from other authorities. The financing disbursed by Non-Bank Financial Industry through out 2020 decreased, but at the end of

the second half of 2020 it has begun to show signs of improvement, while the resilience of Non-Bank Financial Industry in 2020 is still mainained. This maintained finansial system stability can be seen from relatively stable finansial markets as well as banking resolience that is still in a safe and maintained zone, both in terms of capital, liquidity, and profitability (Bank Indonesia, 2021).

Financial system stability is also often defined as the absence of financial instability. This financial instability arises marked by major and sudden changes including real estate prices, securities, and financial markets. Financial institutions or markets that function poorly will be confused in terms of credit distribution or capital flows. Much of this can affect production and employment as well as inflation (Apostolakis & Papadopoulos, 2019; Phan et al., 2021).

Financial system stability describes the conditions in which economic activities such as fund allocation, pricing, and risk management run well and strengthen the country's economic growth. In general, instability in the stability of the financial system in a country can result several unfavorable situations such as monetary policy cannot function properly, as well as hampered economic growth of the country because the intermediation function does not function properly, and reduce investor confidence so that it will withdraw funds and liquidity difficulties, if this happens it will cause a systemic crisis in the country (Rusydiana et al., 2019).

In Indonesia, another word macroprudential has been symbolically used since early 2000 as a response to the financial crisis in 1997 and 1998, which has been marked by the preparation of frameworks, namely on financial system stability, especially in Indonesia. Based on this framework, Bank Indonesia as the Central Bank strives to maintain financial stability through approaches, namely: microprudential and macroprudential (Kharohmayani & Wiryono, 2020). In the early 2000s, Bank Indonesia paid attention to macroprudential policy aspects to maintain financial stability. The role of the Central Bank of Indonesia in macroprudential matters is obtained in the law of the Republic of Indonesia in No. 21 in 2011, namely on matters related to the Financial Services Authority (OJK), as well as by switching its function from regulation and supervision in banks, namely (microprudential) to OJK.

Testing the impact of macroprudential policy instruments on financial stability, most studies use of the loan-to-value (LTV) ratio and/or the countercyclical capital buffer (CCyB) as explanatory variables. However, a more diverse range of macroprudential policy instruments were used in Lorencic & Festic's (2022) research. In the article, its investigate the impact of six banking sector aggregate balance sheet variables influenced by macroprudential policy instruments (common equity tier 1 ratio (CET); loan-to-deposit ratio (LDR); nondeposit funding as percentage of total funding (NDF); leverage ratio (LR); interconnectedness ratio (INR); and coverage ratio (CR)) on financial stability (as measured by credit growth rate (CGR).

Based on the Financial Services Authority (OJK) Regulation Number 11/POJK.03/2016 concerning the obligation to provide minimum capital for banks in Indonesia, Common Equity Tier 1 (CET) is part of core capital tier 1. The components and requirements of capital instruments are adjusted to refer to international standards to improve the quality of bank capital. The bank's core capital tier 1 must be dominated by high-quality capital instruments. OJK considers the economic conditions and stability of the financial system,

while still paying attention to the principle of prudence, has the authority to determine the risk weight of ATMR or such as Risk Weighted Assets which is different from the risk weight regulated in the implementing regulations of the Financial Services Authority Regulation and the amount of additional capital as a buffer which is different from the amount of additional capital regulated in the Financial Services Authority Regulation.

Hirtle et al., (2016) capital stress testing has become an increasingly relied upon macroprudential tool by central banks and banking supervisors. The amount and quality of bank capital are crucial for maintaining public confidence in financial institutions and the financial system as a whole, as demonstrated by the recent financial crisis. Dao et al., (2022) regulatory capital such as Common Equity Tier 1 (CET1) is a step taken by banking supervisory authorities to assess bank resilience to adverse economic situations so that they can maintain the stability of the financial system. Andersen & Juelsrud (2024) CET1 capital is the first tool to absorb losses and (Jorda et al. 2021) crisis costs depend on the banking sector's CET1 ratio.

Meuleman & Vennet (2020) stated that the first and foremost objective of macroprudential policy is to achieve and maintain financial sector stability by mitigating systemic risks arising from procyclicality, interconnection, and excessive cross-cutting factors in other financial sectors. One of the instruments in macroprudential policy is the loan to deposit ratio (LDR) which shows that banks depend on sources of loan funding and have few sources of liquidity, but if the LDR ratio value is low it indicates that the bank is very liquid and has more resources. Chinazzi & Fagiolo (2015) in terms of interconnectedness, the relationships among institutions in the financial system can be described as a network. Within this network, these institutions function as nodes and edges, indicating the existence of credit and lending relationships.

Monetary sectors also have an important role for the country's economy, one of which lies in the inflation variable, the role of inflation is included in an important category because if inflation in a country is high, it will cause an increase in the price of goods in the country, and also disrupt economic stability. If the price of goods and services increases due to inflation it can cause high poverty, even the unemployment rate will also increase. Therefore, interest rates play a role in controlling the inflation rate, the Central Bank will raise interest rates so that people will save/save their money in banks, and the money supply will decrease (Prihartini & Dana, 2018).

The problems in this study are very relevant to policy formulation, because various policies such as monetary, microprudential, fiscal, and structural that exist work with various instruments and try to realize objectives other than maintaining the stability of the financial system as a whole. Therefore, another policy is needed, namely macroprudential policy to achieve broad financial system stability. There is a gap between this study and previous studies, this study tries to contribute in testing the effect of factors that affect financial stability in the short and long term in Indonesia.

Literature Review

The previous research serves to enrich the discussion of research, and distinguish it from the research being conducted. This study included previous research related to the concept of macroprudential policy.

Lorencic & Festic (2022) common equity tier 1 ratio, loan-to-deposit ratio, non-deposit funding as percentage of total funding, leverage ratio, interconnectedness ratio, and coverage ratio for non-performing exposures) enhance financial stability, as measured by credit growth. Conducted a study to investigate whether macroprudential policy instruments can affect credit growth rates and financial stability. Using regression panel data, the results showed that the level of mismatch in maturity, non-deposit funding as a percentage of total funding, loan-to-value ratio and loan-to-deposit ratio showed a significant impact. Estimated at the rate of credit growth and financial stability. On the other hand, interbank lending as a percentage of total loans, leverage ratio, and solvency ratio did not show the expected impact.

Laux (2012) in 2008, investors began to focus on banks' tangible common equity ratios to measure bank health. Hannoun (2010) good bank level regulation will enhance the resilience of each financial institution, including by increasing the quantity and improving the quality of Tier 1 capital and introducing leverage ratios to complement risk-weighted measures.

Demirguc-Kunt et al., (2013) argue that higher quality forms of capital such as Tier 1 capital and common equity are tangible. Tier 1 capital is considered a more relevant definition of capital, especially in the sample of large banks.

However, according to Abou-El-Sood (2016) a high Tier 1 capital ratio should not be considered a significant indicator of financial health simply because it exceeds the capitalization benchmark. As US bank regulators implement Basel III, the final rule sets a new minimum threshold for Tier 1 capital ratios.

In contrast to Akbar & Wibowo (2021) research, conducted a study to see the effectiveness of macroprudential policies in mitigating systemic risk in Indonesia and found that the Macroprudential Liquidity Buffer (MLB) has a positive effect on credit growth and negatively affects financing for Islamic Banks. Conversely, the Countercyclical Capital Buffer (CCyB) shows the opposite result, where CCyB has a negative effect on credit growth, while in Islamic Banks, CCyB has a positive effect. Therefore, it is enough to conclude that MLB is able to reduce systemic risk for Islamic Banks, while CCyB is effective for Conventional Banks.

With a different approach, Bluwstein et al., (2022) created a new set of macroprudential policy-related instruments for the United States and estimated their effect on systemic risk, Using a high-frequency identification approach and found that perceived macroprudential policy tightening contributes to substantial reductions in systemic risk in the short term, with lasting effects for several months. The decline was largely due to the reaction of equity and bond markets.

Vučinić (2016) states that financial system stability is highly vulnerable to potential risks and shocks. Identifying, monitoring, and assessing systemic risks to financial stability is the goal of macroprudential policy. Therefore, effective macroprudential policymaking is crucial. To achieve this goal, building a strong institutional framework is crucial.

Research conducted by Agur & Demertzis (2019) modeled the transmission of monetary policy to bank risk, and its interaction with regulatory optimization issues. Regulators use capital regulation to influence financial stability, taking into account their impact on financial intermediation. Changes in the monetary policy rate tilt the entire regulatory trade-off. We

point out that regulators allow changes in interest rates to partially "through" the health of banks by not neutralizing banks' risk channels from monetary policy. Thus, monetary policy affects financial stability, even in the presence of macroprudential regulation.

Sui et al., (2022) examined the relationship between monetary and macroeconomic policy, macroprudential policy, and financial stability in China. Results show that expansionary monetary policy leads to output growth, tightening monetary policy leads to price stability, and tightening quantitative monetary policy or expanding price-based monetary policy is effective in maintaining financial stability. Central banks adopt expansionary monetary policy measures in response to stagnation or deflation. Meanwhile, expansionary quantitative monetary policy measures, or tight price-based monetary policy, are used to prevent financial turbulence. To maintain financial stability, monetary and macroprudential policies must also be combined.

Gaganis et al., (2020) & Kim & Mehrotra (2022) found that the impact of macroprudential policy on economic output is influenced by several factors, namely the exchange rate regime, financial openness, and bank corporate governance. However, when discussing the impact of macroprudential policy on financial risk, only a few experts analyze the factors between policy and risk. In related literature, Apergis et al., (2021) also find cross-country variations in the relationship between macroprudential policy and bank stability. While we investigate financial markets and cycles, they focus on the formation of regulatory bodies. By combining banks from both developed and developing countries, our sample allows us to evaluate the varying degrees of success of risk policies across countries. Our research is also related to Ely et al., (2021) who examine the impact of macroprudential policy on individual bank risk.

Andrieş et al., (2022) evaluates the effectiveness of macroprudential policies in controlling credit growth in both the short and long term using a sample of 414 banks in 61 countries. In the short run, macroprudential policies have a stabilizing effect and reduce credit growth, and that policies targeting borrowers are most effective in controlling credit growth. However, in the long run, tight macroprudential policies actually increase credit growth. In this case, country-level analysis shows that macroprudential policies targeting borrowers are most effective in controlling credit growth. These results suggest that macroprudential policy instruments are crucial for curbing excessive lending, particularly loan-based instruments.

Ma (2020) evaluates the effects of ideal macroprudential policies in a small open economy model where growth is endogenous. By adding endogenous growth, the model can identify the persistent impact of financial crises on output. Furthermore, trend and cyclical increases in consumption introduce new trade-offs in policy. Optimal macroprudential policies have a larger impact on growth and welfare because they are used in conjunction with growth subsidies that help mitigate the costs of financial crises, and other extensions with direct growth externalities. However, the impact of these policies is quantitatively small.

Zhou & Chen (2024) examine the impact of macroprudential policy on banking systemic risk using cross-country panel data in 65 countries. According to Klingelhöfer & Sun (2019), central banks play a crucial role in maintaining financial stability. The impact of macroprudential policies on financial stability is significantly influenced by the initial policy level. VAR results indicate that well-targeted macroprudential policies directly and sustainably affect credit, but do not statistically significantly affect output.

Feryel & Oussemma (2021) examined the impact of various monetary and macroprudential policy instruments on financial stability, using a sample of 48 countries, during the period 2000–2016 by considering macroprudential instruments through a binary approach. The results show the effectiveness of monetary and macroprudential policies in suppressing credit growth and also in stabilizing the financial system. However, macroprudential regulation is more effective than monetary policy, given the many objectives of monetary policy and short-term interest rate caps. Macroprudential variable instruments appear to be more effective for developing countries, given limited levels of openness and external funding. As for developed countries that have more open financial systems, with more diverse and sophisticated external financial sources, macroprudential tools appear to be less effective and difficult to monitor, used to control mortgage lending and foreign exchange lending. (Claessens, 2014) to reach and keep financial stability by reducing systemic risks caused by excessive procyclicality in the financial sector, interconnections, and other factors.

Methods

This study aims to examine how the impact of core capital tier 1 (CCT), loan-to-deposit ratio (LDR), leverage ratio (LR), interconnectedness ratio (INR) on financial stability in the short and long term in Indonesia. In this study, common equity tier 1 is part of core capital tier 1 and financial stability that measured from credit growth rate (CGR). The data in this study uses secondary data sourced from OJK related to commercial bank statistics performance with a time series of January 2012-December 2022. The research objectives will be tested using the method Vector Error Corection Model (VECM). The assumption that needs to be fulfilled is the same as VAR except that the stationary problem is different from VAR, VECM must be stationary in the first differentiation and all variables must have the same stationary that is differentiated in the first derivative, there are stages that must be passed in this VECM, which consists of stationary tests, determination of optimal lag, model stability tests, causality test, cointegration test, empirical test of VECM model, impluse response function, and variance descomposition. With the following research variables:

CGR = Credit Growth
CCT = Core Capital Tier 1, measured as core capital ratio to ATMR/Risk Weighted Assets
LDR = loans to deposits ratio, measured as total loans, divided by total deposits;
LR = leverage ratio, measured as total assets divided by total equity;
INR = interconnectedness ratio, measured as interbank loans divided by total bank assets

With the model of the equation as follows:

$$\Delta CGR_t = \alpha_0 + \sum_{i=1}^{m} \alpha_1 \ \Delta CGR_{t-1} + \sum_{i=1}^{m} \alpha_2 \ \Delta CCT_{t-1} + \sum_{i=1}^{m} \alpha_3 \ \Delta LDR_{t-1} + \sum_{i=1}^{m} \alpha_4 \ \Delta INR_{t-1} + \sum_{i=1}^{m} \alpha_5 \ \Delta LR_{t-1} + \alpha_6 ECT_{t-1} + \varepsilon_t$$

Findings

Table 1. **Augmented Dickey Fuller test (ADF) level**

Variable	Level	
	t-stats	(Prob. ADF)
CGR	-1.976.429	0.2969
LDR	-1.068.813	0.7267
INR	-1.624.717	0.4671
LR	-1.735.335	0.4111
CCT	-0.763527	0.8256

Source: Author's Calculation (2024)

In the table above shows the calculation results of the roof of the unit with the Augmented Dickey Fuller test at the level stage. ADF testing at the level stage shows the variables CGR, LDR, INR, LR, and CCT produce real levels of more than 5 percent, meaning that the data is said to be not stationary, hence requiring further ADF testing at the 1st Difference stage.

Table 2. **Augmented Dickey Fuller test (ADF) level**

Variable	1st Difference	
	t-stats	(Prob. ADF)
CGR	-8.420913	0.0000
LDR	-9.545779	0.0000
INR	-10.94123	0.0000
LR	-12.10970	0.0000
CCT	-10.87755	0.0000

Source: Author's Calculation (2024)

Based on the table above, the results of the unit root test show that there is a significant change in the probability value of ADF. The results of the unit root test at the 1st Difference stage state that all data is on variables. This study obtained stationary data results with the probability value of ADF below the real level of 5 percent.

Carrying out a Granger causality test requires a lag length to be used, therefore determining the optimum lag is very necessary. Rosadi (2013) explains that the optimum lag used is too short, so it cannot explain a comprehensive estimation model, whereas if the lag included is too long, there are concerns about getting inefficient estimation results, especially if too little data is used. Determining the optimum lag can use several criteria, including LR, FPE, AIC, SC and HQ with the smallest value. The following are the results of the optimum lag test in this research.

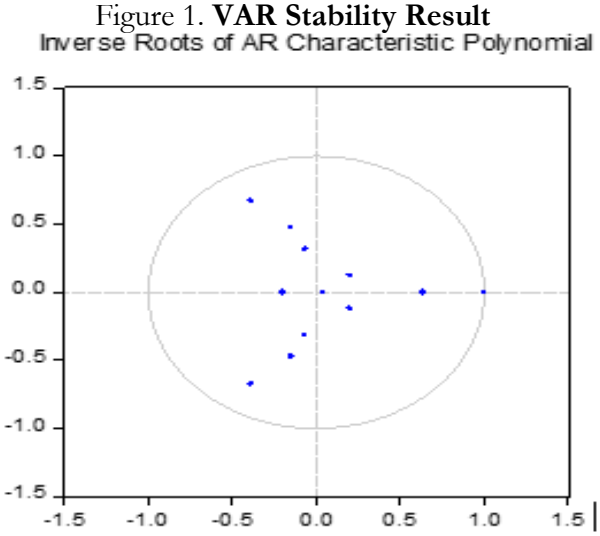
Tabel 3. **Optimum Lag test Result**

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-2.215.574	NA	2.58e-05	3.624919	3.738052	3.670879
1	440.6528	1260.848	9.64e-10*	-6.570445*	-5.891650*	-6.294687*
2	462.8756	40.53440	1.01e-09	-6.526.010	-5.281.552	-6.020.453
3	486.1345	40.56350	1.04e-09	-6.498.152	-4.688.032	-5.762.796
4	494.6645	14.19384	1.37e-09	-6.234.632	-3.858.848	-5.269.476
5	507.3419	20.08103	1.69e-09	-6.037.470	-3.096.024	-4.842.516
6	540.8466	50.39103	1.51e-09	-6.173.545	-2.666.436	-4.748.792
7	577.5469	52.26125*	1.29e-09	-6.360.750	-2.287.978	-4.706.198

Source: Author's Calculation (2024)

Based on the table above, it can be seen that the optimum lag shows the 1st lag. This shows the information criteria of Akaike Information Crition (AIC), Schwarz Information Crition (SIC), and Hannan-Quin Crition (HQC) which shows the selected hose candidate is the 1st lag.

Figure 1. **VAR Stability Result**



Source: Author's Calculation (2024)

The results of the model stability test show that the value of the modules obtained is < 1. It can be concluded that the model stability test is stable and has met the criteria. So that the model can be said to be valid and can do modeling on impluse response and variance decomposition.

The cointegration test was carried out to find out whether there was a long-term relationship between the research variables. Gujarati (2011) states that a research variable has a long-term relationship if the variable is cointegrated, whereas if the variables in the research do not have a long-term relationship then it can be ensured that the variable is not cointegrated.

Table 4. **Cointegration Test Result**

Hypothesized No. Of CE(s)	**Eigenvalue**	**Trace Statistics**	**0.05 Critical Value**
None*	0.309065	111.3974	88.80380
At most 1*	0.250740	64.44424	63.87610
At most 2	0.104515	27.78329	42.91525
At most 3	0.065305	13.76375	25.87211
At most 4	0.040018	5.186758	12.51798

Source: Author's Calculation, 2024

Based on the table above, it can be seen that the the statistical trace value and maximum eigenvalue at r = 0 are greater than the critical value with significant levels of 1% and 5%. And from the table above shows there are two cointegrations at the level of 1 percent and 5 percent. Thus, the results of cointegration indicate that there is a movement between CGR, CCT, LDR, INR, and LR has a relationship of balance and equilibrium and similarity of movement in the long run.

Table 5. **Granger Causality test Result**

Null Hypothesis:	F-Stats	Prob.
LDR does not Granger Cause CGR	**3.14189**	**0.0466**
CGR does not Granger Cause LDR	0.77848	0.4613
LR does not Granger Cause CGR	2.86159	0.0609
CGR does not Granger Cause LR	**3.84122**	**0.0240**
CCT does not Granger Cause CGR	**7.51869**	**0.0008**
CGR does not Granger Cause CCT	**4.80525**	**0.0098**
INR does not Granger Cause LDR	**5.05089**	**0.0078**
LDR does not Granger Cause INR	1.17511	0.3122
LR does not Granger Cause LDR	**4.12448**	**0.0184**
LDR does not Granger Cause LR	0.48933	0.6142
CCT does not Granger Cause LR	**4.17001**	**0.0177**
LR does not Granger Cause CCT	0.88086	0.4170

Source: Author's Calculation, 2024

From the results of the causality test above, it shows a significant relationship between LDR and CGR, this can be seen in the probability value of 0.046 below 0.05. Conversely, the CGR variable does not have a causality relationship with LDR because the probability value is above 0.05, meaning that there is a one-way relationship between the LDR and CGR variables. Between LR variables and CGR has no significant relationship, this can be seen in the probability value below 0.05. And, the CGR variable has a causality relationship with LR because the probability value is 0.024 below 0.05, meaning that there is a one-way relationship between the LR and CGR variables. A significant relationship between the CCT variable and the probability value of 0.00 below 0.05. And, the CGR variable has a causality relationship with CCT, the probability value is 0.00 below 0.05, meaning that there is a two-way relationship between the CCT and CGR variables. A significant relationship between INR and LDR, the probability value of 0.00 below 0.05. Conversely, the LDR variable does not have a causality relationship with INR because the probability value is above 0.05, meaning that there is a one-way relationship between the LDR and INR variables. The results shows a significant relationship between LR and LDR, this can be seen in the probability value of 0.01 below 0.05. conversely, the LDR variable does not have a causality relationship with LR because the probability value is above 0.05, meaning that there is a one-way relationship between the LR and LDR variables. The results shows a significant relationship between CCT and LR, this can be seen in the probability value of 0.01 below 0.05. Conversely, the variable LR has no causality relationship with CCT because the probability value is below 0.05, meaning that there is only a one-way relationship between LR and CCT.

Table 6. **Short Term Output**

Variables	Coefficient	T-stats
CointEq1	-1.314799	-6.31380
D(LDR(-1)	0.163305	1.30482
D(LDR(-2)	**0.378727**	**3.06196**
D(INR(-1)	2.918473	0.83381
D(INR(-2)	-3.266929	-0.92775
D(LR(-1)	-1.830039	-0.86941
D(LR(-2)	6.842482	0.32031
D(CCT(-1)	-0.381337	-1.39057
D(CCT(-2)	**-0.614849**	**-2.32235**
c	0.036853	0.41436

Source: Author's Calculation, 2024

From the short-term VECM estimation results table above, an analysis can be made of the macroprudential relationship with CCT, LDR, INR, and LR indicators with financial system stability with CGR indicators. The estimation results show that variables that have a significant relationship to financial system stability in the short term are LDR and CCT variables. The significant relationship showed by the t-count is greater than the t-table. From the results of the short-term VECM estimation above, an equation model can be formed as follows:

$$CGR = -333348\ CGR(-2) + 0.378727\ LDR(-2) + -0.614849\ CCT(-2)$$

LDR has a significant positive relationship with CGR. This shows that if there is a change in the increase in the LDR, it will increase the CGR in the short-term. While, CCT has a significant negative relationship with CGR.

Table 7. **Long-Term Output**

Variables	Coefficient	t-Stats
D(LDR(-1)	**0.033142**	**2.23599**
D(INR(-1)	0.304682	0.53109
D(LR(-1)	2.012056	0.17138
D(CCT(-1)	**0.089205**	**2.67370**

Source: Author's Calculation, 2024

The estimation results show that variables that have a significant relationship with CGR in the long-term are LDR and CCT. The significant relationship showed by the t-count is greater than the t-table. There is a positive relationship between LDR and CGR. As for the CCT variable, there is a positive relationship with CGR.

$$CGR = 0.033142\ LDR(-1) + 0.089205\ CCT(-1)$$

This test was carried out to find out how much influence the variables contribute to other variables Winarno (2013). The Variance Decomposition test will show the importance of each variable in the VAR/VECM model due to the presence of a shock or how strong a variable's role is on other variables.

Table 8. **Variance Decomposition Test Results**

Period	S.E.	CGR	LDR	INR	LR	CCT
1	0.979174	100.0000	0.000000	0.000000	0.000000	0.000000
2	1.009011	96.22283	0.459934	0.317390	0.390681	2.609165
3	1.076506	85.27098	5.744442	0.892552	1.296396	6.795631
4	1.138593	86.73121	5.167172	0.823331	1.203454	6.074831
5	1.148764	86.41461	5.077903	0.839611	1.330882	6.336993
6	1.158409	85.46211	5.316728	0.940270	1.403177	6.877711
7	1.168232	85.53908	5.382522	0.933565	1.380833	6.763998
8	1.172630	85.40801	5.416110	0.937676	1.425066	6.813139
9	1.175267	85.26024	5.393588	0.952236	1.427866	6.966070
10	1.177198	85.15783	5.519459	0.952869	1.423678	6.946164

Source: Author's Calculation, 2024

Based on the results of variance decomposition analysis in the table above, it shows that the shock that occurs in CGR to CGR itself. The largest contribution made by CGR to CGR itself was in the first period with a percentage of 100 percent. As for the last period, CGR's contribution to CGR itself was 85.15 percent, and the rest was influenced by LDR variables of 5.51 percent, INR of 0.95 percent, LR of 1.42 percent, and CCT of 6.94 percent

Based on the results of this research analysis shows a significant relationship in short-term and long-term between LDR and CGR. This is similar to the research conducted by (Ha, 2020). namely the positive relationship between LDR and CGR. This research is also in line with what was conducted by (Lorencic & Festic, 2022) who said that there is a positive relationship between LDR and CGR because if LDR rises, it means that banks channel credit to customers through deposits, meaning credit growth will also increase.

Based on the results of the analysis shows that there is a significant negative relationship in the short term and a significant positive relationship in the long term between CCT and CGR. This is also in line with research conducted by Taskinsoy (2018) which states that the existence of a negative relationship between CCT and CGR as capital rates deteriorate further under two adverse scenarios, this should encourage central bank and individual banks to revisit their credit risk parameters and make them more conservative. While in long-term testing is inversely proportional to short-term, in the long term there is a significant positive relationship between CCT and CGR. This is also similar to research conducted by (De Marco et al., 2021). which states that the tier 1 capital ratio has a positive effect on credit growth, meaning that if capital increases, it will cause credit growth to increase as well. Ayadi (2019) tier 1 capital ratio reflects a bank's loss-absorbing capacity under the Basel capital rules. For a given level of risk, having more capital can in principle imply greater stability.

Conclusion

This research aims to examine the impact of core capital tier 1 (CCT), loan to deposit ratio (LDR), leverage ratio (LR), interconnection ratio (INR) and on financial stability that measured from credit growth rate. The estimation results show that variables that have a significant relationship to financial system stability in the short term are LDR and CCT variables. LDR has a significant positive relationship with CGR. It means that banks channel credit to customers through deposits, credit growth will also increase. While, CCT has a significant negative relationship with CGR. Its encourage central bank and individual banks revisit their credit risk parameters and make them more conservative. In long term results, there is a positive relationship between LDR and CGR. As for the CCT variable, there is a positive relationship with CGR. For a given level of risk, having more capital can in principle imply greater stability. Core Capital Tier 1 assess bank resilience to adverse economic situations and maintain the stability of the financial system.

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