



The Effect of Economic Growth, Unemployment, and Savings on Interest Rates and Inflation

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Abstract

Inflation, interest rates, savings, economic growth, and unemployment are macroeconomic fundamental variables that are important and mutually influential and must remain stable. The purpose of this study is to determine the direct, indirect, and total effect of economic growth, unemployment and savings on interest rates and inflation in Indonesia. The method of analysis used multiple regression standard model and path analysis. The type of data used is secondary time series data for 33 years (1986-2019) obtained from BPS and the World Bank. The main research results show that macroeconomic fundamental variables; saving, economic growth and unemployment have a negative and significant effect both directly on inflation and indirectly through interest rates on inflation. The first largest contribution is from economic growth, and the smallest contribution is from the unemployment variable. This research provides policy implications to maintain macroeconomic stability, first of all to increase high and quality economic growth and maintain low unemployment.

Keywords: *Inflation, Interest Rate, Economic Growth, Unemployment, Savings*

Abstrak

Inflasi, suku bunga, tabungan, pertumbuhan ekonomi, dan pengangguran merupakan variabel fundamental makro ekonomi yang penting dan saling berpengaruh serta harus tetap dapat dijaga stabilitasnya. Tujuan penelitian ini untuk mengetahui pengaruh langsung, pengaruh tidak langsung dan pengaruh total dari pertumbuhan ekonomi, pengangguran dan tabungan terhadap suku bunga dan inflasi di Indonesia. Metode analisis digunakan regresi berganda model baku dan path analysis. Jenis data digunakan data sekunder time series selama 33 tahun (1986-2019) yang diperoleh dari BPS dan World Bank. Hasil riset utama menunjukkan bahwa variabel fundamental makro ekonomi; tabungan, pertumbuhan ekonomi dan pengangguran berpengaruh negatif dan signifikan baik secara langsung terhadap inflasi dan secara tidak langsung melalui tingkat suku bunga terhadap inflasi. Kontribusi pengaruh terbesar pertama diberikan dari pertumbuhan ekonomi, dan sumbangan terkecil dari variabel pengangguran. Riset ini memberikan implikasi kebijakan untuk menjaga stabilitas ekonomi makro, terlebih dahulu harus ditingkatkan pertumbuhan ekonomi tinggi dan berkualitas serta menjaga pengangguran yang rendah.

Kata Kunci: *Inflasi, Suku Bunga, Pertumbuhan Ekonomi, Pengangguran, Tabungan*

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INTRODUCTION

Macroeconomic fundamentals such as inflation, interest rate, unemployment, and economic growth have often become serious problems in recent times in various countries (Islam et al., 2017; Tanaka et al., 2021; Rafiq, 2021; Batrancea, 2021; Marpaung et al., 2022). In Malaysia, inflation become the main problem that greatly affects economic growth, IHK, the labor market and investment (Islam et al., 2017).

Meanwhile, Tanaka et al. (2021) explained that the evolution of natural interest rates is considered an important and useful tool for formulating macroeconomic policies in five Southeast Asian Countries (Indonesia, Malaysia, Filipina, Singapura, dan Thailand). This result of the research also shows that the economic crisis has further reduced the natural interest rates of the five ASEAN economies, although the timing varies to some extent (Tanaka et al., 2021).

Historically, real interest rates also remain depressed years after the pandemic (Jorda et al., 2021; Rafiq, 2021). Recent research results show that on average across the Korean business cycle, the balance of private sector savings and investment requires very low real interest rates in the medium term (Rafiq, 2021). Meanwhile, the research results from Akinci et al. (2021) introduce the concept of real interest rates as an instrument of financial stabilization using a macroeconomic research model.

What is meant by a real interest rate for financial stabilization is a threshold interest rate that triggers the binding of the constraint. Next, this result of the research confirms that when the financial sector becomes more leveraged, so the interest rate for financial stabilization becomes (Akinci et al., 2021).

Indonesia experienced a crisis that shook the economy in 1998 and 2008, namely the occurrence of the monetary and economic crises caused by high levels of inflation. Basorudin (2019) found that stabilization inflation becomes a prerequisite for continuous economic growth and it can have an impact on the welfare of the community.

One of the factors that affect the inflation rate is the interest rate. Interest rates are used to determine the level of savings and investment that will be made by economic actors in the economy (Sukirno, 2016). The interest rate is divided into two, namely nominal interest rate and real interest rate. The real interest rate is the nominal interest rate that has been adjusted for the current inflation rate so that it more accurately reflects the actual. Meanwhile, the interest rate without any calculation or adjustment for inflation is the nominal interest rate (Frederic, 2008).

Basorudin (2019) in his research stated that interest rates dominate in influencing inflation in Indonesia, rather than the influence exchange rates in influencing inflation. This is based on the ability of interest rates to influence inflation in both the long and short term. The relationship between interest rates and inflation has a negative correlation, meaning that if interest rates increase, inflation will decrease, and vice versa if interest rates decrease, inflation will increase.

To achieve stable economic growth, good inflation control is needed. Nainggolan et al. (2019) state that a country with a good economic growth rate and becomes a developed country and becomes a separate attraction for other countries to invest and cooperate with that country. Ardiansyah (2017) also states that high economic growth will be followed by an increase

in the output of the number of goods produced and this will have an impact on increasing people's welfare.

When the inflation rate is not controlled and economic growth declines, it will result in an increase in the number of poverty and unemployment. Unemployment itself is the amount of labor that cannot be absorbed by the market because the amount of labor supplied exceeds the amount of labor demand needed. From time to time this unemployment problem has become one of the most difficult problems to overcome in every country. This is because over time the increasing number of people causes the number of job seekers to increase beyond the required number of workers.

Inflation and movement are one of economic phenomena that can be described through the Phillips curve. In the movement of the Philips curve, it can be explained that inflation and risk have a negative relationship, where when inflation is high, inflation will decrease, and vice versa when inflation is low, inflation will increase. However, with the implementation of the Inflation Targeting Framework (ITF), the shape of the Phillips curve in Indonesia will be different from the Phillips theory.

Nabella (2017) found that there is a significant two-way relationship between inflation and unemployment. When inflation increases it will have a significant effect on the unemployment rate, and vice versa when the unemployment rate increases it will have a significant effect on the inflation rate. A high unemployment rate can also have an impact on the level of domestic savings because unemployment increases, the amount of income will decrease, and savings will decrease.

Mankiw (2006) explained that there is a substitution effect and income effect on interest rates that can explain household behavior in determining the amount of interest rates on savings with saving activities. The substitution effect will encourage a person's behavior to save more, while the income effect encourages someone to continue to encourage someone to reduce savings and increase consumption. Saving is considered one of the pillars of economic growth, a high level of savings can lead to an increase in fixed aggregate capital to support the running of the economy. a person's perception of saving can be reflected by the purchasing power and wage levels in a country (Raza, 2017).

The formulation of the problem raised in this study is how the influence of economic growth, unemployment, and savings on interest rates either partially or combined and how the influence of economic growth, unemployment, savings, and interest rates on inflation either partially or combined as well as direct, indirect and the total impact.

Meanwhile, the purpose of this study is to determine and analyze the effect of economic growth, unemployment and savings on interest rates either partially or combined, direct effect.

RESEARCH METHODS

This research is a type of quantitative research with the associative explanation. Quantitative research is research that analyzes the data in the discussion in the form of numbers (Wahyuningrum, 2018). Meanwhile, associative explanatory research itself is a type of research that aims to analyze variables and the influence between one variable and another (Ardiansyah, 2017). The analytical technique used in this research is Path Analysis using IBM SPSS

Statistics 26 software, while the analysis in this study uses descriptive and quantitative analysis. Quantitative analysis in this study uses the OLS method which can be used to determine the effect of exogenous variables on endogenous variables which can be formulated into the following path analysis model equation structure:

$$Y_2 = \rho_{Y_2.X_2} X_2 + \rho_{Y_2.X_4} X_4 + \rho_{Y_2.X_5} X_5 + \varepsilon \dots \dots \dots (1)$$

$$Y_1 = \rho_{Y_1.X_2} X_2 + \rho_{Y_1.X_4} X_4 + \rho_{Y_1.X_5} X_5 + \rho_{Y_1.Y_2} Y_2 + \varepsilon \dots \dots \dots (2)$$

Where Y_1 is Real Interest Rate (%), Y_2 is Inflation, X_2 is Economic Growth (%), X_4 is Unemployment, X_5 is Savings (percentage of Gross Domestic Savings), ε is error term, ρ is parameters in Path Analysis.

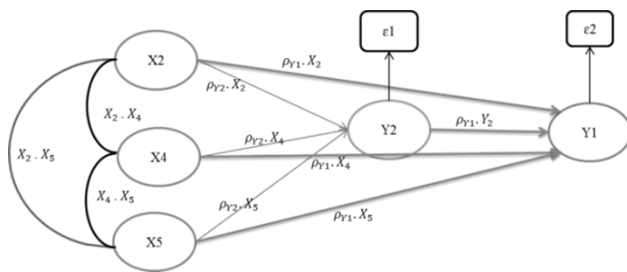


Figure 1. Path Analysis Diagram

RESULTS AND DISCUSSION

A determination test is a test by looking at the value of R-square (R^2) in the estimation results of the path analysis model equation. This determination test is used to find out how far the exogenous variables in the model are able to explain the endogenous variables with the assumption of ceteris paribus.

Based on table 5 model 1, it can be seen that the exogenous variables of economic growth (X_2), unemployment (X_4), and savings (X_5) are able to affect the endogenous variable of interest rates (Y_2) by 0.697 or 69.7%. Meanwhile, the remaining 30.3% is explained by other variables outside the model.

Table 5. Determination Test

Indicator	Model	
	1	2
R	0.835 ^a	0.94 ^a
R Square	0.697	0.887
Adjusted R Square	0.667	0.871
Std. Error of the Estimate	4.3350598614279	3.3717
Durbin-Watson	1.807	1.437

Source: IBM SPSS Processed, 2021

Based on table 5 model 2, it can be seen that the exogenous variables of economic growth (X_2), unemployment (X_4), savings (X_5), and interest rates (Y_2) can affect the endogenous variable inflation (Y_1) by 0.887 or 88.7%. While the rest, 11.3%, is explained by other variables outside the model.

The partial test in path analysis can be seen from the Beta value or Standardized Coefficients in the table below, while testing the hypothesis it can be done with the T-test and to see if the effect occurs significantly or not, it can be known through the significant test.

From table 2 model 1 it can be seen that the results of the path analysis of sub-structure I seen the value of T-statistics and sig can be seen that the economic growth variable (X_2) has an effect on interest rates (Y_2) The unemployment variable (X_4) has a significant effect on interest rates (Y_2). The savings variable (X_5) has a significant effect on interest rates (Y_2).

From table 2 model 2 it can be seen that the variable economic growth (X_2) has a significant effect on inflation (Y_1). The unemployment variable (X_4) has a significant effect on inflation (Y_1). The savings variable (X_5) has a significant

effect on inflation (Y1). And the interest rate variable (Y2) has a significant effect on inflation (Y1). F-statistical test is used to see the extent to which exogenous variables are able to influence endogenous variables in the model. The F-statistical test was carried out by comparing the F-statistical value with the f-table. The results of the F-statistic test can be seen in table 6.

Based on table 6 model 1, it can be seen that F-statistics > f-table, so it can be concluded that simultaneously the exogenous variables of economic growth (X2), unemployment (X4), and savings (X5) have a significant effect on the endogenous variable of interest rates (Y2) in Indonesia.

Table 6. Simultan Test

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.835 ^a	.697	.667	4.335059861427975	1.807
2	.942 ^a	.887	.871	3.37170	1.437

Source: IBM SPSS Processed, 2021

Based on the results of tests that have been carried out on the equation of the substructure model I and the equation of the substructure model II, it can be described in the path analysis diagram in figure 3.

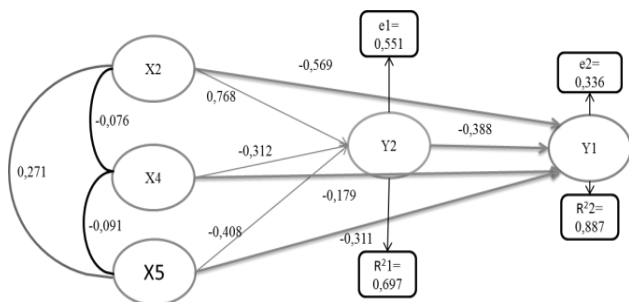


Figure 3. Results of Path Analysis Diagram

From the path analysis diagram, it can be seen that the coefficient of determination of each exogenous variable on the endogenous variable. For more details, it can be written in the structural model equation as follows:

$$Y_2 = 0.768 X_2 - 0.312 X_4 - 0.408 X_5 + \epsilon_1 \dots \dots \dots (3)$$

$$Y_1 = - 0.569 X_2 - 0.179 X_4 - 0.311 X_5 - 0.388 Y_2 + \epsilon_2 \dots \dots \dots (4)$$

From the various tests that have been carried out, data processing can be carried out via Microsoft Excel to determine the magnitude of the direct influence, indirect effect, and total effect in table 7.

The economic growth variable (X2) partially has a positive and significant effect on interest rates (Y2) of 0.768. In this study, it is known that there is a positive and significant influence between economic growth and interest rates which indicates that the increase in the rate of economic growth reflects the increasing purchasing power of the people so that interest rates will increase. This is very attractive to investors because an increase in economic growth will affect interest rates, which in turn will increase investors' purchasing power for a portfolio.

In the theory of liquidity preference, Keynes emphasizes the interest rate with the demand for

money on speculation. The results of this study prove that the liquidity preference in this study is in accordance with the actions of investors to invest when they have speculations that they will get dividends or capital gains. Meanwhile, based on the theory of economic growth, the Solow-Swan model explains that economic growth depends on the level of increase in the supply of production factors, such as population, labor and

capital accumulation, and technology (Antasari, 2015). The results of this study prove that economic growth will increase when the accumulation of capital that occurs increases, in this case, the accumulation of capital through investments that will bring dividends or capital gains, so that per capita income will increase which will encourage increased economic growth.

Table 7. Path Analysis Results Direct Effects, Indirect Effects, and Total Effects.

Variable	Std. Coefficient	Direct Effect	Indirect Effect				Total Indirect Effect	Total Effect
			X ₂	X ₄	X ₅	Y ₂		
Economic Growth (X ₂)	-0.569	0.324		-0.008	0.048	0.170	0.210	0.534
Unemployment (X ₄)	-0.179	0.032	-0.008		-0.005	-0.022	-0.034	-0.002
Savings (X ₅)	-0.311	0.097	0.048	-0.005		-0.049	0.006	0.090
Interest Rate (Y ₂)	-0.388	0.151	0.170	-0.022	-0.049		0.099	0.249
TOTAL		0.603					0.268	0.871

Source: Ms. Excell Processed, 2021

The unemployment variable (X₄) partially has a negative and significant effect on interest rates (Y₂) of -0.312. The results of this study are in accordance with the theory of liquidity preference which explains that a person's motive for holding money is influenced by three motives, namely transaction motives, precautionary motives, and speculation motives.

Keynes assumed that the money supply could affect the balance of the money market and determine the interest rate. This study suggests that unemployment affects the decrease in the amount of money circulating in the community as a result of increasing unemployment and decreasing income per capita. The impact of this decline in per capita income will have an impact on the decline in people's purchasing power.

When people's purchasing power declines, the economy will experience sluggishness, to

respond to this interest rates will be lowered in the hope of pushing the wheels of the economy back to normal, providing loan funds for the community to develop businesses so that they are able to open job vacancies and overcome unemployment, as well as increasing purchasing power public. Agboola (2019) stated that the unemployment rate can affect interest rates and an increase in interest rates affects unemployment as a result of a reduction in investment spending that triggers layoffs (PHK).

The savings variable (X₅) partially has a negative and significant effect on interest rates (Y₂) of -0.408. The theory used in this study is the Investment-Saving (IS) theory which explains that the amount of investment and savings is influenced by interest rates and income. The results of this study are in accordance with the IS theory, which shows that as savings increase,

This shows that when the number of savings from the community increases, it means that in the long term the amount of money circulating in the community decreases because the majority of people use it to save, so this is responded to by lowering interest rates through a discount policy so that the money supply in the community can be controlled. and the economy can be more stable. The results of this study support previous research conducted by (Xiuli, 2019), which states that in the long term interest rates will become insensitive to savings.

The economic growth variable (X_2) partially has a negative and significant effect on inflation (Y_1) of -0.569 . The economic growth variable (X_2) can directly affect inflation (Y_1) by 0.324 . That is, in the long term, increased economic growth will increase people's purchasing power so that the amount of money circulating in the community will increase and result in an increase in inflation, and vice versa. In accordance with research from Wijaya et al. (2021) states that in the short term and long term economic growth has a significant effect on inflation in Indonesia.

Indirectly economic growth (X_2) can affect inflation (Y_1) through unemployment (X_3) by -0.008 . Based on the results of path analysis, the first largest contribution of influence appears to be given from the economic growth variable of 0.534 . This means that in the model it can be stated that the increase in economic growth is able to provide the first largest contribution in efforts to control inflation.

The theory used in this study is the quantity theory which explains that inflation is influenced by the amount of money circulating in the community. This research shows that the rate of economic growth in a country will grow and

develop well when inflation in that country can be controlled. In the long term, Bank Indonesia has a policy to control the inflation rate through the inflation targeting framework (ITF) policy, namely inflation of $3 \pm 1\%$. However, when inflation in a country is high, people's purchasing power will decrease and the investment climate in that country will become less exciting so the economy will also experience sluggishness.

The unemployment variable (X_4) partially has a negative and significant effect on inflation (Y_1) of -0.179 . The unemployment variable (X_4) can directly affect inflation (Y_1) by 0.032 . This means that the increase in the unemployment rate reflects the weakening purchasing power of the people and has an impact on rising inflation.

And indirectly unemployment (X_4) can affect inflation (Y_1) through savings (X_5) by -0.005 . An increase in the unemployment rate causes per capita income and economic growth to decline, which has an impact on the decline in the savings rate because it tends to be used for consumptive needs and precautionary motives so that the money supply in society will increase and inflation will also increase.

Based on the results of path analysis, the contribution of the influence with the smallest contribution appears to be given from the unemployment variable of -0.002 . This means that the unemployment factor contributes the smallest to the decline in the inflation rate. This happens because the relationship between unemployment and inflation does not match the Phillips curve which shows a significant negative effect. The ITF policy is carried out by the Central Bank so it is more focused on achieving macroeconomic targets such as creating jobs and increasing economic growth. The theory used in this study is the Philips theory which explains

that there is a negative relationship between the inflation rate and the unemployment rate.

The results of this study are in accordance with the Philips theory, which shows that when unemployment increases, the amount of money circulating in the community will decrease because the per capita income obtained by the community has decreased because the money supply in the community has decreased, and inflation will decrease. If this continues in the long term, deflation will occur, where deflation is a phenomenon where prices of goods and services have decreased and deflation occurs due to a relatively small amount of money circulating in the community.

The savings variable (X_5) partially has a negative and significant effect on inflation (Y_1) of -0.311. Savings variable (X_5) can directly affect inflation (Y_1) by 0.097. This means that savings have contributed to controlling the inflation rate as a tool to increase purchasing power and control the amount of money circulating in society.

And indirectly savings (X_5) can affect inflation (Y_1) through economic growth (X_2) of 0.048. The results of this study indicate a negative influence between savings and inflation, because, during the study period, namely 1986-2019, inflation in Indonesia on average was mild inflation of less than 10% per year.

The theory used in this research is quantity theory and IS theory. The results of this study are in accordance with the quantity theory as indicated by the increase in the number of savings will affect the amount of money circulating in the community, thus affecting the amount of inflation that will be created. Meanwhile, based on the IS theory in this study, it is shown by the attitude of the people to save which is influenced by the amount of interest

rates offered, where the interest rate is created as an effort to control the inflation rate.

The interest rate variable (Y_2) partially has a negative and significant effect on inflation (Y_1) of -0.388. The interest rate variable (Y_2) can directly affect inflation (Y_1) by 0.151. This shows that if interest rates increase, especially on savings interest rates when the inflation rate is high, it will have an impact on the amount of money in circulation (JUB) in the community, which will decrease. Meanwhile, if interest rates fall, especially credit interest rates when the inflation rate is declining, the JUB in the community will increase because people will tend to make loans with low credit interest, so gradually this will trigger inflation as a result of JUB in the community increased.

The theory used in this research is the quantity theory which explains that the money supply affects inflation. The results of this study are in accordance with the quantity theory which is indicated by high-interest rates, the money supply in the community will decrease and inflation will decrease, and vice versa.

The results of this study contradict previous research conducted by Agusmianata (2017), which states that interest rates have a positive and significant effect on inflation in Indonesia. Meanwhile, Ningsih's research (2018) shows that interest rates have no significant effect on inflation.

CONCLUSION

Based on the results of this study, it can be concluded that partially the variables of economic growth (X_2), unemployment (X_4), and savings (X_5) have a significant effect on interest rates (Y_2). And together the variables of economic growth (X_2), unemployment (X_4) and savings (X_5) have a significant effect on interest

rates (Y₂) with an F-statistic coefficient of 23.022.

Partially, the variables of economic growth (X₂), unemployment (X₄), savings (X₅), and interest rates (Y₂) have a significant effect on inflation (Y₁). And together the variables of economic growth (X₂), unemployment (X₄), savings (X₅), and interest rates (Y₂) can have a significant effect on inflation (Y₁) with an F-statistic coefficient of 56.782.

Economic growth variable (X₂) has a direct contribution to inflation (Y₁) of 32.3%, and indirectly economic growth (X₂) has a contribution to inflation (Y₁) through unemployment (X₄) of -0.8%. The unemployment variable (X₄) has a direct contribution to inflation (Y₁) of 3.2%, and indirectly unemployment (X₄) has a contribution to inflation (Y₁) through savings (X₅) of -0.5%.

Savings variable (X₅) has a direct contribution to inflation (Y₁) of 9.7%, and indirectly savings (X₅) has a contribution to inflation (Y₁) through interest rates (Y₂) of -4.9%. And the interest rate variable has a direct contribution to inflation of 15.1%. Based on the results of path analysis, the first largest contribution of influence is given from the economic growth variable of 53.4%, and the smallest contribution from the unemployment variable is -0.2%.

REFERENCES

- Akinci et al. (2020). *The Financial (In) Stability Real Interest Rate, Federal Reserve Bank of New York Staff Reports*, No. 946.
- Agboola, O. J. (2019). Economic Growth, Unemployment, and Interest Rate in Nigeria: Application of Fourier Toda-Yamamoto. *The International Journal Research Publication's, Research Journal of Science & IT Management*, 1-15.
- Agusmanata, T. (2017). [Pengaruh Jumlah Uang Beredar dan Tingkat Suku Bunga serta Pengeluaran Pemerintah Terhadap Inflasi di Indonesia]. *Forum Ekonomi*, 19(3), 188-200.
- Antasari, A. S. (2015). [Pengaruh Pengeluaran Pemerintah terhadap Pertumbuhan Ekonomi di Provinsi Bengkulu]. *Ekombis Review: Jurnal Ilmiah Ekonomi dan Bisnis*, 3(2), 117-127.
- Ardiansyah, H. (2017). [Pengaruh Inflasi Terhadap Pertumbuhan Ekonomi di Indonesia]. *Jurnal Pendidikan Ekonomi*, 5(3), 1-5.
- Basorudin, A. (2019). [Analisis Faktor Determinan yang Mempengaruhi Tingkat Inflasi di Indonesia Dengan Error Correction Mechanism]. *Jurnal Penelitian Ekonomi dan Bisnis*, 4(2), 120-131.
- Frederic, M. S. (2008). [*Ekonomi Uang, Perbankan dan Pasar Keuangan*]. Jakarta: Salemba Empat.
- Islam et al. (2021). Determinants of Factors that Affecting Inflation in Malaysia. *International Journal of Economics and Financial Issues*, 7(2), 355-364.
- Jorda et al. (2020). The Long-Run Effects of Monetary Policy, Federal Reserve Bank of San Francisco, Working Paper 2020-01.
- Mankiw, G. (2006). [*Principles of Economics-Pengantar Ekonomi Mikro Edisi 3*]. Jakarta: Salemba Empat.
- Marpaung et al. (2022). [Forecasting the Inflation Rate in Central Java Using ARIMA Model]. *Efficient: Indonesian Journal of Development Economics*, 5(2), 163-173. <https://doi.org/10.15294/efficient.v5i2.54227>
- Nabella, A. (2017). [Analisis Kausalitas Antara Inlasi dan Pengangguran di Indonesia]. *Jurnal Ilmiah Mahasiswa (JIM) Ekonomi Pembangunan Fakultas Ekonomi dan Bisnis Unsyiah*, 2(3), 423-430.
- Nainggolan et al. (2019). [Peranan Kebijakan Moneter Mengendalikan Suku Bunga dan Inflasi Serta Pengaruhnya Terhadap Pertumbuhan Ekonomi di 4 Negara Asia (Singapura, Korea Selatan, Jepang dan Indonesia)]. *Prosiding Seminar Bisnis Magister Manajemen (SAMBIS) 2019*.
- Ningsih, L. (2018). [Analisis Pengaruh Jumlah Uang Beredar, Suku Bunga dan Nilai Tukar Terhadap Inflasi di Indonesia Periode 2014-2016]. *Dayasaing Jurnal Ekonomi Manajemen Sumber Daya*, 20(2), 96-103.
- Rafiq, S. (2021). What's in the (R)-Stars for Korea. *IMF Working Paper no. WP/21/93. Asia and Pacific & Research Department*.
- Raza, S. (2017). The Effects of Interest Rate, on Savings and Deposits in Pakistan. *International Journal of Business and General Management (IJBGGM)*, 6(6), 67-74.

- Sarwono, J. (2012). [*Path Analysis dengan SPSS: Teori, Aplikasi, Prosedur Analisis untuk Riset Skripsi, Tesis, dan Disertasi*]. Jakarta: PT. Elex Media Komputindo.
- Stanislawski, F. P. (2017). The Impact of Inflation Expectations on Polish Consumers' Spending and Saving. *Eastern European Economics*, 55(1), 3-28.
- Sukirno, S. (2016). [*Mikroekonomi-Teori Pengantar Edisi Ketiga*]. Jakarta: PT. RajaGrafindo Persada.
- Tanaka et al. (2021). The Natural Rate of Interest in Emerging Asia: Long-Term Trends and The Impact of Crises. *ADB Working Paper Series*, No. 1263, May 2021
- Wahyuningrum, A. (2018). [Analisis Pengaruh Inflasi, Produk Domestik Bruto (PDB), dan Nilai Tukar terhadap Tabungan Mudharabah pada Bank Umum Syariah (Periode 2013-2017)]. *Jurnal Ekonomi Syariah Indonesia Volume*, 8(2), 138-147.
- Wijaya et al. (2021). [Analisis Pengaruh Jumlah Uang Beredar Konsumsi Masyarakat, Pertumbuhan Ekonomi Dan Tingkat Suku Bunga Terhadap Inflasi di Indonesia]. (*Doctoral dissertation, Universitas Bung Hatta*).
- Xiuli, C. (2019). Research on the Abnormal Growth of Chinese Household Savings Under the Effect of "Negative Interest Rate". *Canadian Social Science (CSCanada)*, 15(9), 52-60.