

The Effect of Third-Party Funds (DPK) and Non-Performing Loans (NPL) Upon Operating Costs of Operating Income (BOPO)

(Case Study on Conventional Commercial Banks for the 2017-2021 Period)

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Abstract

This research intends to quantify the impact of nonperforming loans and third-party funding on operating cost and income. Third party funding and non-performing loans were the study's independent variables. Operational expenses and operating income are the dependent variables employed in this study. The samples utilized in this study are non-performing loans and third-party funding. Panel data regression analysis is the technique utilized for data analysis. Secondary data from quarterly financial reports at 4 (four) traditional commercial banks between 2017 and 2021 was the sort of research employed in this study. According to the study's findings, non-performing loans have a big impact on operating costs and operating income whereas third-party funds have no impact on either. Third party funds in general and non performing loans, however, have an impact on operational cost and income.

Keywords: *Third Party Funds, Non-Performing Loans, Operating Cost Operating Income.*

INTRODUCTION

Banking is the economic lifeblood of the nation. The objective of Indonesian banking is to promote the implementation of national development within the context of national stability in the direction of equity, economic expansion, and population increase. Article 1 point 2 of Law No. 21 of 2008 explains a bank as a company that gathers savings by the general and distributes them to the public and/or in various ways to raise the general quality of life for individuals. Similarly, state banking, as funds entities that enjoy the public's trust, are obligated to have qualified human resources., Therefore, it is necessary to have an organizational culture that is a tool for achieving company success, people resources that are qualified and motivated, and a pillar of competitiveness.

The organizational culture is consistent with the bank's adherence of the Good Corporate Governance (GCG) principles that are governed by Bank Indonesia. Good Corporate Governance (GCG) is a bank governed in accordance with Bank Indonesia Regulation No.

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8/4/PBI/2006 and employs the principles of transparency, accountability, freedom, and fairness. The implementation of Good Corporate Governance (GCG) would have an effect on government banks that can operate in a sound way, with profitability being one of the markers of soundness. Operational Costs, Operating Income (BOPO) is the profitability measurement technique used to determine the effectiveness of a state-owned bank, since the ratio between operating expenses and operating income has a significant impact on the evaluation of a bank. In addition to being a comparison between output and input, the efficiency of a corporation also refers to the way in which available resources and all existing restrictions are managed in order to create optimal output.

Indonesia's economy is experiencing challenges as a result of the global problems that are currently impacting the country. According to the Otoritas Jasa Keuangan (OJK) website, a negative Gross Domestic Product (GDP) can trigger a recession, which can range from an increase in unemployment to two consecutive quarters of negative real economic growth. Central banks all across the world simultaneously increased interest rates in reaction to inflation, causing this recession. One of the factors is the Covid-19 outbreak and the Russia-Ukraine conflict, which have affected the supply chain for different commodities. A rise in interest rates might push the global core inflation rate, excluding energy, to approximately 5% in the following year. This number is nearly double the average inflation rate over the five years preceding the epidemic.

Bank Indonesia also increased the benchmark interest rate by 125 basis points (bps) to 4.751%, resulting in a rise in future bank lending rates. Banks are required to respond to elevated benchmark interest rates by increasing the interest rate on Third Party Funds (DPK), particularly deposits.

Third Party Funds (DPK) are Rupiah and foreign currency contributions from the general public, including people, businesses, governments, households, cooperatives, and foundations. This is the largest bank-owned fund for most or all banks and the general public. Third Party Funds (TPF) include deposits, checking accounts, and savings accounts.

The source of bank profits and income is credit. Customers who are unable to pay their agreed-upon responsibilities, so leaving bad or fixed debts, however, pose significant challenges for banks. Bad credit is also known as *Non Performing Loan* (NPL) is a ratio that indicates a debt that has trouble being repaid owing to default and external events beyond the borrower's control. The greater this ratio, the lower the banking credit rating as a result of default rates on problem loans. *Non performing loan* (NPL) has a significant impact on the banking operating income because the operating revenue is comprised of the interest generated from borrowers.

Banks whose loans are predominantly categorised as *Non-Performing Loans* will experience a considerable drop in operating

income (substandard, doubtful and non-performing). The ratio of Operational Expenses to Operational Income (BOPO) are able to be used to determine the efficiency of a bank; therefore, the bank's operating income must be increased by reducing or lowering the amount of *Non-Performing Loans*. Therefore, the ratio of Operating Costs to Operating Income (BOPO) will fall if the *Non-Performing Loan* lowers.

All parties involved in evaluating a bank's performance in implementing the values of caution and following all applicable laws, and risk management have an interest in the financial and non-financial soundness levels of the institution. The world of banking must pay close attention to the situation and any complications that may occur. Banks must always be prepared to take have the reaction of the one that occurred in 1998, which had a substantial impact on the Indonesian banking industry.

Consequently, the author has an interest in undertaking research pertaining to the topic *The Effect of Third-Party Funds and Non-Performing Loans Upon Operating Costs of Operating Income (Case Study on Conventional Commercial Banks for the 2017-2021 Period)*. The purpose of this research is to ascertain the impact of *Non-Performing Loans* and *Third-Party Funds* on operating costs and operating income.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

According to Law of the Republic of Indonesia Number 10 of 1998, a bank is a legally recognized organization that collects money from the general public in the form of savings and disburses it to the general public in the form of credit or other forms in order to improve the standard of living for many people. According to Statement of Financial Accounting Standards Number 311, a bank is both an institution that facilitates payment traffic and one that serves as a financial intermediary (*Financial Intermediary*) between parties that have extra funds (*Surplus Unit*) and parties that need money (*Deficit Unit*). A bank can be defined as a financial organization whose operations are focused on public fund collection and the provision of a variety of other financial services.

Dendawijaya (2009) claims that the three main sources of bank funds are First party funds are provided by bank owners or shareholders, second party funds are provided by third parties in the form of loans, and third-party funds are provided by public deposits. The conclusion is that a bank is a type of financial entity that performs a variety of financial services, including the collecting of tax money. In an effort to improve the standard of living for the common person, the bank also disperses these funds in the form of loans or credit.

Demand deposits, savings deposits, and time deposits gathered by banks from the general public make up the Third-Party Funds (DPK) (Kasmir, 2014). According to Pandia (2012:11), The purposes and objectives of the bank include maximizing fund productivity while

acting as the bank's operating funds and a tool for the government to implement monetary policy.

Non Performing Loan (NPL) is an indicator that measures the creditworthiness and soundness of a bank. Bank Indonesia now permits a maximum *Non-Performing Loan* (NPL) rate of 5%; if this rate surpasses 51%, It will be detrimental to the stability of the bank, hence lowering its possible value or score. *Non-Performing Loan* (NPL) is a credit risk measure It shows how many non-performing loans there are compared to all loans. The risk associated with extending credit to a bank-increases in proportion to the high level of non-performing loans (NPL) the bank is facing. This is because the bank is less skilled at managing its credit the higher its level of non-performing loans (NPL) (Riyadi, 2012).

Non-Performing Loan (NPL) can be determined in the following manner:

$$NPL = \frac{\text{Problem Credit}}{\text{Total Credit}} \times 100\%$$

Criteria for evaluating the soundness of the *Non-Performing Loan* (NPL) ratio in accordance with PBI No. 17/11/PBI/2015, Bank Indonesia has established a max *Non-Performing Loan* (NPL) ratio of 5%, and a bank is deemed unhealthy if it exceeds this threshold. Furthermore, *Non-Performing Loan* (NPL) is fixed below 5% in order to enhance *Bottom Line Bank*.

Costs of operation Operational Income (BOPO) is the ratio used to assess a bank's operational activities' effectiveness and capacity. Computed as the sum of overall interest costs and entire operating expenses. The little the ratio, the higher effective the bank is at paying operational expenses, and the less likely it is to experience problems. Similarly, a bank with a high ratio of Operational Expenditure to Operational Revenue (BOPO) shows that the bank is not running efficiently, as a high ratio indicates that the bank incurs significant operational costs to create operating income.

The formula for calculating Operating Costs Operating Income (BOPO) is as follows:

$$BOPO = \frac{\text{Total Operating Expenses}}{\text{Total Operating Income}} \times 100\%$$

The authors formulated the following research hypothesis based on the aforementioned framework paradigm:

H₁: Third Party Funds (DPK) have a partial effect on Operational Costs, Operational Income (BOPO).

H₂: *Non Performing Loan* (NPL) affects Operational Costs Operational Income (BOPO) in part.

METHOD

The method of research employed by researchers is verification research. The verification technique, also known as the causal method, is a research in which the researcher determines the cause of one or more issues (Sekaran & Bougie, 2017).

The data utilized are quarterly financial reports from typical commercial banks spanning 2017 to 2021. This sample size of this research is a conventional commercial bank employing an 80-sample saturating sample. This research utilizes a purposive sampling strategy for its sampling procedure. The technique used for data analysis is panel data regression. The technique of data panels combines cross-sectional and time series data types.

The research object in a research is known as the research variable (Nuryaman & Christina, 2015). The research objects used are Third Party Funds (DPK), Non-Performing Loans (NPL), and Operational Cost Operational Income (BOPO). The dependent variable is Operational Cost Operational Income (BOPO) and the independent variables are Third Party Funds (DPK) and *Non-Performing Loans* (NPL). During the period of 2017 to 2021, this analysis focuses on traditional commercial banks.

The information utilized in this study is secondary information. Secondary data are those that are published in papers and that were produced by third parties; data regarding other variables can be found in company-made reports (Nuryaman & Christina, 2015). The data is collected quarterly, despite the fact that the data source uses information from regular commercial banks' quarterly financial reports for the years 2017 through 2021.

The data collection method employed for this study was documentation. The documentation strategy necessitates that the researcher analyze written artifacts including, but not limited to, books, periodicals, documents, rules, meeting minutes, and daily notes (Arikunto, 2014). The method of documentation described above employs data tracing techniques via the Internet (online research), library research, and surveillance.

This research employs panel data regression analysis to analyze its data. This method use regressive panel data (regressive data panel) to analyze a mix of time series data and cross sectional data. In this work, Eviews 10 was used for panel data regression.

This research was carried out on the websites of four typical commercial banks: Bank Rakyat Indonesia (BRI), Bank Mandiri, Bank Negara Indonesia (BNI), and the Bank Tabungan Negara (BTN). Conventional banks are financial institutions that conduct business by establishing prices in line with the interest rates that Bank Indonesia has published.

RESULTS AND DISCUSSION

The results of the descriptive analysis can be seen in table 1 below:

Table 1. Descriptive Analysis Result
Descriptive Statistics

	BOPO	DPK	NPL
Mean	76.80213	83.91713	3.041375
Median	73.15500	85.16000	3.000000
Maximum	98.12000	100.7800	4.910000
Minimum	63.01000	25.81000	1.750000
Std. Dev.	8.709159	10.25286	0.744301
Skewness	0.632427	-2.270265	0.491626
Kurtosis	2.295063	14.15374	2.701751

Source: *Output EvIEWS 10*

Using the data in the table above, descriptive statistical tests get the following results:

1. The test findings for the variable Operational Costs Operational Income (BOPO) indicate that the average value is 76.80213, which is a positive figure, indicating that Operational Costs Operational Income (BOPO) possesses no negative value for the analyzed organizations. The median value is 73.15500, the greatest value for Operational Costs for Operational Income (BOPO) in 2019 was generated by the State Savings Bank (BTN), and the lowest value was generated by Bank Mandiri. The standard deviation value for Operational Costs for Operational Income (BOPO) is 8.709159. In other words, the decrease in operational costs can be attributed to a reduction in expenses relative to revenues. While the increase in operational expenses might lead to a decline in operating income, greater spending relative to income can also contribute to a decline in operating income.
2. The average value of the test results for the variable ratio of Third-Party Funds (DPK) is 83.91713, which is a positive figure indicating that the Third-Party Funds (DPK) value of the analyzed companies doesn't keep a negative value. The median value is 85.16000, while the Bank Tabungan Negara (BTN) generated the highest (maximum) Third Party Funds (DPK) value of 100.7800 in 2019, Bank Tabungan Negara (BTN) produced the lowest (minimum) value of 25.81000 in 2017, and the Third-Party Funds (DPK) variable's standard deviation stood at 10.25286. The significant amount of third-party funds shows the bank's strong capacity to obtain money from others as required in the form of giro, savings accounts, and time deposits. A bank is unable to get money from third parties in the form of current accounts, savings deposits, and time deposits, as evidenced by the low value of third-party funds. An increase in giro, savings, and bank deposits made by the general population is what caused the value of third-party funds to rise. A decrease in bills, savings, and time deposits may be the cause of the drop in the value of third-party funds.
3. The test results for the *Non-Performing Loan* (NPL) variable reveal that the average value is 3.041375; this is a positive number, indicating that the *Non-Performing Loan* (NPL) value of the organization under consideration does not have a negative value.

The median value is 3,000,000, the maximum value was generated by Bank Tabungan Negara (BTN) in 2020, and the minimum value was generated by Bank Negara Indonesia (BNI) in 2019. The standard deviation of the *Non-Performing Loan* (NPL) variable is 2,701751.

During the research period, conventional commercial banks were able to maintain a nonperforming loan ratio of less than 5% based on the data exposure described above. Despite oscillations in increases and declines from 2017 to 2021, the performance of non-performing loans was gradually improved.

The following is a possible formulation of the panel data regression equation: based on the outcomes of processing the data supplied in the table above: $Y = 58.65473 - 0.007482X_1 + 6.173276 X_2$

Information:

Y = Operational Costs Operational Income (BOPO)

X₁ = Third-Party Funds (DPK)

X₂ = *Non Performing Loan* (NPL)

Table 2. Panel Data Regression Analysis

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	58.65473	5.803198	10.10731	0.0000
DPK	-0.007482	0.036100	-0.207255	0.8364
NPL	6.173276	0.577157	10.69602	0.0000

Source: *Output Eviews 10*

Below is a description of the aforesaid regression equation model:

1. If the independent variables (X) Third Party Funds (DPK) and *Non-Performing Loan* (NPL) have the value 0 then the dependent variable (Y) Operating Cost Operating Income (BOPO) has the value 58.65473.
2. The regression coefficient of the independent variable (X₁) Third Party Funds (DPK) is -10.007482, which indicates that if the independent variable *Non-Performing Loan* (NPL) has a fixed value or a value of 0, the dependent variable (Y), namely Operational Costs, Operating Income (BOPO), will decrease by -10.007482.
3. The regression coefficient of the independent variable (X₂) *Non-Performing Loan* (NPL) is 6.173276, indicating that the dependent variable (Y), namely Operating Costs, Operating Income (BOPO), would increase by 0.739806 units if the independent variable increases by 1 unit.

Table 3. Partial Test (t-test)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	58.73701	3.865885	15.19368	0.0000
DPK	-0.007769	0.036105	-0.215167	0.8302
NPL	6.154136	0.577923	10.64871	0.0000

Source: *Output Eviews 10*

An explanation of the previously stated t test findings is provided below:

1. Using a significance level of 0.05 to test the Third-Party Funds (DPK) hypothesis, the significant value of the Third-Party Funds (DPK) variable was determined to be 10.8302. Therefore, since

0.8302 > 0.05, the hypothesis is rejected. This indicates that the variable Third Party Funds (DPK) has no effect on the relationship between Operational Expenses and Operational Income (BOPO). The Third-Party Funds (DPK) variable has a negative statistical value of -10.215167.

2. Testing the *Non-Performing Loan* (NPL) hypothesis yielded a significant value of 0.10000 for the *Non-Performing Loan* (NPL) variable at the 0.05 level of significance. The hypothesis is accepted when the value is 0.0000 < 0.05. This indicates that the Operational Cost of All Operating Income is affected by the Non-Performing Loan (NPL) variable in part (BOPO). The Non-Performing Loan (NPL) variable has a positive t-statistical value of 10.64871.

Table 4. Simultaneous Test (F-test)

R-squared	0.874794	Mean dependent var	76.80213
Adjusted R-squared	0.866334	S.D. dependent var	8.709159
S.E. of regression	3.184102	Akaike info. criterion	5.226256
Sum squared resid	750.2493	Schwarz criterion	5.404908
Log likelihood	-203.0502	Hannan-Quinn criter.	5.297883
F-statistic	103.4050	Durbin-Watson stat	0.884972
Prob (F-statistic)	0.000000		

Source: *Output EvIEWS 10*

Based on the findings of Test f, it is determined that the dividend policy value is simultaneously statistically significant, or that the *Probl* (F *Statistic*) is 1,000,000, and the *Significance* level is 0.05 (5%). Therefore, the value is 0.000000 < 0.05, indicating that Third Party Funds (DPK) and *Non-Performing Loans* (NPL) have an impact on Operational Expenses and Operational Income simultaneously (BOPO).

Table 5. Determination Coefficient Test

R-squared	0.874794	Mean dependent var	76.80213
Adjusted R-squared	0.866334	S.D. dependent var	8.709159
S.E. of regression	3.184102	Akaike info. criterion	5.226256
Sum squared resid	750.2493	Schwarz criterion	5.404908
Log likelihood	-203.0502	Hannan-Quinn criter.	5.297883
F-statistic	103.4050	Durbin-Watson stat	0.884972
Prob (F-statistic)	0.000000		

Source: *Output EvIEWS 10*

Based on the results of the tests for the coefficient of determination (R²), the independent variables had a value of 0.866334, or 86.63%. From the experiments conducted, researchers may conclude that 86.63% of Operational Costs and Operating Income (BOPO) at traditional commercial banks for the period 2017-2021 is influenced by the two X factors evaluated, namely the ratio of Third-Party Funds (DPK) and *Non-Performing Loans* (NPL). In addition, the remaining value of 13,37% is impacted by factors outside the scope of this study. The regression model's standard error value is 3.184102 with the S. E. of Regression. That standard deviation number is less than the answer variable's standard deviation, as measured by S.D. The dependent variable is 8.709159, hence the regressive model is predictively correct.

CONCLUSION

According to the analysis's findings, typical commercial banks' operational expenses and operating income (BOPO) for the years 2017 to 2021 are unaffected by third-party funds (DPK). The average Third Party Funds (DPK) fluctuates annually. From 2017 to 2019, it climbed, but from 2020 to 2021, it declined. Bank Mandiri has highest Third-Party Funds (DPK) ratio on average. Meanwhile, Bank Negara Indonesia (BNI) has the lowest average Third Party Funds (DPK) ratio. Consequently, Bank Mandiri is a state-owned bank (State Owned Enterprise) in which the general public has the highest level of confidence to deposit funds.

The findings of the research revealed that partly *Non-Performing Loans* (NPL) have a favorable impact on Operational Costs Operating Income (BOPO) for conventional commercial banks during the timeframe of 2017-2021. This happens because *Non-Performing Loans* (NPL) are increasing, and because the increase in *Non-Performing Loans* (NPL) is more than the rise in credit, this will result in an increase in costs that exceeds income. Consequently, the Operating Costs Operating Income (BOPO) rise. Bank Tabungan Negara (BTN) has the highest average value of *Non-Performing Loan* (NPL). Bank Rakyat Indonesia (BRI) has the lowest average *Non-Performing Loan* (NPL). The analysis reveals that Third Party Funds (DPK) and Non-Performing Loans (NPL) have a substantial impact on Operating Costs Operational Income (BOPO) for traditional commercial banks for the period of 2017-2021.

REFERENCES

- Anggraeni, S. J. (2017). The Influence of Total Asset and Third Parties Fund on Bank Efficiency Rate. *Jurnal Ilmiah Mahasiswa FEB*, 5(1).
- Arikunto, S. (2014). *Prosedur Penelitian Suatu Pendekatan Praktik*. Jakarta: Rineka Cipta.
- Baltagi, B. H. (2005). *Econometric Analysis of Panel Data*. England: John Wiley & Sons, Ltd.
- Bank Mandiri. (n.d.). *Quarterly Financials*. www.bankmandiri.co.id.
- Bank Negara Indonesia. (n.d.). *Laporan Triwulan*. www.bni.co.id.
- Bank Rakyat Indonesia. (n.d.). *Laporan Keuangan BRI*. www.bri.co.id.
- Bank Tabungan Negara. (n.d.). *Laporan Keuangan Triwulan*. www.btn.co.id.
- Darmawi, H. (2011). *Prosedur Penelitian Suatu Pendekatan Praktik*. Jakarta: Bumi Aksara.
- Dendawijaya, L. (2009). *Manajemen Perbankan*. Jakarta: Ghalia Indonesia.
- Edison, A. (2019). *Metode Penelitian Bisnis*. Bandung: Cendra.
- Gujarati, D. N., & Porter, D. C. (2009). *Basic Econometrics*. New York: McGraw Hill.
- Harahap, S. S. (2009). *Analisis Kritis Atas Laporan Keuangan*. Jakarta: Raja Grafindo Persada.

- Harnanto. (2019). *Dasar - Dasar Akuntansi*. Yogyakarta: Andi.
- Jumingan. (2011). *Analisis Laporan Keuangan*. Jakarta: Bumi Aksara.
- Kadek Indah Maheswari, & I Made Surya Negara Sudirman. (2014). Pengaruh NPL terhadap ROA dengan Mediasi CAR dan BOPO pada Perbankan Indonesia. *E-Jurnal Manajemen*, 3(4).
- Kasmir. (2014). *Bank dan Lembaga Keuangan Lainnya*. Jakarta: Raja Grafindo Persada.
- Kasmir. (2019). *Analisis Laporan Keuangan*. Depok: Rajawali Pers.
- Mulyadi. (2015). *Akuntansi Biaya*. Yogyakarta: UPP STIM KPN.
- Munawir. (2010). *Analisis Laporan keuangan*. Yogyakarta: Liberty.
- Nazir, M. (2011). *Metode Penelitian*. Bogor: Ghalia Indonesia.
- Nuryaman & Veronica, C. (2015). *Metodologi Penelitian Akuntansi dan Bisnis*. Bogor: Ghalia Indonesia.
- Pandia, F. (2012). *Manajemen Dana dan Kesehatan Bank*. Jakarta: Rineka Cipta.
- Peraturan Bank Indonesia Nomor 8 Tahun 2006 tentang Pelaksanaan Good Corporate Governance bagi Bank Umum*
- Peraturan Bank Indonesia Nomor 17 Tahun 2015 Tentang Perubahan Atas Peraturan Bank Indonesia Nomor 15 Tahun 2013 Tentang Giro Wajib Minimum Bank Umum dalam Rupiah dan Valuta Asing Bagi Bank Umum Konvensional.*
- Periansya. (2015). *Analisa Laporan Keuangan*. Palembang: Politeknik Negeri Sriwijaya.
- Pernyataan Standar Akuntansi Keuangan Nomor 31 tentang Akuntansi Perbankan.*
- Poernawatie, F. (2009). Pengaruh Risiko Kredit Terhadap Kinerja Keuangan pada Bank-Bank Persero yang Terdaftar di BEI. *Jurnal Manajemen Gajana*, 6(1).
- Raksasasmita, A. (2012). *Pengaruh Loan to Deposit Ratio (LDR) dan Dana Pihak Ketiga (DPK) Terhadap Bopo (Biaya Operasional/Pendapatan Operasional) Pada Bank Pemerintah yang Listing di BEI (Bursa Efek Indonesia) Periode 2007-2011.* <https://Repository.Widyatama.ac.id/>.
- Rivai, V., & Basyir, S. (2013). *Commercial Bank Management: Manajemen Perbankan dari Teori ke Praktik*. Jakarta: Rajawali Pers.
- Riyadi, S. (2012). *Banking Asset and Liability Management*. Jakarta: Fakultas Ekonomi Universitas Indonesia.
- Sekaran, U. (2017). *Metode Penelitian untuk Bisnis: Pendekatan Pengembangan-Keahlian*. Jakarta Selatan: Salemba Empat.
- Sugiyono. (2017). *Metode Penelitian Kuantitatif, Kualitatif, dan R&D*. Bandung: Alfabeta.
- Surat Edaran Bank Indonesia No. 6 Tahun 2004 tentang Sistem Penilaian Tingkat Kesehatan Bank Umum.*
- Taswan. (2008). *Akuntansi Perbankan*. Semarang: UPP Sekolah Tinggi Ilmu Manajemen YKPN.

- Toli, M. F. O. (2014). *Pengaruh LDR, IPR, APB, NPL, APYD, IRR. dan FBIR Terhadap Bopo Pada Bank Pembangunan Daerah di Indonesia*. <https://eprints.perbanas>.
- Undang-Undang Nomor 21 Tahun 2008 Pasal 1 Angka 2 tentang Undang-Undang tentang Perbankan Syariah.*
- Undang-Undang Republik Indonesia Nomor 10 Tahun 1998 tentang Perubahan Atas Undang-Undang Nomor 7 Tahun 1992 tentang Perbankan.*
- Undang-Undang Republik Indonesia Nomor 10 Tahun 1998 tentang Perubahan Atas Undang-Undang Nomor 7 Tahun 1992 tentang Perbankan.*
- Widarjono, A. (2017). *Ekonometrika Pengantar dan Aplikasinya Disertai Panduan Eviews*. Yogyakarta: UPP STIM YKPN.