IJISET - International Journal of Innovative Science, Engineering & Technology, Vol. 8 Issue 5, May 2021
ISSN (Online) 2348 – 7968 | Impact Factor (2020) – 6.72
www.ijiset.com

The Effect of Interest Rate and Rupiah Exchange Rate on Economic Growth and Indonesian Export Value

Arditha Wahyu Waskita Raisaba [1], Ida Bagus Putu Purbadharmaja [2]

[1] Department of Economics, Udayana University, Denpasar, Bali, Indonesia

[2] Department of Economics, Udayana University, Denpasar, Bali, Indonesia

Abstract

International trade can be used as an engine for economic growth in a country. The purpose of this study is to analyze the effect of interest rates and exchange rates directly on Indonesia's economic growth. To analyze the effect of interest rates, exchange rates and economic growth directly on the value of Indonesian exports. And to analyze the role of economic growth in mediating the effect of interest rates and exchange rates on export values in Indonesia. The analysis technique used is path analysis. The software used is SPSS. The results showed that interest rates and exchange rates directly had a significant effect but had a negative relationship to Indonesia's economic growth. Interest rates directly have a significant effect but have a positive relationship to Indonesia's Export Value. Meanwhile, the exchange rate directly has a positive but insignificant effect on the export value of Indonesia. Indonesia's economic growth directly has a positive and significant effect on Indonesia's export value. And also economic growth mediates the effect of interest rates and exchange rates on the value of Indonesian exports.

Keywords: *Interest Rate, Exchange Rate, Economic Growth, Export Value*

1. Introduction

Some economists such as Adam Smith and David Ricardo stated that the presence of foreign trade can contribute to increasing the economic growth of a country. International trade is an export activity that greatly influences the economic situation in a country, one of which can increase a country's income. Indonesia's involvement in various collaborations aims to open opportunities for Indonesia in trade activities between countries (Juliantari, 2015). Economic development and globalization make a country interdependent and need one another in meeting the needs and marketing the country's superior products, in this case the countries of the world carry out the exchange of goods and services in the context of international trade (Budi Ramanda, 2013). The success of a country in increasing exports reflects an increase in competitiveness and a positive dynamic growth indicator in a country's entrepreneurship. Based on this, an increase in exports is a necessity that must be done by certain countries in order to make that country considered capable of competing. Exports will directly increase revenue in a country's income. The value of Indonesia's exports has fluctuated from time to time, due to changes in economic conditions experienced by Indonesia both domestically and globally.

Tambunan (in Pramono Hariadi, 2008) states that the main reason non-oil and gas exports get more attention than oil and gas exports is that Indonesia has entered the era of free trade such as the ASEAN Free Trade Area, and will soon enter the era of trade liberalization at the world level. , according to the agreement of the World Trade Organization. Indonesia, with its output from oil and gas and non-oil and gas commodities, becomes the foundation as a result of natural resources as a comparative advantage. Trading with other countries is likely to be profitable, that is, it can buy goods at a lower price and may be able to sell abroad at a relatively high price. Foreign trade often arises because of differences in the price of goods in various countries. According to the Keynesian theory, GDP is formed from four factors that positively influence it, these four factors are consumption, investment, government spending, and net exports. These four factors are again influenced by a variety of factors, among others are influenced by factors such as income levels, price levels, interest rates, inflation rates, money supply, exchange rates and interest rates of foreign countries.

The interest rate is the agreed price for the use of the money within a predetermined period of time. When interest rates are low, more funds will flow and economic growth will increase. Conversely, when the interest rate is high, the little funds that flow will result in low economic growth (Sundjaja and Barlian, 2003: 57). High interest rates will limit public consumption which is carried out on credit, which in turn will reduce borrowing by importers which causes the value and volume of imports to decrease. On the other hand, relatively low interest rates will encourage increased consumption which in turn will also increase the volume of imports (BI Report, 2018). The interest rate in Indonesia refers to the interest rate for Bank Indonesia Certificates, commonly known as the BI Rate. High interest rates can cause the cost of money to be expensive, this will weaken the competitiveness of exports in world markets so that it can discourage the business world from investing in the country, production will decline and economic growth will stagnate (Boediono, 1990: 3)

In carrying out international trade activities, especially exports, the reference for determining the level of commodity prices is the exchange rate or exchange rate. Exchange rate is the ratio between the currency price of a country with another country. So that when the currency value increases, it will provide benefits for the exporting country, and vice versa. This study uses the United States Dollar exchange rate, because the United States dollar exchange rate is an international standard currency exchange rate whose value is relatively stable and is a strong currency and can be easily traded and can be accepted by anyone as payment for transactions (Latief, 2001: 15). Based on the theory, if the foreign exchange rate increases against the domestic currency, this can increase exports and vice versa if the foreign exchange rate depreciates against the domestic currency, this can reduce exports (Sounders and Liliana, 2002).

In macroeconomic theory, the relationship between exports and the rate of economic growth or national income is an identity equation because exports and imports are part of the level of national income. The economic growth of a country is also influenced by, among others, international trade, investment, human resources, the money supply and interest rates. The calculation of Gross Domestic Product (GDP), one of which uses the expenditure approach, involves exports and imports in the calculation. Therefore, mathematically, exports and imports can affect the value of GDP, because with exports it can increase GDP, while imports can reduce GDP. This GDP can later be compared to see the high and low levels of a country's economic growth. On the other hand, exports and imports cannot be separated from the magnitude of the rupiah exchange rate against world currencies. Logically, a country can be motivated to export more when the country's currency exchange rate is low, and vice versa. This is because the income from the domestic currency obtained as a result of the low exchange rate is greater.

2. Literature Review

Febriyanti (2019)
In a study, Adam Smith stated that in theory the absolute superiority of the country to export goods in which the country has an absolute advantage over other countries. And vice versa in the theory of comparative advantage, Ricardo states that each country has an advantage that is relatively not absolute and the Heckscher-Ohlin theory states that the gifts of nature and the price of factors of production between countries are the main determinants of international trade.

Bustami (2013)
Which states that increasing exports is no longer just an option but is a necessity to support the economic growth of a country. With the increasing development of exports, trade relations between Indonesia and other countries, either directly or indirectly, have an impact on changes in a country's macro indicators.

Mankiw (2003)
Which explains the correlation between exchange rates and volume of international trade using the Mundell Fleming Model. This model assumes that the price level is fixed and shows the causes of short-run fluctuations in a small open economy with perfect capital mobility. This model shows that changes in the value of a currency will result in changes in exports and imports. If the exchange rate depreciates and the value of the domestic currency relative to the foreign currency decreases, the volume of exports will increase.

Sounders and Liliana (2002)
Which explains that when the value of the currency increases, it will be beneficial for the exporting country and vice versa. This result is in accordance with the theory which states that if the foreign exchange rate increases against the domestic currency, this can increase exports and vice versa if the foreign exchange rate depreciates against the domestic currency, then exports will decline.

Nabilla Mardiana Pratiwi (2015)
Which explains that the BI rate (Bank Indonesia Interest Rate) has a positive and significant direct effect on economic growth. If the BI rate falls, the Indonesian economy will increase, and vice versa, if the BI rate increases, economic growth in Indonesia will decrease, because the BI rate will affect the credit interest rate and deposit interest rate, so that the increase or decrease in the BI Rate will affect economic growth.

3. Problem Formulation

The problem formulation of this study is:
a) Interest rates have a positive effect on Indonesia's economic growth
b) Interest rates have a negative effect on Indonesia's export value
c) Exchange Rate has a negative effect on Indonesia's Economic Growth
d) Exchange Rate has a positive effect on Indonesian Export Value.
e) The value of exports has a positive effect on Indonesia's economic growth

4. Research Methodology

This type of research uses an associative quantitative approach using secondary data sources. The secondary data is in the form of data on interest rates, exchange rates, economic growth, and export value for the period 2001-2020. Secondary data in this study were obtained from the Central Statistics Agency (BPS), Bank Indonesia (BI), the Ministry of Trade and Worldbank. Associative research aims to determine the influence or relationship between variables. This research was conducted to determine the relationship of several variables, such as interest rates and exchange rates to Indonesia's economic growth and export value by using path analysis. The research location was conducted in Bali Province.

5. Analysis Result

1) Direct Effect of Interest Rates and Exchange Rates on Indonesia's Economic Growth
Sub-structural regression equation I:

The purpose of the test is to determine the direct effect of interest rates and exchange rates on Indonesia's economic growth. The results of the regression equation are shown as follows:

Y_1 = -0,693X_1 -0,700X_2 + e_1
Sb = (0,099) (0,190) R^2 = 0,381
T = (-2.800) (-2.828) F = 4,927
Sig = (0,013) (0,012)

Information:
X1 = interest rate
X2 = exchange rate
Y1 = economic growth

2) Direct Effect of Interest Rates, Exchange Rates and Economic Growth on Indonesian Export Value
Sub-structural regression equation II:

The purpose of the test is to determine the direct effect of interest rates, exchange rates and economic growth on the value of Indonesian exports. The results of the regression equation are shown as follows:

Y_2 = -0,506X_1 + 0,299X_2 + 0,509Y_1 + e_2
Sb = (0,199) (0,384) (0,411) R^2 = 0,843
t = (-3.220) (1.897) (3.914) F = 26,798
sig = (0,006) (0,077) (0,001)

Information:
X1 = interest rate
X2 = exchange rate
Y1 = economic growth
Y2 = export value

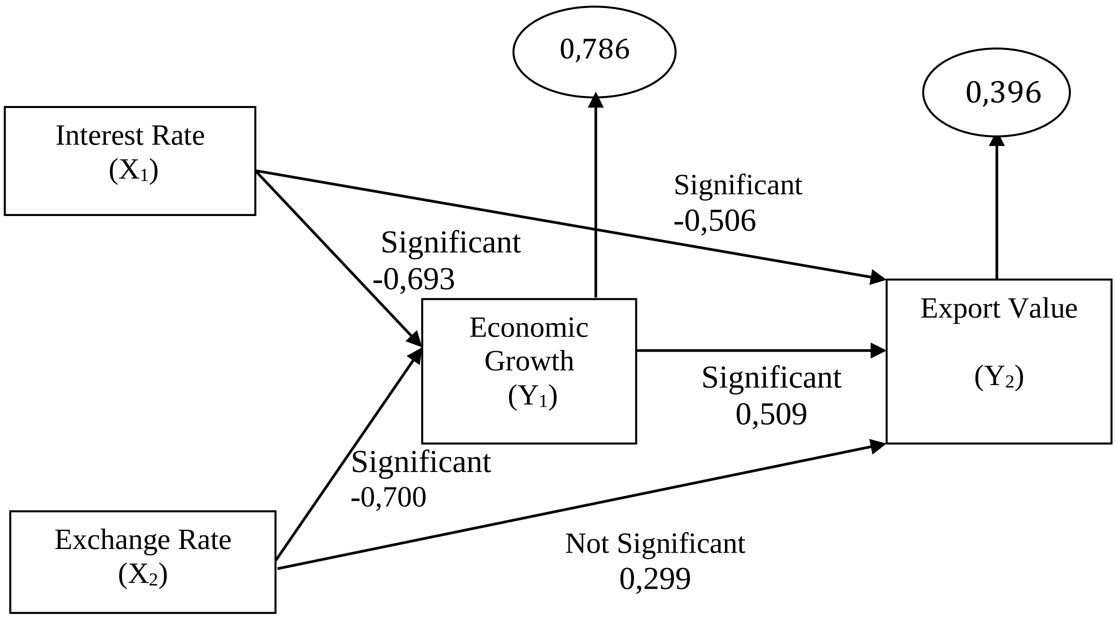

Figure 1. The Coefficient of Relationship Between Variables

3) Total Determination Coefficient Value

Based on the calculation of the total coefficient of determination, it is found that the diversity of data that can be explained by the model is 90.4 percent or in other words, the information contained in the data of 90.4 percent can be explained by the model, while 9.6 percent is explained by other variables outside the model.

4) Hypothesis Testing Results

1. Test the hypothesis of the direct effect of the Interest Rate (X1) on Economic Growth (Y1)

Based on the test results, it is obtained that the value of standardized coefficients Beta is -0.693 with sig 0.013 <0.05, thus it can be concluded that interest rates have a negative and significant effect on Indonesia's economic growth. Keynes has the view that, the interest rate is a monetary phenomenon. That is, the interest rate is determined by the supply and demand for money. Money will affect economic activity (GNP), as long as this money affects the interest rate. Changes in the interest rate will then affect the desire to invest, thereby affecting GNP. In the research of Palupi Basundari, et al. (2016), the BI rate also negatively and significantly affects economic growth in the long run, which means that if the Bank Indonesia interest rate decreases, the Indonesian economy will increase, and vice versa, if the BI Rate increases, economic growth in Indonesia will decrease, because the BI Rate will affect both the credit interest rate and the deposit interest rate, so that an increase or decrease in the BI Rate will affect economic growth. This is also in line with research conducted by Frisyelia Renshy Tiwa, et al (2016), which states that interest rates have a negative and significant effect on Indonesia's economic growth in 2005-2014.

2. Direct Effect of Exchange Rate (X2) on Economic Growth (Y1)

Based on the calculation results, the value of standardized coefficients Beta is -0.700 with sig 0.012 <0.05, thus it can be concluded that the Exchange Rate has a negative and significant effect on Economic Growth. According to the Mundell-Fleming theory, there is a negative influence between the exchange rate and economic growth. the higher the exchange rate, the lower the net exports (the difference between exports and imports). This decline will have an impact on the amount of output that is decreasing and will cause GDP (economic growth) to decline (Mankiw 2006: 306-307). When the relative price of foreign goods increases, consumers will move from consuming foreign goods to consuming domestic goods because the price of foreign goods or imported goods becomes expensive. This is in line with research conducted by Widia Ayu Lastri and Ali Anis (2020), which states that the exchange rate has a significant negative effect on Indonesia's economic growth in the long run.

3. Direct Effect of Interest Rates (X1) on Indonesian Export Value (Y2)

Based on the calculation results, the value of standardized coefficients Beta is -0.506 with sig 0.006 <0.05, thus it can be concluded that interest rates have a negative and significant effect on the value of Indonesian exports. Increased lending rates mean less working capital. This causes the amount of production to decrease, which in turn affects the decline in export volume, so that it will automatically affect the smaller export value, meaning that credit interest rates and export volume have a negative relationship (Bank Indonesia, 2005: 32). This research is in line with research conducted by Suprianto, et al. (2017), which states that interest rates have a negative and significant effect on Indonesian agricultural exports to the United States. The results of this study are in accordance with the theory which states that the size of the working capital that exporters want to obtain depends on the credit interest rate, the high credit interest rate causes entrepreneurs to reduce the amount of loans, so that the amount of production will decrease, which will then affect the value of exports (Edward, 2001).

4. Direct Effect of Exchange Rate (X2) on Indonesian Export Value (Y2)

Based on the calculation results, the value of standardized coefficients Beta is 0.299 with sig 0.077> 0.05, thus it can be concluded that the exchange rate has a positive and insignificant effect on the value of Indonesian exports. This shows that if there is currency depreciation or appreciation, it will not affect export activities. When there is an appreciation of the rupiah exchange rate against the dollar, there will be a decline in exports (negative effect). This happens because if the Indonesian currency strengthens (appreciation), the price of domestic goods will become expensive for other countries so that the people of other countries do not want to import Indonesian goods so that exports will decline. Meanwhile, when there is a depreciation (weakening) of the rupiah exchange rate against the dollar, there will be an increase in exports. So, this research is not in line with Mundell Fleming's model proposed by Mankiw, in which depreciation or appreciation of currency values should have an effect on Export Value. According to Boediono (2001), if the value of the rupiah depreciates against foreign currencies, it will have an impact on the value of exports which increases while the value of imports will decrease (if the supply of exports and demand for imports is elastic enough). If the depreciating exchange rate of the domestic market looks attractive on the international market, the prices of domestic goods tend to look cheaper so that the value of exports increases. The results of this study are in line with the results of research conducted by Kharisma Putri (2020) that the exchange rate has no effect on exports.

5. Direct Effect of Economic Growth (Y1) on Indonesian Export Value (Y2)

Based on the calculation results, the value of standardized coefficients Beta is 0.509 with sig 0.001 <0.05, thus it can be concluded that economic growth has a positive and significant effect on Indonesia's export value. Sukirno (2002) states that the determining factor for exports is the ability of the country to produce goods that can later compete in foreign markets. So, with an increase in the GDP of a country, the amount of production produced will also increase. So that the value of Indonesian exports will also increase, and vice versa. This is in line with research conducted by Ayu Agustina Pratiwi (2018), which states that the GDP variable has a significant effect on exports in Indonesia during the research period 2006.I - 2016.IV. If a country's national income (GDP) increases, it means that the welfare of its people also increases so that this will result in the ability of the community to carry out production which can eventually be exported to other countries. Research conducted by Widhi Ari and Meydianawathi (2014) also shows that the GDP of the United States of America has a positive and significant effect on exports of Indonesian wood carving crafts to the United States in 1996-2012. This is in accordance with Keynes's theory which states that income affects the size of imports. If the GDP of the importing country increases, the purchasing power of exported goods will also increase. Conversely, if the GDP of the importing country decreases, the purchasing power of export products will also decrease. The results of this study are also in accordance with the classical theory put forward by Adam Smith. It is argued that the prosperity of a country is determined by the amount of GDP and the contribution of foreign trade to the formation of the country's GDP

5) Sobel Test Result

1. Testing the strength of the indirect effect of the Interest Rate variable (X1) on Indonesia's Export Value (Y2) through Economic Growth (Y1).

Based on the calculation results, the calculated Z value is 3.684> 1.96, which means that economic growth (Y1) mediates the effect of interest rates (X1) on the value of exports (Y2).

2. Testing the strength of the indirect effect of the exchange rate variable (X2) on Indonesia's Export Value (Y2) through Economic Growth (Y1)

Based on the calculation results, the calculated Z value is 4.293> 1.96, which means that economic growth (Y1) mediates the effect of the exchange rate (X2) on the value of exports (Y2).

In accordance with the role of mediation according to (Baron and Kenny: 1986), fully mediated will occur if the effect of the mediating variable on the dependent variable is significant, while the effect of the independent variable on the mediator is not significant. Conversely, if the influence of the dependent variable on the mediating variable is significant and the effect of the independent variable on the mediating variable is also significant, it can be said that the findings of this study support the effect of partially mediated mediation. Based on the results of this study, it can be concluded that economic growth is strong enough to mediate the influence of interest rates and exchange rates on the value of Indonesian exports

6. Conclusion

Based on the research results that have been described, it can be concluded as follows: Interest rates and exchange rates directly have a significant effect but have a negative relationship to Indonesia's economic growth. Interest rates directly have a significant effect and have a negative relationship to Indonesia's Export Value. Meanwhile, the exchange rate directly has a positive but insignificant effect on the export value of Indonesia. Indonesia's economic growth directly has a positive and significant effect on Indonesia's export value. Economic growth mediates partially (partially mediated) the influence of interest rates and exchange rates on the value of Indonesian exports. Based on the results of the analysis and conclusions, several suggestions can be given such as: It is hoped that the government can improve the Indonesian economy by increasing exports and reducing imports, by expanding export destination countries and increasing the quality of export products. In addition, efforts to boost economic growth can be done by diversifying exports and expanding export destination markets, thus exports can be the main driver of Indonesia's economic growth. The government and the monetary authority (Bank Indonesia) are expected to cooperate well in making policies so that government policies can boost the economy. Meanwhile, the Central Bank's policy is to be able to reduce the BI rate so that the credit interest rate will also decrease, so that the public will borrow more credit from banks to invest in production, so that the export value will automatically increase. The government together with BI should also monitor the movement of the exchange rate, because an exchange rate that is too high can result in an increase in the prices of goods, especially imported goods. Maintaining the stability of market players in the foreign exchange market by controlling the exchange rate is also important so that the exchange rate of the rupiah against the currencies of other countries remains stable. Further researchers are advised to use other methods that are better in line with the development of economics in order to get better results, and it would be even better to use factors other than interest rates and exchange rates to determine their effects on economic growth and Indonesia's export value. The public is advised to use domestic products and have a high entrepreneurial spirit in increasing creativity and new competitive innovations so as to increase exports in Indonesia in the current era of free trade.

7. References

1. Bank Indonesia Report 2018. Tantangan dan Gambaran Perekonomian Indonesia.
2. Basundari, Palupi ; Zainuri dan Herman Cahyo Diartho. 2016. Pengaruh Bi Rate, Inflasi Dan Nilai Tukar Terhadap Pertumbuhan Ekonomi Di Indonesia Periode 2005.1-2014.4 (Effect Pf Bi Rate, Inflation And Exchange Rate To Economic Growth In Indonesia Period 2005.1-2014.4). Economis Department, Jember University, Indonesia
3. Boediono. 1992. Ekonomi Internasional Seri Sinopsis Pengantar Ilmu Ekonomi No.3 Edisi: Kedua. Yogyakarta: BPFE-UGM
4. Bustami, Budi Ramanda. 2013. Analisis Daya Saing Produk Ekspor Provinsi Sumatra Utara. Jurnal Ekonomi dan Keuangan, Vol. No.2
5. Edward. 2001. The Determinants of Bank Interest Rate. Journal of Internasional Money and Finance, Volume 5.
6. Febriyanti, Dea Fitri. 2019. Effect Of Export And Import Of Gross Domestic Product In Indonesia 2008-2017. Jurnal Ecoplan Vol. 2 No. 1, pp. 10-20
7. Juliantari, Desak Putu Emmei : Nyoman Djinar Setiawina. 2015. Analisis Pengaruh Kurs Dollar Amerika Serikat, Inflasi Dan Penanaman Modal Asing Terhadap Nilai Ekspor Makanan Dan Minuman Di Indonesia. E-Jurnal Ekonomi Pembangunan Universitas Udayana Vol.4, No.12
8. Kharisma Putri, Vega Sofie. 2020. Pengaruh Nilai Tukar Dan Produk Domestik Bruto Terhadap Ekspor Textile Dengan Inflasi Sebagai Variabel Intervening. Business and Economics Conference in Utilization of Modern Technology Magelang
9. Lastri, Widia Ayu ; Ali Anis. 2020. Pengaruh E-Commerce, Inflasi, Dan Nilai Tukar Terhadap Pertumbuhan Ekonomi Indonesia. Jurnal Kajian Ekonomi dan Pembangunan, Vol. 2, No. 1
10. Latief, Doechak, 2001. Pembangunan Ekonomi dan Kebijakan Ekonomi Global, Surakarta : Universitas Muhammadiyah
11. Mankiw, N. Gregory. 2007. Makro Ekonomi Edisi keenam. Jakarta: Erlangga.
12. Pramono Hariadi. 2008. Faktor – factor Yang Mempengaruhi Kinerja Ekspor Non Migas Indonesia. Jurnal Ventura, 11 (3).
13. Pratiwi, Ayu Agustina. 2018. Analisis Pengaruh Kurs Dollar AS, PDB Dan Inflasi Terhadap Ekspor Indonesia Tahun 2006.I – 2016.IV. E-Jurnal Ekonomi Dan Bisnis Universitas Muhammadiyah Surakarta.
14. Pratiwi, Nabilla Mardiana ; AR, Moch.Dzulkirom dan Azizah, Devi Farah. 2015. Pengaruh Inflasi, Tingkat Suku Bunga Sbi, Dan Nilai Tukar Terhadap Penanaman Modal Asing Dan Pertumbuhan Ekonomi Di Indonesia (Tahun 2004 Sampai Dengan Tahun 2013). Jurnal Administrasi Bisnis (JAB), Vol. 26 No. 2
15. Reuben, M Baron. and David, A.K, 1986. The moderator-mediator distinctin in social psychological. Journal of peronality and social psychology, Vol. 51, No. 6, pp. 1173-1182
16. Sounders, Anthony and Liliana Schumacher. 2002. Analysis of the Dollar Exchange Rate. Journal of Development Economic. Vol. 5
17. Sukirno, S. (2012). Makroekonomi Teori Pengantar. Jakarta: Rajagrafindo Persada
18. Sundjaja, Ridwan dan Barlian, Inge. 2003. Manajemen Keuangan 2 Edisi Keempat.Yogyakarta:BPFE Yogyakarta

19. Suprianto, Syapsan dan Darmayuda. 2014. Analisis Pengaruh Kurs Dan Suku Bunga Bi Rate Terhadap Ekspor Pertanian Indonesia Ke Amerika Serikat. JOM Fekon, Vol. 4 No. 1

20. Tiwa, Frisyelia Renshy,Vekie Rumate dan Avriano Tenda. 2016. Pengaruh Investasi, Suku Bunga Sertifikat Bank Indonesia (Sbi) Dan Jumlah Uang Beredar Terhadap Pertumbuhan Ekonomi Indonesia Tahun 2005-2014. Jurnal Berkala Ilmiah Efisiensi Vol.16, No. 02

21. Widhi Ari, Ni Nyoman, Luh Gede Meydianawathi. 2014. Analisis Beberapa Faktor yang Mempengaruhi Ekspor Kerajinan Ukiran Kayu Indonesia ke Amerika Serikat Tahun 1996-2012. E-Jurnal Ekonomi Pembangunan Universitas Udayana Vol. 3, No. 6