



THE ROLE OF SHARIA AND CONVENTIONAL BANKING IN PUBLIC WELFARE IN NORTH SUMATRA

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Abstract

Financial institutions have a very important role in a country's economy which allows millions of funds (surplus units) to be collected and transferred to various other segments of society (deficit units) which can be used as investment capital. The role of credit or financing in investment and increasing income/welfare, and based on the experience of the economic crisis and global financial crisis which were also caused by banking credit. This article aims to review the ability of conventional banking and Sharia banking to provide long-term prosperity in North Sumatra by looking at inflation, exchange rates, money supply, Sharia banking financing, and current account loans, toward North Sumatra's Gross Regional Domestic Product and the period when it reaches balance. Mixed methods research combines quantitative methods and qualitative methods to be used together in this research. The research population is all data published in the central OJK and BPS (North Sumatra Province Central Statistics Agency), and the sample taken is data that includes all variables during the 2015-2020 period. Analysis of the VAR (Vector Autoregression) model as an alternative model to multiple equations to minimize the theoretical approach and make economic phenomena better. The result is that there are several negative influence measurement results on the inflation variable and current account loan credit. Meanwhile, the variables of money supply, exchange rate, sharia banking financing have a positive and significant positive influence on North Sumatra's GRDP. So, the banking VECM test has a role in increasing North Sumatra's GRDP in both the short and long term.

Keywords: Sharia Banking, Conventional Banking, Welfare, North Sumatra

INTRODUCTION

Welfare is a symbol of prosperity/progress and is the goal of economic activity. Welfare in Islamic and Conventional Banking economics is generally measured by conducting a comprehensive evaluation of all aspects of welfare, namely employment, poverty and quality of life as indicated by an increase in national income.(Khan, 1996). Muhammad Akram Khan explains that prosperity (falah) is obtained when survival, freedom of desire as well as strength and self-esteem with several aspects are fulfilled both at the micro and macro level.

According to Ibn Khaldun, to create prosperity, the state must carry out development by paying attention to several interconnected components so as to create a circle which M. Umer Chapra called the cycle of justice or cycle of equity (Chapra, 2001) (Khaldun, 1967). An indication to show economic prosperity is an increase in national income (GDP) (Mankiw, 2000) or continuous state income in a form that permits it (appropriate levels) and by progress (Qal'ahji, 1991).

One of the economic sectors that supports increasing GDP is financial/banking institutions through savings/financing mechanisms. Theoretically, financial institutions have a very important role in a country's economy which allows millions of funds (surplus units) to be collected and transferred to various other segments of society (deficit units) which can be used as investment capital. With savings and financing from the banking sector, the level of investment will be greater, thereby increasing community and state income (Katmas & Indarningsih, 2022).

In conventional banking, the transfer of funds from surplus units to deficit units is carried out through credit with interest as a return. The interest rate is a measure of the income earned by capital owners, so it is called savings interest or investment interest. For borrowers/creditors, the interest rate is Sharia and Conventional Banking, the capital that the company must spend to use funds from capital owners, so it is called loan interest. Therefore, the interest rate is actually the price that people who need money are willing to pay. In theory, rising interest rates will encourage people to save and be reluctant to invest in the real sector. The increase in interest rates will also be borne by investors, namely in the form of increases in Sharia Banking and Conventional interest rates for companies. People do not want to take

the risk of investing in Sharia and Conventional Banking with high costs, as a result investment will not develop.

In sharia banking, the transfer of funds from surplus units to deficit units is carried out through financing with profit-loss sharing (Toha et al., 2019). Profit-loss sharing means that profits and losses that may arise from financing are shared. In profit sharing there is no fixed and certain return like interest, the amount of profit and loss sharing is based on productivity so that the price of capital is determined jointly with the role of entrepreneurship. In profit sharing financing, what is agreed is the proportion of profit sharing (profit sharing ratio) in terms of the percentage of possible real productivity results. The nominal value for the profits received can only be known after the results of the use of the funds actually exist (ex post phenomenon, not ex ante). In theory, the relationship between profit sharing and financing is positive, meaning that the higher the profit sharing given to customers, the greater the amount of savings/financing.

Table 1
Data on Inflation, Exchange Rates, Money Supply, Conventional Banking Credit, Sharia Banking Financing, Gross Regional Domestic Product and Level of Welfare in North Sumatra from 2015 – 2020

Year	Inflation (%)	Exchange (Rp.)	JUB (Rp. Billion)	CREDITPK (Rp. Billion)	PENGP (Rp. Billion)	GRDP (Rp. Billion)	TSEJH (Average Expenditures per Capital a Month)
2015	3.24	13,795.00	4,546,743.03	179,227	8,271	440,955.85	775,189
2016	6.34	13,436.00	5,004,976.79	188,851	9,362	463,775.46	853,756
2017	3.20	13,548.00	5,419,165.05	204,997	10,091	487,531.23	909.818
2018	1.23	14,481.00	5,760,046.20	219,586	11,216	512,765.63	1,001,709
2019	2.33	13,901.00	6,136,551.81	227,481	12,132	539,513.85	1,063,964
2020	1.96	14,105.00	6,900,049.49	217,745	12,954	533,746.36	1,124,253

Inflation is a macroeconomic variable that also influences GDP. Inflation describes the decline in the value of the rupiah which is characterized by an increase in the prices of necessities on the market. Increasing inflation can reduce people's purchasing power,

because the prices of necessities increase, while people's income remains constant. Uncontrolled inflation will reduce economic growth and investment activities. This condition will directly influence the behavior of investors in making investment decisions in financial institutions and the real sector.

Based on the experience of the Indonesian crisis in 1997-1998 and the global financial crisis in 2007-2008, the contribution of credit/financing and inflation to Indonesia's level of economic welfare is quite significant. The 1997 economic crisis, for example, started with many bank loans going bad. The crisis created an inflation rate of 77.6% so that the prices of goods that people needed were very high and the level of people's welfare decreased. Meanwhile the global financial crisis also started with housing loans traded on the derivative market (subprime mortgage). The global financial crisis caused European countries to experience huge losses and debt burdens.

The global financial crisis can be divided into two crises, first the crisis in the capital market and second the crisis in the money market. Capital and money markets open up opportunities for transactions with a high level of speculation. Both use interest as an instrument and separate the monetary sector from the real sector. Agustianto, *Derivative Transactions from a Sharia Perspective*, Henry Poulson (2008), US Minister of Finance. In his report as Chair of the President's Working Group (PWG) on Financial Markets, he firmly stated that the main causes of the subprime mortgage crisis in the United States were: (1) The decline in the quality/standard of guarantee for subprime mortgages; (2) Significant erosion of market discipline by parties involved in the securitization process, including originators, underwriters, credit rating agencies and global investors; (3) Failure to provide and obtain adequate risk information (risk disclosures); (4) Significant flaws in credit rating companies, especially those related to the assessment of subprime residential mortgage backed securities (RMBS), collateralized debt obligations (CDOs) linked to RMBS, asset backed securities (ABS), and others; (5) Weaknesses in risk management at a number of large financial institutions in the US and Europe; and (6) Regulatory weaknesses.

Based on the role of credit/financing in investment and increasing income/welfare, as well as based on the experience of the economic crisis and global financial crisis which was also caused by banking credit, which of the two banks (Shariah and conventional banking) is

quicker to overcome the crisis. This article will describe the ability of conventional banking and sharia banking to provide prosperity in the long term.

This research provides a contribution in the form of quantitative analysis results using a descriptive approach and inferential statistics to all banking institutions, both sharia banking institutions and conventional banking institutions, in carrying out their roles in activities related to financial services and the empowerment models implemented. Likewise, with BI's role in carrying out macro-Prudential Financial inclusion in controlling the exchange rate, money supply and also financing carried out by central bank members. So that the level of community welfare in North Sumatra can be accelerated.

REVIEW OF LITERATURE

Economic Prosperity

There are two terms that describe economic development, namely economic growth (economic growth) and economic development (economic growth). The explanation for these two terms is that economic growth is used to describe the level of economic development of a country as measured by the increase in real national income. Meanwhile, economic development does not only describe the development of real national income, but also the modernization of economic activities, for example changes in the traditional agricultural sector, acceleration of economic growth and equal distribution of income (Harahap, 2018).

The theory of economic development developed by Walt W. Rostow, an American economist, suggests that the transition from underdevelopment to a developed economy can be described in a series of steps or stages that all countries must go through (Smith, 2006).

The aim of economic development is to achieve social welfare. Economic well-being can be measured from the value of the Gross Domestic Product (GDP) produced in a country's economy. According to Todaro, GDP is the total final output of goods and services produced by a country's economy, within that country's territory, by residents and non-residents, regardless of allocation whether domestic or foreign property (Smith, 2006). The greater the GDP value, the greater a country's ability to improve the lives of its people.

Conventional and Sharia Banking

Based on Law no. 21 of 2008 concerning sharia banking states that conventional banks are banks that carry out their business activities conventionally and based on their type consist of Conventional Commercial Banks and Rural Credit Banks. Conventional banks carry out fund distribution activities in the form of providing credit. According to Law no. 10 of 1998 concerning banking states that credit is the provision of money or bills that can be equated with it, based on an agreement or loan agreement between the bank and another party which requires the borrower to pay off the debt after a certain period of time with interest. Credit provided by banking institutions must be based on trust, so that providing credit is a gift of trust. Meanwhile, sharia banking according to Law No. 21 of 2008 are banks that carry out their business activities based on sharia principles and according to their type consist of Sharia Commercial Banks and Sharia People’s Financing Banks. Sharia banks carry out fund distribution activities in the form of providing financing .

The following are the differences between the interest system and the profit-sharing system:

Table 2
Difference between the Interest System and the Profit Sharing System

Information	Interest System	Profit-sharing system
Profit/interest sharing	Predetermined	After trying, after there is profit
Sharing portion	Interest, the value of the rupiah	Agree on the proportion of profit sharing for each party, for example 50:50 or 40:60 or 35:65
Loss	borne by the customer only	Covered by both parties, customer and institution
Counting	From the funds loaned, fixed	The profit that will be obtained is not necessarily large
Project/enterprise focus point	The amount of interest that must be paid by the customer/certainly received by the bank	The success of the project/business is a common concern: Customers and Institutions
Size	Definite: (%) times the loan amount that is definitely known	Proportion (%) times unknown profit amount = unknown
Source: Muhammad, 2004, p. 4		

RESEARCH METHOD

This research approach was carried out with a mixed research approach. Mixed methods research is a research approach involving quantitative and qualitative data, combining two forms of data, and using different designs, which can involve philosophical assumptions and theoretical frameworks. The core assumption of this form of research is a combination of qualitative and quantitative approaches which provide a more complete understanding than just one approach in formulating research problems (Creswell, 1994). The population in this study is all data published in the central OJK and BPS (North Sumatra Province Central Statistics Agency), and the sample taken is data that includes all variables during the 2015-2020 period.

Data collection techniques in this research were carried out using documentation study techniques and interview techniques. Documentation techniques are a way of collecting data obtained from documents required in research. Meanwhile, the interview technique will be carried out by means of in-depth interviews based on the results of the quantitative data that has been carried out. Using VAR (Vactor Autoregression) model analysis techniques. The VAR model is used as an alternative model to multiple equations to minimize the theoretical approach and take economic phenomena better. The first step taken in the VAR analysis is to transform the data into natural logarithm (ln) form so that the results obtained are consistent and valid, but if the data is in the form of percentages then there is no need to carry out transformation, because some of the data in this study is in nominal form, so Transformations can be carried out in the form of natural logarithms (ln) first (Ascarya, n.d.).

If the data is stationary at level, then an in-level VAR model can be done. However, if the data is stationary at the first level (First Difference) or stationary at the second level (Second Difference), then you can do a VAR in difference or VECM model if there is cointegration (Prawoto, n.d.). VECM (Vector Error Correction Model) is a derivative of VAR. The use of VECM in analyzing data can provide estimates of short-term and long-term relationships between variables (Mulyono, 2019). Then the Data Stationarity Test, VAR Model Static and Causality Test, Optimal Lag Length Test, Granger Causality Test, Cointegration Test, and Vector Error Correction Model (VECM) Test were carried out.

RESULTS AND DISCUSSION

Data Stationarity Test Results

The data stationarity test on the variables tested in this study used the unit root test method with the Augmented Dickey-Fuller (ADF) test type with a significance level of 5%. The results of data stability testing for the variables studied are as follows:

Table 3
Stationarity Test Results Test for Unit Root in Level Augmented Dickey-Fuller (ADF) Test Statistics

No.	Research Variable	ADF t-Statistic	Critical Value Test		Prob*	Information
			Level	Value		
1	GRDP	- 2.655585	1% level	-3.485115	0.0849	Not Stationary
			5% level	-2.885450		
			10% levels	-2.579598		
2	Inflation	- 8.566760	1% level	-3.481217	0.0000	Stationary
			5% level	-2.883753		
			10% levels	-2.578694		
3	Exchange Rate	- 1.005785	1% level	-3.480818	0.7500	Not Stationary
			5% level	-2.883579		
			10% levels	-2.578601		
4	JUB	0.365361	1% level	-3.482035	0.9807	Not Stationary
			5% level	-2.884109		
			10% levels	-2.578884		
5	BEPPS	- 2.186664	1% level	-3.481217	0.2122	Not Stationary
			5% level	-2.883753		
			10% levels	-2.578694		

6	CREDITPK	- 6.060618	1% level	-3.481623	0.0000	Stationary
			5% level	-2.883930		
			10% levels	-2.578788		
7	TSEJH	0.052894	1% level	-3.486064	0.9607	Not Stationary
			5% level	-2.885863		
			10% levels	-2.579818		

Source: data processed with Eviews 9

The test results with the test for unit root in level in table 1 above can be seen that there are 2 (two) research variables that are stationary at level. Meanwhile, the other 5 (five) research variables are not stationary at level, which can be proven by looking at the Probability value of Sharia and Conventional Banking in Sharia and Conventional Banking, which is small than 0.05 and the value of the ADF t-statistic for Sharia and Conventional Banking is greater than the critical value or real level. 5%. Next, to get stationary data for all research variables, the next step is to test the stationarity of the data with a test for unit root in 1st Difference. The test results are as follows:

Table 4
Stationarity Test Results Test for Unit Root in 1st Difference Augmented Dickey-Fuller (ADF) Test Statistics

No.	Research Variable	ADF t-Statistics	Critical Value Test		Prob*	Information
			Level	Value		
1	GRDP	- 0.604292	1% level	-	0.9767	Not Stationary
			5% level	3.448348		
			10% levels	3.149326		
2	Inflation	- 8.735399	1% level	-	0.0000	Stationary
			5% level	3.446168		
			10% levels	3.148049		

3	Exchange Rate	- 12.11762	1% level	- 4.030157	0.0000	Stationary
			5% level	- 3.444756		
			10% levels	- 3.147221		
4	JUB	- 0.977872	1% level	- 4.031309	0.9425	Not Stationary
			5% level	- 3.445308		
			10% levels	- 3.147545		
5	BEPPS	- 19.05414	1% level	- 4.030157	0.0000	Stationary
			5% level	- 3.444756		
			10% levels	- 3.147221		
6	CREDITPK	- 11.11754	1% level	- 4.030729	0.0000	Stationary
			5% level	- 3.445030		
			10% levels	- 3.147382		
7	TSEJH	- 2.494545	1% level	- 4.036983	0.3304	Not Stationary
			5% level	- 3.448021		
			10% levels	- 3.149135		

Source: data processed with Eviews 9

The test results with the test for unit root in 1st Difference in table 2 above can be seen that from the test results of the 7 (seven) research variables there are 3 (three) variables that are not stationary at the first level or first difference. So, the next step is to test the stationarity of the data with a test for unit root in 2nd Difference. The test results are as follows:

Table 5
Stationarity Test Results Test for Unit Root In 2nd Difference Augmented Dickey-Fuller (ADF) Test Statistics

No.	Research variable	ADF t-Statistics	Critical Value Test		Prob*	Information
			Level	Value		

1	GRDP	- 8.882503	1% level	- 4.037668	0.0000	Stationary
			5% level	- 3.448348		
			10% levels	- 3.149326		
2	Inflation	- 7.608719	1% level	- 4.038365	0.0000	Stationary
			5% level	- 3.448681		
			10% levels	- 3.149521		
3	Exchange Rate	-9.38734	1% level	- 4.033108	0.0000	Stationary
			5% level	- 3.446168		
			10% levels	- 3.148049		
4	JUB	- 12.78244	1% level	- 4.031309	0.0000	Stationary
			5% level	- 3.445308		
			10% levels	- 3.147545		
5	BEPPS	- 12.50513	1% level	- 4.032498	0.0000	Stationary
			5% level	- 3.445877		
			10% levels	- 3.147878		
6	CREDITPK	- 9.190527	1% level	- 4.033727	0.0000	Stationary
			5% level	- 3.446464		
			10% levels	- 3.148223		
7	TSEJH	- 19.06557	1% level	- 4.036983	0.0000	Stationary
			5% level	- 3.448021		
			10% levels	- 3.149135		

Source: data processed with Eviews 9

The test results with the test for unit root in 2nd Difference in table 3 above can be seen that the test results for the 7 (seven) research variables are stationary, as evidenced by all values of Sharia Banking Probability and Conventionality of Sharia and Conventional Banking being less than 0.05. Apart from that, the ADF t-statistic value for Sharia and Conventional Banking is greater than the critical value or real level of 5%, so the data is stationary at the 2nd Difference level.

VAR Model Stability Test Results

After testing the stationarity of the data, the next step is to test the stability of the Sharia Banking and Conventionality of the VAR model. The stability test of the VAR model on the GRDP (Y) model was carried out using graphs and root of characteristic polynomial tables, with an optimal lag value of 1-6. The following are the results of the VAR model stability test:

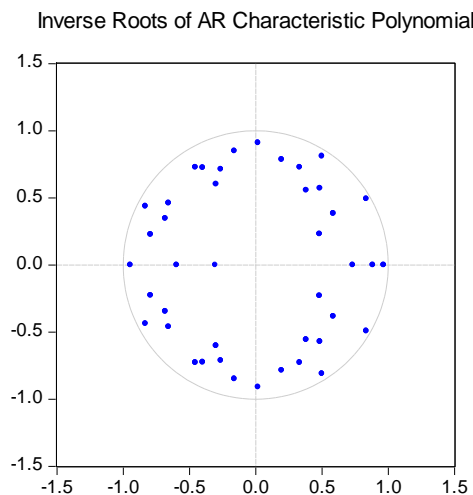


Figure 1
Var Model Stability Test Results
Source: data processed with Eviews 9

The results of testing the stability of the VAR model with the root of characteristic polynomial graph in Figure 1 above show that all the points are spread within the image circle or unit circle, which means that the VAR model formed is stable. Meanwhile, the results of the root of characteristic polynomial with the table, which can be seen in table 4 below, show that the overall modulus value for Sharia and Conventional Banking is less than 1 (one), which means that the VAR model formed is also stable. In this way, the Impulse Response Function and Variance Decomposition tests can be declared valid.

Optimal Lag Length Test Results

Determining the lag length to be used in the VAR model can be seen in the VAR Lag Order Selection Criteria test results, which provide criteria that can be used to determine the most optimal number of Lags. The results of testing the optimal lag length are as follows:

Table 6
Optimal Lag Length Test Results

Lag	LogL	L.R	FPE	AIC	S.C	HQ
0	2439.072	NA	2.97e-26	-38.91316	-38.75477	-38.84881
1	2581.464	266.5576	6.68e-27	-40.40743	-39.14034*	-39.89268*
2	2639.063	101.3739	5.86e-27	-40.54501	-38.16923	-39.57985
3	2712,888	121.6639	4.01e-27	-40.94221	-37.45773	-39.52665
4	2753.288	62.05412	4.76e-27	-40.80461	-36.21143	-38.93864
5	2798.056	63.74951	5.39e-27	-40.73690	-35.03502	-38.42052
6	2872.106	97.15324*	3.94e-27*	-41.13769*	-34.32711	-38.37091

Source: data processed with Eviews 9

The results of testing the optimal lag VAR Lag Order Selection Criteria in table 5 above show that the lag is the shortest based on the criteria Schwarz information criterion (SC) and The Hannan-Quin Criterion (HQ) is optimal at lag 1, which can be seen by the Sharia and Conventional Banking signs (*).

Granger Causality Test Results

The Granger causality test with the pairwise Granger causality test was carried out to determine the relationship between variables in the study as a group and used lag 1. The use of lag 1 was based on testing the optimal lag length.

Testing Grager causality with the pairwise Granger causality test can differentiate between H_0 being accepted or H_0 being rejected. Based on the data produced in the pairwise Granger causality test table, with the condition that H_0 is accepted if the value of Sharia Banking Probability and Conventuality is $> 5\%$ (0.05), which means there is no causality between the variables in the study. Conversely, if the Probability value is $< 5\%$ (0.05) then H_0 is rejected, which means there is causality between the variables in the research.

The results of the Grager causality test with the pairwise Granger causality test in table 6 above show that of the 42 (forty-two) causality statements there are 22 (twenty-two)

causality statements that have a probability value of $> 5\%$ (0.05), which means there is no causality between variables. Meanwhile, 20 (twenty) causality statements have a probability value of $\leq 5\%$ (0.05), which means there is causality between the variables in the research. The statement of the Granger causality relationship is as follows: 1) There is a one-way causal relationship between INFLATION and GRDP; 2) There is a one-way causal relationship between GRDP and KURS; 3) There is a one-way causal relationship between GRDP and JUB; 4) There is a one-way causal relationship between GRDP and PENGPS; 5) There is a one-way causal relationship between KREDITPK and GRDP; 6) There is a one-way causal relationship between GRDP and TSEJH; 7) There is a one-way causal relationship between INFLATION and CREDITPK; 8) There is a one-way causal relationship between INFLATION and TSEJH; 9) There is a two-way causality relationship or feedback from JUB to the KURS and vice versa, the KURS to JUB; 10) There is a two-way causality relationship or feedback of PENGPS to the KURS and vice versa, the KURS to PemPS; 11) There is a one-way causal relationship between KREDITPK and EXCHANGE; 12) There is a one-way causal relationship between JUB and PENGPS; 13) There is a one-way causal relationship between KREDITPK and JUB; 14) There is a two-way causality relationship or feedback from TSEJH to JUB and vice versa, JUB to TSEJH; 15) There is a one-way causal relationship between KREDITPK and PENGPS; 16) There is a one-way causality relationship between TSEJH and PENGPS. There is a one-way causality relationship between KREDITPK and TSEJH.

Based on the statement of causality, the relationship patterns can be distinguished as follows: 1) One-way causality from X to Y, namely there is a causal relationship between INFLATION and GRDP, a causal relationship between KREDITPK and GRDP; 2) One-way causality from Y to; 3) Feedback causality, that is, there is a causal relationship between JUB and KURS and vice versa, KURS to JUB, a causal relationship between Pemps and KURS and vice versa, KURS to Pempps, a causal relationship between TSEJH and JUB and vice versa, JUB to TSEJH; 4) There is no interdependent causality relationship.

Cointegration Test Results

The cointegration test was carried out using the Johansen's Cointegration Test method through two statistical tests, namely the tract test and maximum eigenvalue statistics

to see whether there was a cointegration relationship in the variables studied. The results of the cointegration test will determine the analysis method that will be used, VAR first difference or VECM.

Based on the results of the cointegration test, it is explained that if the trace statistic is greater ($>$) than the critical value, then the first H_0 is accepted, so the previous row shows the number of cointegration equations. Table 7 above shows that the first H_0 acceptance is in the fifth row (trace statistic $<$ critical value 5%), which means there are only 4 cointegration equations in the Trace test results based on the Sharia and Conventional Banking signs (*) which are in None, At most 1, At most 2 and At most 3. Furthermore, the maximum eigenvalue of the first H_0 acceptance is found in the first, second, third and fourth rows (max-eigen statistics $>$ critical value 5%), which means there are only 4 cointegration equations in maximum eigenvalue test results based on the Sharia and Conventional Banking signs (*) which are None, At most 1, At most 2 and At most 3.

The results of the cointegration test with trace statistics and max-eigen statistics at lag 1 show that for each equation there are only four cointegration ranks at the 5% real level with an asterisk (*). Thus, the equation must be solved using the Vector Error Correction Model (VECM) method.

Vector Error Correction Model (VECM)

The estimation results from VECM can be stated as significant for Sharia and Conventional Banking, the t-statistical value $> \pm$ t-table. In this case, the t-table for the amount of data or observations is 130 (VECM attachment) and 7 variables with a significance level of 5% (0.05) and $dk = n - k$, so $dk = 130 - 7 = 123$ then we get the t-table of 1.98. VECM testing can show data with long-term and short-term trends. From the VECM estimation results, you can analyse long-term and short-term equations. The results of long-term VECM testing are as follows:

Table 10
Long Term VECM Estimation Results for Variables Affecting GRDP

Endogenous Variables	Exogenous Variables	Coefficient	S.E	T-Statistics
LNPDRB(-1)	C	3.317272		
	INFLATION(-1)	-17.09617	(1.98452)	[-8.61474]

LNKURS(-1)	0.667282	(0.23229)	[2.87268]
LNJUB(-1)	0.732842	(0.53930)	[1.35887]
LNPEMBPS(-1)	0.659022	(0.15188)	[4.33898]
LNKREDITPK(-1)	-1.796024	(0.43160)	[-4.16132]
LNTSEJH(-1)	-1.018253	(0.33305)	[-3.05731]

Source: data processed with Eviews 9

Based on the table above, it can show the influence of variables from the long-term equation, including: 1) The INFLATION variable has a negative effect on North Sumatra's GRDP with a statistical value of -8.61474, where from the long-term equation it can be seen that a 1% change in INFLATION will reduce GRDP by 17.10 billion; 2) The KURS variable has a positive and significant effect on the GRDP of North Sumatra with statistical values 2.87268, where from the long-term equation it can be seen that a change of 1 Rupiah in the KURS will increase GRDP by 0.67Billion; 3) The PENGPS variable has a positive and significant effect on the GRDP of North Sumatra with statistical values 4.33898, where from the long-term equation it can be seen that a change of 1 billion in PemPS will increase GDP by 0.66Billion; 4) The KREDITPK variable has a negative effect on North Sumatra's GRDP with statistical values -4.16132, where from the long-term equation it can be seen that a change of 1 billion KREDITPK will reduce GRDP by 1.80 billion; 5) The TSEJH variable has a negative effect on North Sumatra's GRDP with statistical value -3.05731, where from the long-term equation it can be seen that a change in 1 Rupiah TSEJH will reduce GRDP by 1.02 billion.

The order is based on the magnitude of the coefficient value and its significance, so in the long term the variables that have a significant influence are INFLATION (-17.09617), KREDITPK (-1.796024), TSEJH (-1.018253), JUB (0.732842), KURS (0.667282) and PENGPS (0.659022). The long-term equation model of the VECM model based on the test results in table 8 above is as follows:

$$\begin{aligned} \text{LNPDRB}(-1) = & 3.317272 - 17.09617* \text{INFLATION}(-1) + 0.667282* \text{LNKURS}(-1) \\ & + 0.732842* \text{LNJUB}(-1) + 0.659022* \text{LNPEMBPS}(-1) - 1.796024* \\ & \text{LNKREDITPK}(-1) - 1.018253* \text{LNTSEJH}(-1) \end{aligned}$$

Apart from carrying out long-term estimation analysis, VECM also carries out short-term estimation analysis of each variable with an error tolerance of 5% and t-statistics $> \pm 1.98$ and variable $CointEq1$ as ECT shows signs of being theoretically correct and significant. The VECM model is backward, which means that short-term imbalances will always be corrected towards long-term balance.

Impulse Response Function (IRF) Analysis

IRF analysis is used to explain how long it takes for a variable to respond to changes that occur in other variables. Apart from that, IRF can also explain the impact of shocks to endogenous variables which directly affect the variables themselves and also other endogenous variables through the dynamic structure in the VECM model. The response of a variable in the short term can be known by the response of a variable that is significant and tends to change. Meanwhile, the long-term response can be known by the response of a variable which tends to be consistent and gets smaller over time. IRF testing in this study uses a time period of 100 (one hundred) periods. The IRF test results for each research variable can be seen as follows:

IRF GRDP Variable

The following are the results of the IRF test for the GRDP variable:

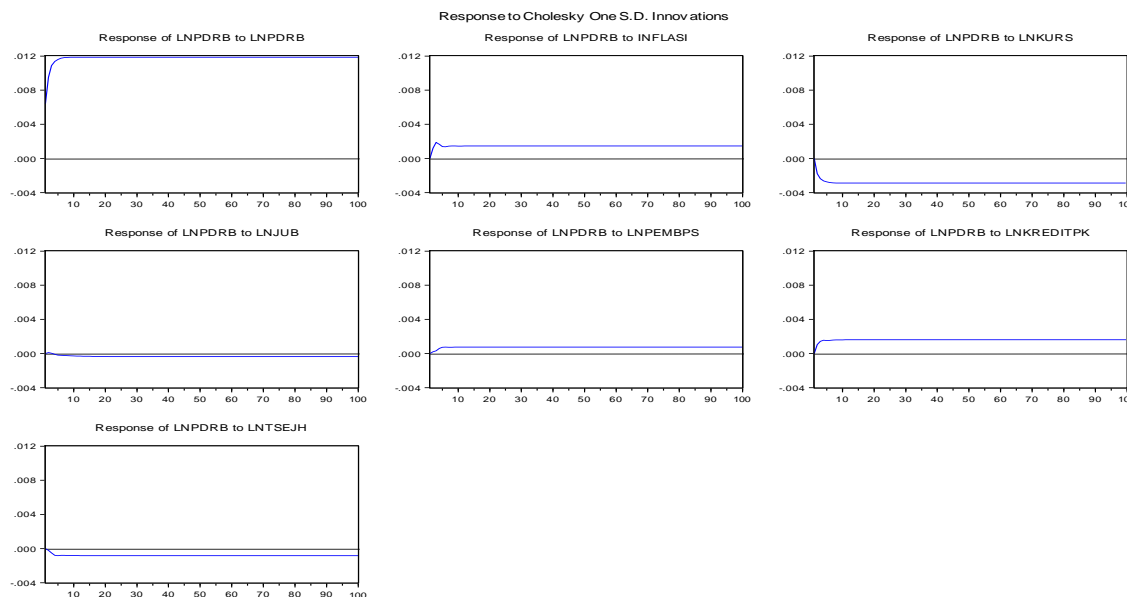
Table 11
Response of LNPDRB to Cholesky (d.f. adjusted) One S.D. Innovations

Period	LNPDRB	INFLATION	LNKURS	LNJUB	LNPEMBPS	LNKREDITPK	LNTSEJH
1	0.006409	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
2	0.009502	0.001192	-0.001793	0.000106	0.000208	0.001040	-0.000203
3	0.010883	0.001868	-0.002372	0.000033	0.000307	0.001434	-0.000512
4	0.011376	0.001653	-0.002637	-0.000101	0.000601	0.001553	-0.000792
5	0.011598	0.001392	-0.002755	-0.000183	0.000730	0.001522	-0.000832
6	0.011737	0.001371	-0.002827	-0.000211	0.000745	0.001539	-0.000792
7	0.011816	0.001439	-0.002862	-0.000226	0.000731	0.001577	-0.000786
8	0.011845	0.001465	-0.002875	-0.000247	0.000736	0.001596	-0.000806
9	0.011852	0.001455	-0.002880	-0.000268	0.000745	0.001599	-0.000819

10	0.011856	0.001446	-0.002883	- 0.000284	0.000749	0.001600	-0.000822
11	0.011859	0.001449	-0.002885	- 0.000296	0.000748	0.001603	-0.000822
12	0.011861	0.001453	-0.002887	- 0.000307	0.000747	0.001607	-0.000824
13	0.011861	0.001455	-0.002887	- 0.000316	0.000748	0.001609	-0.000827
14	0.011861	0.001456	-0.002887	- 0.000323	0.000748	0.001611	-0.000829
15	0.011861	0.001457	-0.002888	- 0.000330	0.000748	0.001612	-0.000830
20	0.011860	0.001460	-0.002888	- 0.000350	0.000748	0.001616	-0.000834
25	0.011859	0.001461	-0.002889	- 0.000359	0.000747	0.001618	-0.000836
30	0.011859	0.001462	-0.002889	- 0.000364	0.000747	0.001619	-0.000837
40	0.011859	0.001462	-0.002889	- 0.000366	0.000747	0.001620	-0.000837
50	0.011859	0.001462	-0.002889	- 0.000367	0.000747	0.001620	-0.000838
60	0.011859	0.001462	-0.002889	- 0.000367	0.000747	0.001620	-0.000838
70	0.011859	0.001462	-0.002889	- 0.000367	0.000747	0.001620	-0.000838
80	0.011859	0.001462	-0.002889	- 0.000367	0.000747	0.001620	-0.000838
90	0.011859	0.001462	-0.002889	- 0.000367	0.000747	0.001620	-0.000838
100	0.011859	0.001462	-0.002889	- 0.000367	0.000747	0.001620	-0.000838
Cholesky Ordering: LNPDRB INFLATION LNKURS LNJUB LNPEMBPS LNKREDITPK LNTSEJH							

Source: data processed with Eviews 9

Figure 2
Response of LNPDRB to Cholesky One S.D. Innovations



Source: data processed with Eviews 9

The results of the IRF test for the GRDP variable in table 16 and figure 2 above can explain the response of the GRDP to shocks in other variables such as GRDP, INFLATION, EXCHANGE, JUB, PENGPS, KREDITPK and fluctuating TSEJH. In the first period, GRDP only responded to shocks from positive GDP (0.006409). In the second period, GRDP responds to shocks from other variables sequentially according to their magnitude, namely GRDP has a positive value (0.009502), EXCHANGE has a negative value (-0.001793), INFLATION has a positive value (0.001192), KREDITPK has a positive value (0.001040), PENGPS has a positive value (0.000208), TSEJH has a negative value (-0.000203) and JUB has a positive value (0.000106). The development of the GRDP response from periods 1 to 100 is as follows: 1) In the short term, GRDP responds positively to GRDP with shocks up to the 7th period, then the positive response tends to increase (convergent) until the 15th period and starts to decrease (divergent) in the 16th to 24th period and sharia and conventional banking in the 25th period to 100, the order changes from 1st in the short term to 3rd in the long term; 2) GRDP in the short term responds negatively to the EXCHANGE with shocks up to the 6th period then the negative

response tends to increase until the 21st period and sharia and conventional banking in the 22nd to 100th period, the order remains 2nd in the short and long term; 2) Short term GRDP responds positively to INFLATION with shocks up to the 8th period then the positive response tends to decrease until the 10th period and begins to increase in the 11th to 26th period and sharia and conventional banking in the 27th to 100th period, the order changes from 3rd in the short term becomes 4th in the long term; 3) GDP in the short term responds positively to KREDITPK with shocks up to the 10th period then the positive response tends to increase until the 32nd period and sharia and conventional banking in the 33rd to 100th period, the order changes from 4th in the short term to 5th in the long term; 4) GDP in the short term responds positively to the PemPS with shocks up to the 7th period then the positive response tends to increase until the 20th period and Sharia and Conventional Banking in the 21st to 100th period, the order changes from 5th in the short term to 1st in the long term; 5) GDP in the short term responds negatively to TSEJH with shocks up to the 8th period then the negative response tends to increase until the 44th period and sharia and conventional banking in the 45th to 100th period, the order remains 6th in the short and long term; 6) GDP in the short term responds positively to JUB with shocks up to the 6th period then the positive response tends to increase until the 44th period and sharia and conventional banking in the 45th to 100th period, the order remains 7th in the short and long term.

The Role of Bank Indonesia in Improving Welfare in North Sumatra Province

Bank Indonesia (BI) has several strategic roles in maintaining and improving community welfare, one of which is that BI has the role of coordinating inflation control, encouraging banking intermediation, and carrying out an advocacy role for local governments and other business actors. BI has a strategic role in maintaining regional economic growth. Coordinating inflation control by forming a Regional Inflation Control Team (TPID) to create Sharia banking standards and monetary conventionality, supporting the easy and cheap availability of goods are steps that can control inflation.

BI coordinates with all related parties to control regional inflation by establishing TPID. This TPID was formed in a number of regions to overcome inflation. BI, through

TIPD, will identify regional inflation pressures from both the demand and supply sides so that steps can be taken to minimize price fluctuations. Maintaining sharia banking stability and conventional prices in the region by ensuring adequate supply of basic necessities is an effort to control inflation in the region.

Economic growth supported by low inflation has an influence on increasing the level of people's welfare. Community economic prosperity can be achieved through reducing poverty, equalizing income and maintaining Sharia banking and conventional financial systems in Indonesia by creating a financial system that can be accessed by all levels of society.

BI plays a role in encouraging banking intermediation in the regions by requiring banks to announce interest rates and encouraging banks to use Sharia and Conventional banking to play a large role in credit distribution as well as allocating credit to MSMEs of at least 20% of total credit and encouraging credit guarantees in the regions (Pemda).

The Role of Sharia and Conventional Banking in Improving Welfare in North Sumatra Province

As an intermediation institution and also as a financial services provider. Banking institutions cannot be separated from their important role as contributors in improving welfare in North Sumatra Province. Banking institutions that are present in the community provide access and financial services to increase capital accumulation in business as well as in consumption activities that increase purchasing power for the community (Hayati, 2014). This statement is in accordance with the results of interviews with several practitioners and banking leaders, both sharia banking institutions and conventional banking institutions. As stated by Mr. Eli Sugiarto, the leader of OCBC NISP, who stated:

“In the midst of the pandemic, credit for micro, small and medium enterprises (MSMEs) is still a concern for banks. Moreover, the regulator will increase the portion of MSME credit through plans to regulate the Macroprudential Inclusive Financing Ratio (RPIM). For example, PT Bank OCBC NISP Tbk (NISP) has provided banking product services for MSMEs, both credit and savings. Currently, Director of PT Bank OCBC NISP Tbk Hartati said that the portion of MSME credit distribution reached more than 16% of NISP’s total credit as of the end of last March. By distributing credit to MSMEs, Bank OCBC

NISP hopes to continue to contribute to the recovery process of the Indonesian economy, of course while still paying attention to existing regulations and applying the precautionary principle. Apart from that, this Singaporean investor-owned bank is committed to providing support to MSMEs through various relevant financial solutions, starting from accounts specifically designed for business actors, working capital loans, investment credits, facilities and services to increase business efficiency as well as empowerment programs. Bank OCBC NISP always strives to encourage growth in every business sector, while remaining guided by the principle of prudence in distributing credit to maintain healthy asset quality. In distributing credit, banks with the share code NISP are always guided by aspects of sustainability, responsible financing and the principle of prudence. Bank OCBC NISP consistently maintains the non-performing loan (NPL) ratio below the provisions. “We will continue this initiative through good planning, as well as monitoring and early anticipatory steps”, he added (Sugiharto, 2021).

From this statement it is clear that banking institutions are still the focus of access to finance and capital in MSME businesses. We know that MSMEs are one of the driving forces of economic activity and a pillar in improving community welfare. Banking institutions are not only providers of financial services in providing access to capital and other financial transaction activities, but also with the community empowerment model they are an integral part of improving community welfare, especially in North Sumatra Province.

CONCLUSION

Based on the test results and discussions that have been carried out, the conclusions in this research are: 1) The INFLATION variable has a negative effect on North Sumatra's GRDP with a statistical value of -8.61474, where from the long-term equation it can be seen that a 1% change in INFLATION will reduce GRDP by 17.10 billion; 2) The JUB variable has a positive effect on North Sumatra's GRDP with a statistical value of 1.35887, where from the long-term equation it can be seen that a change of 1 billion JUB will increase GRDP by 0.73 billion; 3) The KURS variable has a positive and significant effect on North Sumatra's GRDP with a statistical value of 2.87268, where from the long-term equation it can be seen that a change of 1 Rupiah in KURS will increase GRDP by 0.67 billion; 4) The

PENGPS variable has a positive and significant effect on North Sumatra's GRDP with a statistical value of 4.33898, where from the long-term equation it can be seen that a change of 1 billion in BOMBPS will increase GRDP by 0.66 billion; 5) The KREDITPK variable has a negative effect on North Sumatra's GRDP with a statistical value of -4.16132, where from the long-term equation it can be seen that a change of 1 billion in KREDITPK will reduce GRDP by 1.80 billion; 6) VariableTSEJH has a negative effect to North Sumatra's GRDP with a statistical value of -3.05731, where from the long-term equation it can be seen that a change of 1 TSEJH Rupiah will reduce GRDP by 1.02 billion; 7) From the results of the VECM test, banking has a role in increasing North Sumatra's GRDP in both the short and long term.

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