Macroeconomic Factors and Balance of Payment: Evidence from Indonesia

by Agus Eko S

Submission date: 11-Apr-2020 12:26PM (UTC+0800)
Submission ID: 1294982651
File name: Macroeconomic_Factors_and_Balance_of_Payment.pdf (208.36K)
Word count: 5284
Character count: 27851

Industrial Engineering
& Management Systems
Vol 19, No 1, March 2020, pp.266-272
ISSN 1598-7248 | EISSN 2234-6473 |
https://doi.org/10.7232/iems.2020.19.1.266

Macroeconomic Factors and Balance of Payment: Evidence from Indonesia

Agus Eko Sujianto*
Institut Agama Islam Negeri Tulungagung, INDONESIA

(Received: October 31, 2019 / Revised: January 6, 2020 / Accepted: January 16, 2020)

ABSTRACT

The study aims at examining the relationship of macroeconomic variables including exchange rates, national income, interest rates, and inflation on the balance of payments in Indonesia. This research applied a Vector Error Correction Model (VECM) to determine the relationship between variables in the short-term and the long-term period. This study used data from Bank Indonesia and Statistics Indonesia from 2010 to 2017. The findings show that in the long-term, all variables, including exchange rates, national income, interest rates, and inflation, have a significant effect on Indonesia's balance of payment. In more detail, interest rates and national income have a significant positive effect on the balance of payments, in contrast, the exchange rates and inflation have a significant negative effect on Indonesia's balance of payments. In the short-term, the exchange rate, national income, interest rates and inflation have no impact on Indonesia's balance of payments.

Keywords: Balance of Payments, Exchange Rates, National Income, Interest Rates, Inflation, Educational Quality

* Corresponding Author, E-mail: agusekosujianto@gmail.com

1. INTRODUCTION

International trade plays an essential role in the economy of a nation, including Indonesia. It stimulates changes in the economic factors that lead to higher economic growth. Hasoloan (2013) stated that international trade encourages a country to provide specialization in producing their goods and services. The history of international trade can be seen from the balance of payments. The development of Indonesia's foreign sector and its international balance of payments are influenced by many economic factors including inflation, interest rates, exchange rates, and global economy (Astuti *et al.*, 2015; Falianty, 2018; Purwono *et al.*, 2018).

The balance of payments of a country strongly determines the economic condition of a country (Masdjojo, 2005). The deficit international balance of payment is an external problem experienced by many developing countries (Sujianto and Suryanto, 2018; Wulandari *et al.*, 2019). In developing countries, the balance of payments deficit caused by trade balance deficit often raises many concerns. Policies to stabilize the balance of payments by promoting trade and maintaining economic growth are needed (Boateng and Ayentimi, 2013). Meanwhile, there are internal factors that affect the balance of payments performance such as the conditions of a country's macroeconomic fundamentals and domestic economic shocks (Fitri, 2014). Indonesia's economic growth in 2016 was sustained by a well-maintained domestic economic stability. It indicated by low inflationary pressures, a decline in the current account deficit, continued control of the rupiah exchange rates, and well-maintained financial system stability (Sujianto and Effendi, 2016).

Indonesia's balance of payments experienced the highest surplus in 2010 and experienced the highest deficit in 2013. In 2010, Indonesia's balance of payments recorded a surplus of 30.28 billion USD because during the fourth quarter of 2010 the capital and financial transactions increased a surplus of up to 9.9 billion USD. In 2013, Indonesia's balance of payments recorded a deficit

of 7.3 billion IDR (Bank Indonesia, 2017). This condition is affected by the global economy, declining commodity prices, and shrinking capital flows to the developing countries. In the midst domestic economy structure that does not support external resilience (Muchdie and Narmaditya, 2019). Foreign exchange reserve is significant for a country. Countries with strong foreign exchange reserves can maintain the continuity of their economic activities and can push the economic growth. For developing countries like Indonesia with adequate foreign exchange reserves, debt repayment and provision of foreign exchange can be realized to maintain the stability of rupiah to the USD exchange (Sujianto, 2018).

Many factors influence the changes in the balance of payments. One of which is a monetary approach to the balance of payments developed by Johnson (2016) and Mundell (1960). The main feature of this approach is to understand the international balance of payments as a monetary phenomenon. Foreign exchange reserves are essential for a country. Countries with substantial foreign exchange reserves can maintain the continuity of their economic activities and can push the economic growth.

Numerous studies have been conducted on balance of payments in various countries such as (Duasa, 2004; Eita and Gaomab, 2012; Imoughele and Ismaila, 2015; Osisanwo *et al.*, 2015; Umoru and Odjegba, 2013). Osisanwo *et al.* (2015) remarked that the balance of payments enhanced economic growth in Nigeria. Indeed, Eita and Gaomab (2012) showed that an increase in gross domestic product and interest rates lead to a greater balance of payment in Namibia. Umoru and Odjegba (2013) revealed that the exchange rate has affected the balance of payments in Nigeria. In addition, Imoughele and Ismaila (2015) stated that inflation has a negative effect on the balance of payments stability in Nigeria. Furthermore, Duasa (2004) provided an evidence on the long-term relationship between trade balance and income and money supply in the Malaysian economy. Eita and Gaomab (2012) stated that an increase in the interest rates has a positive impact on Namibia's current account.

However, limited number of researchers are focused on the balance of payment in Indonesia. Falianty (2018), for instance, focused on the current price of exported and imported commodities in Indonesia. Unfortunately, the previous studies do not include macroeconomic variables and its impact on the Indonesia's balance of payment. Therefore, the main purpose of this study is to examine the relationship between macroeconomic factors and the balance of payments in Indonesia.

2. METHODOLOGY

This study applied quantitative research using Vector Error Correction Model (VECM) to determine the relationship between the variables in the short-term and the long-term. The data used in this study are secondary data from various sources, including data from Bank Indonesia and Statistics Indonesia from 2010 to 2017. The assumptions that must be fulfilled in VECM are stationary at the data speed of the first difference and the data has a cointegration relationship. VECM restricts the long-term relationship of endogenous variables to converge into their cointegration relationship but still allows the existence of short-term dynamics.

$$NP = \beta 0 + \sum_{t}^{n} \beta_1 \Delta NP_{t-1} + \sum_{t}^{n} \beta_2 \Delta ER_{t-1} + \sum_{t}^{n} \beta_3 \Delta NI_{t-1} + \sum_{t}^{n} \beta_4 \Delta IR_{t-1} + \sum_{t}^{n} \beta_5 \Delta inf_{t-1} + \lambda EC_{t-1} + \varepsilon_t$$

Notes:
NP = Balance of payments period t
NP_{t-1} = NP in period t-1 (lag)
ER_{t-1} = Exchange rate in period t-1 (lag)
NI_{t-1} = National income in period t-1 (lag)
IR_{t-1} = Interest rate in period t-1 (lag)
INF_{t-1} = Inflation in period t-1 (lag)

3. RESULTS

3.1 Stationary Test Data

The first step taken for VECM estimation is testing data stationarity of each variable, both the dependent variable and the independent variables. In this study, to detect stationarity of each variable, the ADF test (Augmented test Dickey-Fuller) is applied by comparing ADF statistics with critical Mac Kinnon's values at a significant level of 1 percent, 5 percent, and 10 percent, respectively.

Based on Table 1, it can be seen that the balance of payments, exchange rate, GDP, interest rates, and inflation are not stationary at the level indicated from p-value greater than alpha ($\alpha = 0.05$). Therefore, data is formed at the level of first difference. Stationarity test results for the first difference in the balance of payments, exchange rates, GDP, interest rates, and inflation have a p-value smaller than alpha ($\alpha = 0.05$). Hence, all variables are stationary

Table 1. Stationary test results

Variables	ADF - Level	P- value	ADF - first difference	P-value
NFA	-0.684508	0.8358	-7.617219	0.0000
ER	-0.214190	0.9265	-10.03553	0.0000
GDP	-0.654784	0.8399	-4.743117	0.0011
IR	-1.162528	0.6771	-6.220200	0.0000
INF	-2.306145	0.1764	-11.79937	0.0000

at the level of first difference.

3.2 Lag Length Test

Testing of lag length shows how long the impact has occurred from the independent variable to the dependent variable.

Table 2 provides an information about the result of lag length test. From the table, it is known that the optimal lag length is in lag 2, yet, there are more indications of lag orders selected by the carrier (*). Therefore, the optimal lag length used in the study this is lag 2.

3.3 Cointegration Test

Cointegration test is carried out to determine the existence of relationships between variables, especially in the long run. The cointegration relationship has a role which is very important in the VECM model. If cointegration relationship do not present between the variables, VECM estimation can be cancelled and be replaced with VAR method. The cointegration test is performed using Johansen method with a critical value of 5 percent or 0.05.

Table 3 presents the cointegration test result of the study. The result showed that in the 5 percent (0.05) level there are two cointegration related variables. It indicated that by trace values, the statistics 137.5400, 61.90855, and 29.87673 are greater than the critical value of 0.05, namely 69.81889, 47.86613, and 29.79707, respectively. Thus, the variables in this study has a long-term relationship between one another. Therefore, the VECM estimation can be used in this study.

3.4 Granger Causality Test

The Granger causality test is applied to understand whether two variables have reciprocal relationship. Variables are said to have relationships feedback if the prob-

Table 2. Lag length test result

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-710.5533	NA	1.86e+15	49.34851	49.58425*	49.42234*
1	-691.2923	30.55197	2.85e+15	49.74430	51.15874	49.84041
2	-651.8551	48.95651*	1.25e+15*	48.74863*	51.34178	49.56077

Table 3. The result of cointegration test

Hypothesized No. of CE (s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None*	0.932870	137.5400	69.81889	0.0000
At most 1*	0.681456	61.90855	47.85613	0.0014
At most 2*	0.488101	29.87673	29.79707	0.0490
At most 3	0.290570	11.12714	15.49471	0.2038
At most 4	0.052666	1.514906	3.841466	0.2184

Table 4. Granger causality test result

Null Hypothesis:	Lag 2	
	F-Stat	Prob.
DINTEREST RATE does not Granger Cause DBOP	0.1257	0.8824
DBOP does not Granger DINTEREST RATE	0.6862	0.5131
DINFLATION does not Granger Cause DBOP	0.4469	0.6448
DBOP does not Granger Cause DINFLATION	0.3781	0.6891
DEXCHANGE RATE does not Granger Cause DBOP	0.2058	0.8154
DBOP does not Granger Cause DEXCHANGE RATE	1.2988	0.2913
DGDP does not Granger Cause DBOP	0.6066	0.5533
DBOP does not Granger Cause DGDP	1.9543	0.1636
DINFLATION does not Granger Cause DINTEREST RATE	3.4412	0.4832
DINTEREST RATE does not Granger Cause DINFLATION	1.7179	0.3655
DEXCHANGE RATE does not Granger Cause DINTEREST RATE	0.7498	0.4832
DINTEREST RATE does not Granger Cause DEXCHANGE RATE	1.0499	0.3655
DGDP does not Granger Cause DINTEREST RATE	0.2179	0.8058
DINTEREST RATE does not Granger Cause DGDP	2.5240	0.1012
DEXCANGE RATE does not Granger Cause DINFLATION	0.6727	0.8058
DINFLATION does not Granger Cause DEXCHANGE RATE	0.0083	0.9912
DGDP does not Granger Cause DINFLATION	1.2568	0.3026
DINFLATION does not Granger Cause DGDP	1.2934	0.2928
DGDP does not Granger Cause DEXCHANGE RATE	1.8926	0.1725
DEXCHANGE RATE does not Granger Cause DGDP	10.412	0.0716

ability value is less than 0.05. It means that one variable has a significant reciprocal relationship with other variables.

Table 4 provides information on the result of Granger causality test between the variables. From the table, the variables which have a causal relationship are shown by the probability level of not more than 0.05 and vice versa. From this calculation, it can be concluded that there is no reciprocal relationship between the variables including exchange rate, BI rate, GDP, inflation, and balance of payments. The absence of a reciprocal relationship between the variables means that the calculation can be continued to the VECM test.

3.5 The VECM Estimation

The use of VECM estimation is aimed to identify the short-term and long-term relationships and the influence of independent variables on the dependent variable. In the VECM estimation, if the value of t-statistic is higher than t-table, then it can be stated that there are long-term or short-term relationship between the variables. Long- or short-term relationships can be interpreted as the existence of effects that arise between the variables, both positive or negative influences.

The study has 32 and 5 variables data observation. With the use of $\alpha = 5\%$ (0.05), the t-table used is 1.70329.

Table 5. VECM test result

Long-Term Relationship		
Variable	Coefficient	T-Statistic
D(NP-1)	1.000000	
DBIRATE(-1)	3862819	[4.73734]
DINFLATION(-1)	-25585680	[-7.02091]
DEXC (-1)	-169.9391	[-1.94723]
DGDP(-1)	19.69970	[14.5143]
C	-1.912411	
Short-Term Relationship		
Variable	Coefficient	T-Statistic
CointEq1	-0.006500	[-0.12126]
D(DNP(-1))	-0.287958	[-1.00678]
D(DNP(-2))	-0.050182	[-0.61264]
D(DBIRATE(-1))	-1289907	[-0.33189]
D(DBIRATE(-2))	-2022209	[-0.48788]
D(DINFLATION(-1))	856487.7	[0.62860]
D(INFLATION (-2))	1259707.	[1.06154]
D(DEXC(-1))	10.22306	[0.25079]
D(DEXC(-2))	-9.679329	[-0.21135]
D(DGDP(-1))	0.279626	[0.42286]
D(DGDP(-2))	0.192630	[0.39096]
C	-1594.547	[-0.13170]

In the optimal lag test, the data used in this study shows the optimal level in the second lag, hence, from the VECM estimation used in this study, we can see a statistical comparison between t-statistic and t-table. If t-statistics > t-table variables have either long-term or short-term relationship.

4. DISCUSSION

Based on the results of the analysis, it is known that in the long-run the exchange rate has a negative and significant influence on the balance of payments, but within short-term period, exchange rates have no significant positive effect. Based on monetarist approach theory, when a domestic currency price experiences depreciation, or foreign currency experiences appreciation, it can increase the balance of payments. Domestic prices will increase. This depreciation can improve the balance of payments through increasing capital inflows from investors as a result of rising interest rates in response to the increases domestic prices and the increased demand for domestic money.

Long-term results are not in line with the theory of monetary approaches. The results of this are in line with Umoru and Odjegba (2013) research, which stated that the appreciation of exchange rate affects the balance of payments in Nigeria. This is because be better developed in Africa, Nigeria imports machinery and technology that is very needed for its industrialization from outside. Furthermore, Mushendami *et al.* (2017) revealed that the appreciation of the Namibian Dollar would improve the balance sheet payment, and vice versa. This implies that the depreciation of exchange rate cannot be used to support the current transaction. This phenomenon can be ascribed to the nature of Namibia's exports which are less sensitive to exchange rate changes.

The results of the calculation showed that in the short term exchange rate have a positive value but no significant effect. Odili (2014) stated that the exchange rates have no significant positive effect on the balance of payments in Nigeria. It implies that the changes in exchange rates do not affect Nigeria's balance of payments in the short term.

4.1 The Relationship between National Income and the Balance of Payments

Based on the results of the analysis, it is known that in the long term, GDP positively affects the balance of payment. Meanwhile in the short term, GDP has positive but non-significant influence on the balance of payment. According to the monetarist approach, a rise in GDP will stimulate money demand. The short-term money demand that can be fulfilled by the domestic amount of money

will not affect the balance of payments. However, money demand that occurs in the long run will make a lack of money supply of money that encourage capital imports to Indonesia. The import of capital will increase the amount of foreign exchange reserve balance which means it can improve the balance of payments.

The results of calculation show that GDP, in the long run, has a positive and significant effect on the balance of payments. This result is in accordance with the monetarist approach theory on the balance of payments. The finding of the current study is in line with the research conducted by Boateng and Ayentimi (2013), which stated that GDP has a significant effect on Ghana's balance of payments. The results of the research showed that the increase in GDP will also lead to the increase in foreign assets, GDP is an important factor in determining domestic reserves. Indeed, Fasanya and Olayemi (2018) revealed that economic growth in Nigeria is constrained by the balance of payment. The results of calculations show that in the short-term GDP have a positive and non-significant effect. This finding supports the previous study conducted by Effendy (2014) which mentioned that GDP in the short-term has a positive and non-significant effect on Indonesia's balance of payment. On the contrary, Batool *et al.* (2018) stated that in the short-term GDP correlates with the balance of payment. This is because in the short-term the increase in GDP can improve the demand for money, and this can be met by the amount money that is in the country. Hence, it does not affect the balance of payments.

A broader study revealed a relationship between per capita income and the quality of education as measured by human capital (Jamison *et al.*, 2007). A study on countries that are members of the South Asian Association for Regional Cooperation (SAARC) that investment in the education sector will promote the economic growth (Hanif and Arshed, 2016). Meanwhile, according to Hanushek and Kimko (2000), the quality of education can increase the productivity that makes the economy to grow.

Education also affect students' empowerment, which is, in the long run leads to the improvement of both productivity and performance (Aliafari *et al.*, 2019). Furthermore, the higher labor productivity will increase the economic growth as stated in the study of Ponkratov *et al.* (2019), that in 2000-2018, the economic growth of Indonesia, China, Poland, and India was supported by the productivity of its human resources.

4.2 The Effect of Interest Rates on the Balance of Payments

Based on the analysis results, it is known that interest rates positively affect the balance of payment in the long run. While in the short-term, interest rates have a negative but no significant effect. According to the monetarist approach, interest rates have a positive correlation with the balance sheet payment. An increase in the interest rates will cause capital to flow into the capital and financial balance. In the long-term, it will increase the balance of payments.

Eita and Gaomab (2012) stated that an increase in interest rates has a positive impact on Namibia's current account. Namibia Central Bank indicates several times that an increase in interest rates is needed to reduce unproductive imports to improve the current account. Furthermore, Eita and Gaomab (2012) mentioned that the increase in interest rates has led to the increase in the balance of payments in Namibia. Similarly, this finding is in line with the theoretical expectations that positive interest rates will attract capital inflows and increase the balance of payments.

The results of calculations in the short-term show that interest rates have a negative and no significant influence. This finding agrees with the prior study conducted by Shafi *et al.* (2015) which find negative relationship between interest rates and balance of payment in India and Pakistan. Similarly, this result supports Effendy (2014) who stated that in the short-term interest rates have a negative and no significant influence on Indonesia's balance of payments. This happened because the high- interest rate will attract hot money to enter Indonesia and will trigger an appreciation on the exchange rate. Further, it will make the exports to become more expensive than the imports which will worsen the balance of payments and vice versa. The reason for the non-significant effect of interest rate is because the entering and exiting hot money has little influence on the fluctuation of exchange rate as the result of an inflation in the balance of payments.

4.3 The Relationship between Inflation and Balance of Payments

Based on the results of the analysis, it is known that inflation has a negative and significant influence on the balance of payments in Indonesia. In the short-term, inflation has no significant positive effect on the balance of payments. According to the monetarist approach, inflation has a negative relationship with the balance of payment. When domestic prices rise, it will lead to a reduced demand for domestic goods and services. This will increase the request for imported goods; thus, it has a negative impact on the balance of payment. The results of long-term calculations show that inflation has a negative influence on the balance of payments. When inflation rises, it will lead to the deficit on the balance of payments. Furthermore, the level of inflation in Indonesia is relatively low and it can lead to the economic growth and increase the national income. When the increase in national income caused by inflation is huge, it does not significantly increase the balance of payments (Astuti *et al.*, 2015).

The previous study conducted by Imoughele and Ismaila (2015) mentioned that inflation has a negative effect on the balance of payments stability in Nigeria. This shows that the stability of macroeconomic policies is adequate in Nigeria. One of the triggers of inflation is the number of moneys in the circulation, which is higher than what is needed. If the money supply increases, it will result in people spending this excess money, for example, by importing or buying valuable foreign documents so that there is an outgoing capital flow which causes deficit in the balance of payments.

Similarly, this finding also supports that there is a negative correlation between inflation and the balance of payments (Aidi *et al.*, 2018; Mwai, 2015). Inflation has invited primary attention from each nation, including Indonesia because it has a great impact on the national economy. When the inflation rate is high, it causes the decline in people's purchasing power and national production. The decrease in national production will, in turn, causes a decline in the exports and affect the balance of payments performance. Whereas Manual and San (2019) stated that an increase in the inflation rate increases trade deficit and reduces the trade surplus, especially in Malaysia in the span of 15 years (2000 to 2015).

This result is in line with Effendy (2014) who stated that inflation has a positive and non-significant effect on Indonesia's balance of payments. Inflation can have a positive effect because the inflation in Indonesia is relatively low, which in turn will promote the economy and increase national income. If National income going up, the balance of payments will rise. However, when the increase in national income is not significant it will not increase the balance of payments significantly.

4.4 Contribution

This study is expected to provide insight for the government policy concerning the balance of payment which should consider several macroeconomic factors such as inflation, exchange rates, interest rates, and national income. The quality of education also has a contribution in creating national economic growth. Therefore, human capital needs to be enhanced. This research provides new evidence on the relationship between macroeconomic factors and balance of payment in Indonesia.

5. CONCLUSION

This study examines the relationship between macroeconomic variables and the balance of payments in Indonesia. The findings showed that all variables have correlation with the balance of payments. More precisely, interest rates and national income positively affect the balance of payments. It implies that interest rates and national income stimulate greater increase in the balance of payment. On the other hand, the exchange rate and inflation have a negative correlation with the balance of payments. It showed that when the exchange rate and inflation increase, the balance of payments will decline. In the short-term, macroeconomic factors including the exchange rate, national income, interest rates, and inflation do not have a significant effect on Indonesia's balance of payments. It implies that in the short-term, macroeconomic variables have less influence on the balance of payments.

REFERENCES

Aidi, H. O., Suleiman, H. I., and Saidu, I. A. (2018), Exchange rate, inflation and the Nigerian balance of payment, *Journal of Economics and Sustainable Development*, **9**(3), 10-16.

Aliafari, N., Suryoputro, M. R., and Rahman, N. M. (2019), Productivity analysis on batik production line using objective matrix (OMAX) method, *Industrial Engineering & Management Systems*, **18**(4), 726-734.

Astuti, P. I., Oktavilia, S., and Rahman, A. R. (2015), The international balance of payments role in the economy of Indonesia, *JEJAK, Journal of Economies and Policy*, **8**(2), 173-183.

Central Bank of Indonesia (2017), Laporan Kinerja DPR RI 2010-2017.

Batool, S. A., Memood, T., and Jadoon, A. K. (2018), What determines balance of payments: A case of Pakistan, *Sukkur IBA Journal of Management and Business*, **2**(1), 47-70.

Boateng, C. and Ayentimi, D. (2013), An empirical analysis of balance of payment in Ghana using the monetary approach, *European Journal of Business and Management*, **5**(8), 101-110.

Duasa, J. (2004), *The Malaysian Balance of Payments: Keynesian Approach Versus Monetary Approach*, No 26. Computing in Economics and Finance 2004, Society for Computational Economics.

Effendy, A. K. (2014), Analisis Neraca pembayaran indonesia dengan pendekatan keynesian dan moneter, *Jurnal Ilmiah Mahasiswa FEB*, **2**(2).

Eita, J. H. and Gaomab, M. H. (2012), Macroeconomic determinants of balance of payments in Namibia, *International Journal of Business and Management*, **7**(3), 173-184.

Falianty, T. (2018), Balance of payment dynamic in indonesia and the structure of economy, *Economics and Finance in Indonesia*, **63**(1), 53-80.

Fasanya, I. O. and Olayemi, I. A. (2018), Balance of payment constrained economic growth in Nigeria: How useful is the Thirlwall's hypothesis? *Future*

Business Journal, **4**(1), 121-129.

Fitri, W. (2014), Analisis faktor-faktor yang mempengaruhi neraca transaksi berjalan: Studi Kasus Indonesia Tahun 1990-2011, *Economics Development Analysis Journal*, **3**(1), 189-203.

Hanif, N. and Arshed, N. (2016), Relationship between school education and economic growth: SAARC countries, *International Journal of Economics and Financial Issues*, **6**(1), 294-300.

Hanushek, E. A. and Kimko, D. D. (2000), Schooling, labor-force quality, and the growth of nations, *American Economic Review*, **90**(5), 1184-1208.

Hasoloan, J. (2013), Peranan perdagangan internasional dalam produktifitas dan perekonomian, *Edunomic: Jurnal Ilmiah Pend. Ekonomi*, **1**(2), 102-112.

Imoughele, L. and Ismaila, M. (2015), Monetary policy and balance of payments stability in Nigeria, *International Journal of Academic Research in Public Policy and Governance*, **2**(1), 1-15.

Jamison, E. A., Jamison, D. T., and Hanushek, E. A. (2007), The effects of education quality on income growth and mortality decline, *Economics of Education Review*, **26**(6), 771-788.

Johnson, H. G. (2009), The monetary approach to balance-of-payments theory, *Journal of Financial and Quantitative Analysis*, **7**(2), 1555-1572.

Manual, V. and San, W. (2019), Dynamic relationship between trade balance and macroeconomic elements: Empirical evidence from emerging economies in Malaysia, *International Journal of Recent Technology and Engineering*, **7**(5S), 47-54.

Masdjojo, G. N. (2005), *Analisis fenomena moneter neraca pembayaran Indonesia: Suatu Studi tentang Faktor-Faktor yang Mempengaruhinya Periode 1980-2003*, Master's thesis, Diponegoro Universitas, Indonesia.

Muchdie, M. and Narmaditya, B. S. (2019), Are trades related to technology? Evidences from the Baltic States: Estonia, Latvia and Lithuania, *Journal of Asian Finance, Economics and Business*, **6**(2), 83-93.

Mundell, R. A. (1960), The monetary dynamics of international adjustment under fixed and flexible exchange rates, *The Quarterly Journal of Economics*, **74**(2), 227-257.

Mushendami, P., Manuel, V., Shifotoka, H., and Nakusera, F. (2017), Empirical analysis of the monetary approach to the balance of payment in Namibia, *International Review of Research in Emerging Markets and the Global Economy (IRREM)*, **3**(1), 1088-1104.

Mwai, C. (2015), The effect of selected macroeconomic variables on balance of payment in Kenya, *A Research Project Submitted in Partial Fulfilment of the Requirment for the Award of the Degree of Master of Science in Finance*, Nairobi, 1-67.

Odili, O. (2014), Exchange rate and balance of payment: An autoregressive distributed lag (ARDL) econometric investigation on Nigeria, *IOSR Journal of Economics and Finance*, **4**(6), 21-30.

Osisanwo, G. B., Maku, O. E., Ajike, E. O., and Egwuonwu, T. K. (2015), Growth effect of balance of payments and monetary policy in Nigeria (1980-2013): A time series analysis, *Global Journal of Management and Business Research: A Administration and Management*, **15**(8), 37-46.

Ponkratov, V., Karaev, A., Masterov, A., Gorlova, O., Sedova, M., and Shmigol, N. (2019), Productivity and economic growth by using business management based on the e-marketing: Evidence from developed and developing countries, 2000-2018, *Industrial Engineering and Management Systems*, **18**(3), 463-473.

Purwono, R., Mucha, K., and Mubin, M. K. (2018), The dynamics of Indonesia's current account deficit: Analysis of the impact of exchange rate volatility, *Journal of Asian Finance, Economics and Business*, **5**(2), 25-33.

Shafi, K., Hua, L., Idrees, Z., and Nazeer, A. (2015), Impact of exchange rate, inflation rate and interest rate on balance of payment: A study from India and Pakistan, *American Journal of Business, Economics and Management*, **3**(1), 9-13.

Sujianto, A. E. and Effendi, K. A. (2016), The contribution of the performance efficiency of Islamic commercial banks to economic growth: Evidence from Indonesia, *International Journal of Economic Perspectives*, **10**(4), 442-453.

Sujianto, A. E. (2018), Jakarta composite index, sharia stock index and rupiah exchange rate before and after the Indonesian presidential election 2014, *American Journal of Economics*, **8**(6), 254-262.

Sujianto, A. E. and Suryanto, T. (2018), Income differences, trade and institutions: Empirical evidence from low and middle-income countries, *Business and Economic Horizons*, **14**(2), 217-228.

Umoru, D. and Odjegba, O. P. (2013), Exchange rate misalignment and balance of payment adjustment in Nigeria, *European Scientific Journal*, **9**(13), 260-273.

Wulandari, D., Utomo, S. H., Narmaditya, B. S., and Kamaludin, M. (2019), Nexus between inflation and unemployment: Evidence from Indonesia, *Journal of Asian Finance, Economics and Business*, **6**(2), 269-275.

Assoc. Prof. Dr. **Agus Eko Sujianto** is a lecturer at Institut Agama Islam Negeri Tulungagung, Indonesia. He obtained his doctoral in economic education from Universitas Negeri Malang, Indonesia. His current research focuses on economic education and learning, macroeconomic, econometrics, entrepreneurship and cooperatives.

Macroeconomic Factors and Balance of Payment: Evidence from Indonesia

ORIGINALITY REPORT

15%	10%	12%	10%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	businessperspectives.org Internet Source	3%
2	journal.unnes.ac.id Internet Source	2%
3	Submitted to Universitas Sultan Ageng Tirtayasa Student Paper	1%
4	journals.scholarpublishing.org Internet Source	1%
5	Submitted to Multimedia University Student Paper	1%
6	Submitted to University of Mauritius Student Paper	1%
7	Submitted to University of Greenwich Student Paper	1%
8	Wynne Godley, Marc Lavoie. "Monetary Economics", Springer Science and Business Media LLC, 2007	1%

Publication

9	Submitted to KCA University Student Paper	1%
10	Submitted to University of Adelaide Student Paper	1%
11	Submitted to School of Business and Management ITB Student Paper	1%
12	Alya May Rachmawati, Dwi Wulandari, Bagus Shandy Narmaditya. "Financial Deepening and Income Inequality in Indonesia", Global Business Review, 2018 Publication	1%

Exclude quotes	Off	Exclude matches	< 1%
Exclude bibliography	On		