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The Effect of Export Import, Inflation, Interest Rates, and Exchange Rates against Indonesia's Economic Growth

Sutarjo
Borobudur University, Jakarta, Indonesia
Corresponding author email: sutarjo@unis.ac.id

Wahyu Murti
Borobudur University, Jakarta, Indonesia

Sugiyanto Saleh
Borobudur University, Jakarta, Indonesia

Abstract---*The research aims to know (a). Effect of export and import (b). Inflation (c). Interest rate (d). Exchange rate to Indonesia's economic growth. The research method uses a quantitative approach, in explaining the relationship between the variables studied. Data collection techniques through questionnaires, interviews, tests, observations, inventories, rating scales, documentation studies. The results of the study can be concluded simultaneously, namely: (1). import export variable, (b). inflation variable, (c). interest rate variable (d). Exchange rate variables. On Indonesia's foreign exchange reserves and its implications for simultaneous economic growth. Then partially all variables have a positive and significant effect on foreign exchange reserves except for the investment variable.*
Keywords---*economic growth, exchange rate, export-import, inflation, interest rate.*

Introduction

Real sector investment is the placement of funds or capital in physically visible assets. Investments in property, gold and precious metals are included as real sector investments. In addition, investment also includes investment in businesses engaged in the real sector. Financial sector investment is an investment or investment to gain future profits in the form of securities or securities (Sack & Wieland, 2000; Rudebusch, 1995). So investment in the financial sector cannot be seen directly from the physical value of its assets. Other examples of financial investment or investment in the financial sector include bonds, mutual funds, stocks, and other financial instruments. This type of investment includes investment in the money market and investment in the capital market (Samuelson & Nordhaus, 2010).

The decline in the rupiah exchange rate reflects the declining demand of the international community for the rupiah currency due to the declining role of the national economy or the increasing demand for US$ foreign currency by the public which is used as an international payment instrument. The performance of money, especially the foreign market, is measured by the rupiah exchange rate, especially the US dollar. The stronger the rupiah exchange rate until a certain time limit means that the performance in the money market shows more improvement. The weakening of the domestic exchange rate against foreign currencies due to the impact of the trade war between the United States and China has a negative impact on the equity market because the equity market becomes unattractive.

Observation of currency values or exchange rates is very important considering that currency exchange rates play a very important role in the formation of profits for the company (Todaro & Smith, 2006). In addition, economic growth is one of the most important indicators in assessing the performance of an economy, especially for analyzing the results of economic development that have been carried out by a country or region (Ramos, 2001; Chen, 2006).

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The economy is said to experience growth if the production of goods and services increases from the previous year. Thus, economic growth shows the extent to which economic activity can generate additional income or public welfare in a certain period. The economic growth of a country or a region that continues to show an increase, then, it illustrates that the economy of the country or region is developing well (Dilliana et al., 2019; Mentari & Artini, 2019).

One of the important sources of funding used by Indonesia to carry out national development is foreign exchange (Maharani & Isnowati, 2014). Foreign exchange reserves can be an important indicator to see the extent to which a country can conduct international trade and show the strength and weakness of a country's economic fundamentals. Indonesia itself is deemed to be still unable to preserve its foreign exchange, causing Indonesia to be unable to make international payments and the exchange rate stabilization resulting in a balance of payments deficit and a fall in the rupiah exchange rate (Vilasuso, 2002; Zhao, 2010).

International trade plays an important role in meeting the needs of countries in the world. With the occurrence of international trade, foreign exchange is needed. According to Tambunan (2011), international trade is defined as trade between or across countries, which includes exports and imports. International trade is important for the economy of every country to prosper its people. Has an important role because a country cannot meet all domestic needs. With international trade, every country in the world can exchange resources owned by each country, with the aim that there is no excess or lack of resources in each country in the world (Nazir, 2005; Kuncoro, 2011). Cooperation between countries carried out by Indonesia began in the New Order era which was marked by trade between countries. Indonesia is one of the countries that carry out international trade due to the limited resources owned by Indonesia

The decline in foreign exchange reserves in 2013 was 99,387 billion USD from the previous year in 2012 of 112,781 billion USD. This decline can be seen from two sides, namely, from the external side, the economic slowdown in the euro area which will reduce demand and commodity prices, and from the internal side, the government's reluctance to suppress fuel subsidies has hampered infrastructure development so that logistics costs swell. The crisis in the Euro area, which has not yet been resolved, has resulted in a decline in export demand and falling commodity prices, thereby reducing export volumes (Jogiyanto, 2010; Kewal, 2012).

The downturn in Indonesia due to the tapering of the USA did have a significant impact on the Indonesian economy. In 2013 Indonesia became the country with the worst economy in Asia and number 2 in the world after Argentina and the Peso. Steps that must be taken by the government to encourage high economic growth are to participate in seeking new sources of financing for development both from within the country and abroad. Financing originating from abroad can be in the form of foreign investment and foreign debt (Sukirno, 2011; Samsul, 2006; Suryana, 2000).

Method

The method with a quantitative descriptive-analytical statistic approach describes the data that has been collected and analyzed to conclude (Sugiyono, 2018). Data collection techniques were used in the form of questionnaires distributed to volunteers, interviews were conducted in a planned manner, conducting tests and validations, observing research fields, and conducting documentation studies to complete data in the field. The research uses three variables as objects, namely as follows:

1) Independent Variable (X)
2) Variable export, import
3) Inflation Variable
4) Interest Rate Variable

Result and Discussion

With the acquisition of data and sources of economic growth, development priority sectors can be determined. Indonesia's economic growth data for the period 1990 – 2019 is presented in the following table:

Table 1
Indonesia's economic growth 1990-2019

YEAR	PDB %	YEAR	PDB %	YEAR	PDB %
1990	7,24	2000	4,92	2010	6,22
1991	6,95	2001	3,64	2011	6,17
1992	6,46	2002	4,5	2012	6,03
1993	6,5	2003	4,78	2013	5,56
1994	7,54	2004	5,03	2014	5,02
1995	8,22	2005	5,69	2015	4,79
1996	7,82	2006	5,5	2016	5,02
1997	4,7	2007	6,35	2017	5,07
1998	-13,13	2008	6,01	2018	5,06
1999	0,79	2009	4,63	2019	5,06

Source: databoks.katadata.co.id and BPS, 2020 processed

Indonesia's highest GDP growth occurred in 1995, reaching 8.22%. However, in 1998, the Indonesian economy experienced contraction or negative growth, during the Asian financial crisis. The crisis that was accompanied by riots throughout the country caused the Indonesian economy to experience a very deep contraction of up to -13.13% and a very limited growth of 0.79% in 1999.

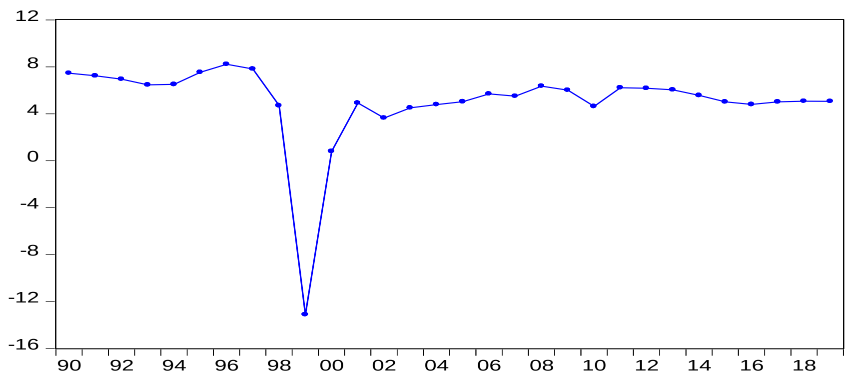

Figure 1. Graph of economic growth

There is Economic Growth 1990-2019, it can be seen that Indonesia's economic growth looks flat and even experienced a contraction in 1998, the average economic growth during the 1990-2019 period was 5.02% with the highest growth occurring in 1995 at 8.22% and the lowest occurring in the crisis period in 1998 was -13.13%. The position of foreign exchange reserves must be balanced with actual payments, foreign exchange reserves record all notes that must be paid. In Indonesia's foreign exchange reserves for the period 1990 – 2019 in the following table:

Table 2
Indonesia's foreign exchange reserves

No	Year	Foreign Exchange Reserves (Million US$)	Growth (%)
1.	1990	8.661,00	
2.	1991	9.868,00	13,94
3.	1992	11.611,00	17,66
4.	1993	12.352,00	6,38
5.	1994	13.158,00	6,53
6.	1995	14.674,00	11,52
7.	1996	19.125,00	30,33
8.	1997	21.418,00	11,99

No	Year	Foreign Exchange Reserves (Million US$)	Growth (%)
9.	1998	23.762,00	10,94
10.	1999	27.054,00	13,85
11.	2000	29.394,00	8,65
12.	2001	28.004,00	- 4,73
13.	2002	32.039,00	14,41
14.	2003	36.296,00	13,29
15.	2004	36.320,00	0,07
16.	2005	34.724,00	- 4,39
17.	2006	42.586,00	22,64
18.	2007	56.920,00	33,66
19.	2008	51.639,00	- 9,28
20.	2009	66.105,00	28,01
21.	2010	96.207,00	45,54
22.	2011	110.123,00	14,46
23.	2012	112.781,00	2,41
24.	2013	99.387,00	- 11,88
25.	2014	111.862,00	12,55
26.	2015	105.931,00	- 5,30
27.	2016	116.362,00	9,85
28.	2017	130.196,38	11,89
29.	2018	120.654,27	- 7,33
30.	2019	129.183,00	7,07

Source: BPS 2020, processed

There was a growth in Indonesia's foreign exchange reserves in 1990 - 2019 showing fluctuations in growth. The fluctuation in the achievement of foreign exchange reserves means the instability of the Indonesian economy, from the data above the highest achievement, occurred in 2010 which reached 45.54% and the lowest occurred in 2013 which was -11.88%. Furthermore, when viewed from the position of foreign exchange reserves in 2019, it showed an increase of 7.07% where from the previous year the position of foreign exchange reserves showed a figure of US$ 120,654.27 to US$129,183.00.

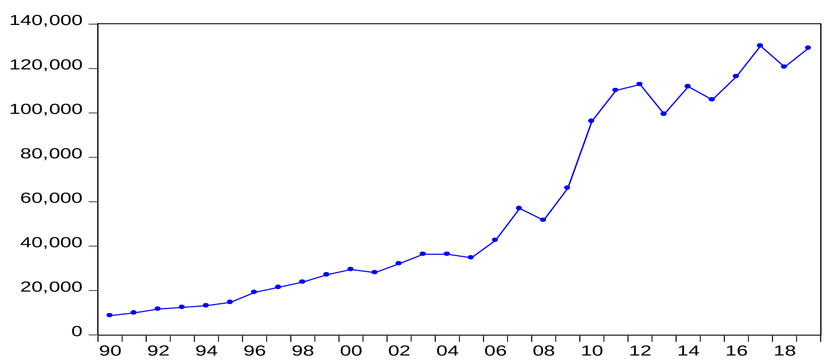

Figure 2. Foreign exchange recommendations

There is a graph of the growth of foreign exchange reserves for the period 1990-2019 which continues to increase and the peak of the increase occurred in 2017 of 130,196.38 million US$. Foreign exchange reserves are foreign currency deposits stored in several reserve currencies that can be used as an important indicator of the strength of a country in international trade and are also an external asset of Bank Indonesia as the monetary authority which has a role in financing the balance of payments imbalances, intervene in the market to maintain the stability of the exchange rate, and to maintain the resilience of the Indonesian economy (Gujarati, 2006; Ghozali, 2016). The high positive values of these components indicate an increase in economic growth. In this study, export data were obtained from Bank Indonesia. The following is presented Indonesia's export data from 1990 to 2019.

Table 3
Indonesian export data

No	Year	Export	Growth (%)
1.	1990	25.675,00	
2.	1991	29.142,00	13,50
3.	1992	33.967,00	16,56
4.	1993	36.823,00	8,41
5.	1994	40.053,30	8,77
6.	1995	45.418,20	13,39
7.	1996	49.814,70	9,68
8.	1997	53.443,60	7,28
9.	1998	48.847,60	- 8,60
10.	1999	48.665,50	- 0,37
11.	2000	62.123,95	27,66
12.	2001	56.323,14	- 9,34
13.	2002	57.105,80	1,39
14.	2003	61.034,50	6,88
15.	2004	71.584,60	17,29
16.	2005	85.659,90	19,66
17.	2006	100.798,60	17,67
18.	2007	114.100,96	13,20
19.	2008	137.020,40	20,09
20.	2009	116.510,00	- 14,97
21.	2010	157.779,00	35,42
22.	2011	203.496,60	28,98
23.	2012	190.031,80	- 6,62
24.	2013	182.551,90	- 3,94
25.	2014	176.292,69	- 3,43
26.	2015	150.393,30	- 14,69
27.	2016	144.489,72	- 3,93
28.	2017	168.828,18	16,84
29.	2018	180.012,70	6,62
30.	2019	167.497,00	- 6,95

Source: Bank Indonesia 2020, processed

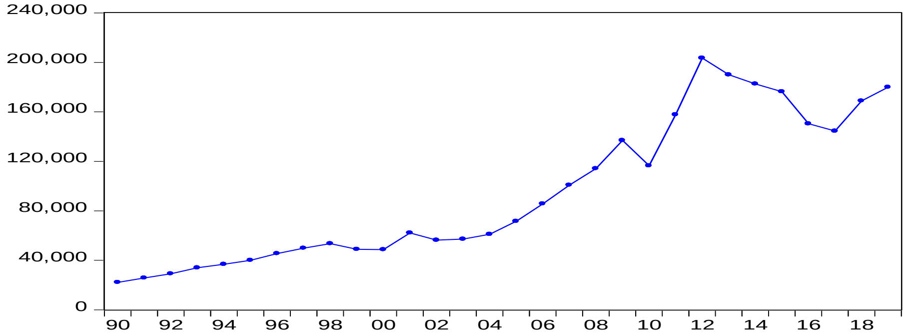

Figure 3. Indonesian export chart 1990-2019

From Figure 3. above, it can be seen that the development of Indonesia's exports from 1990 to 2019, Indonesia's foreign trade reached the highest value in 2011 of 203,496.60. Indonesia's import data for the period 1990-2019 sourced from Bank Indonesia are presented in the following table:

Table 4
Indonesian import data

No	Year	Import	Growth (%)
1.	1990	21.837,00	25.675,00
2.	1991	25.869,00	29.142,00
3.	1992	27.280,00	33.967,00
4.	1993	28.327,80	36.823,00
5.	1994	31.988,60	40.053,30
6.	1995	40.654,10	45.418,20
7.	1996	42.928,60	49.814,70
8.	1997	41.679,80	53.443,60
9.	1998	27.336,90	48.847,60
10.	1999	24.003,30	48.665,50
11.	2000	33.514,80	62.123,95
12.	2001	30.962,10	56.323,14
13.	2002	31.288,90	57.105,80
14.	2003	32.550,70	61.034,50
15.	2004	46.524,50	71.584,60
16.	2005	57.700,90	85.659,90
17.	2006	61.065,50	100.798,60
18.	2007	74.473,40	114.100,96
19.	2008	129.197,30	137.020,40
20.	2009	96.829,20	116.510,00
21.	2010	135.663,30	157.779,00
22.	2011	177.435,70	203.496,60
23.	2012	191.691,00	190.031,80
24.	2013	186.628,70	182.551,90
25.	2014	178.178,80	176.292,69
26.	2015	142.694,50	150.393,30
27.	2016	135.652,80	144.489,72
28.	2017	156.985,50	168.828,18
29.	2018	188.711,10	180.012,70
30.	2019	170.727,40	167.497,00

Source: BI, 2020

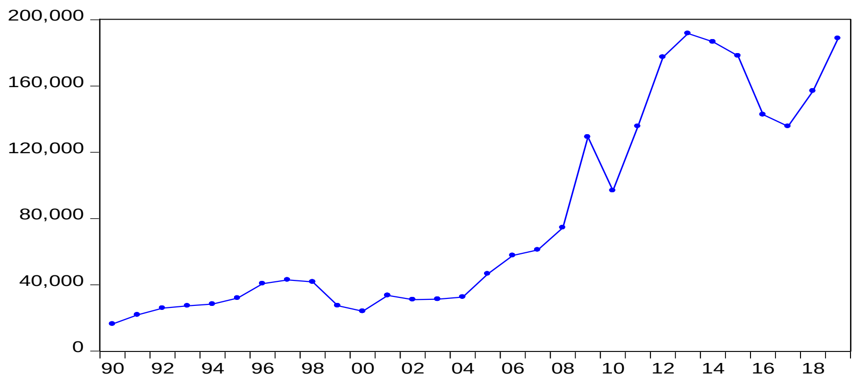

Figure 4. Graph of Indonesian Imports 1990 - 2019

Indonesia's inflation data in this study during the period 1990-2019 can be seen in the following table:

Table 5
Indonesia's inflation data 1990-2019

Year	Inflation (%)	Year	Inflation (%)
1990	9,53	2005	17,11
1991	9,52	2006	6,60
1992	4,94	2007	6,59
1993	9,77	2008	11,06
1994	9,24	2009	2,78
1995	8,60	2010	6,96
1996	6,50	2011	3,79
1997	11,10	2012	4,30
1998	77,60	2013	8,38
1999	2,00	2014	8,36
2000	9,40	2015	3,35
2001	12,55	2016	3,02
2002	10,03	2017	3,61
2003	5,16	2018	3,13
2004	6,40	2019	2,72

Source: Bank Indonesia, 2020

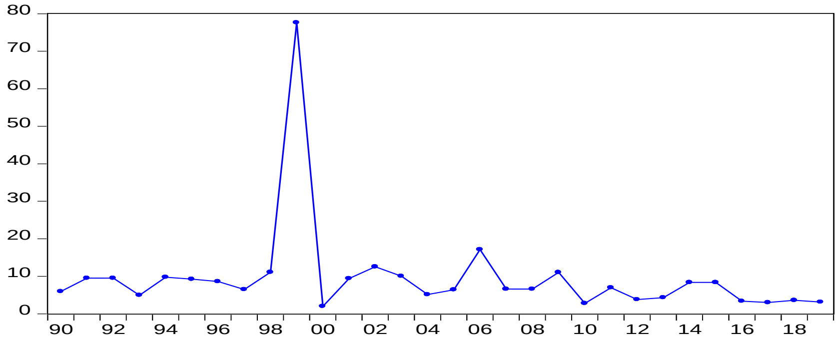

Figure 5. Inflation chart

There is a higher level and volatility of inflation in Indonesia, namely during the period 1990-2014 when compared to inflation in other developing countries with an average of above 3-5% and only in 2015 the inflation rate in Indonesia can be said to be well controlled at around below 5%. The data of this research is sourced from bi.go.id, the period 1990-2019 is presented in the following table:

Table 6
SBI Data for the Period 1990-2020

Year	SBI	Year	SBI	Year	SBI
1990	17,87	2000	14,53	2010	6,80
1991	17,05	2001	17,62	2011	6,00
1992	17,88	2002	13,02	2012	5,75
1993	13,69	2003	8,31	2013	7,50
1994	12,70	2004	7,43	2014	7,75
1995	13,96	2005	12,75	2015	7,50
1996	12,88	2006	9,75	2016	6,25
1997	22,00	2007	7,83	2017	5,75
1998	58,40	2008	10,83	2018	6,75
1999	12,51	2009	6,46	2019	5,00

Source: bi.go.id, 2020 processed

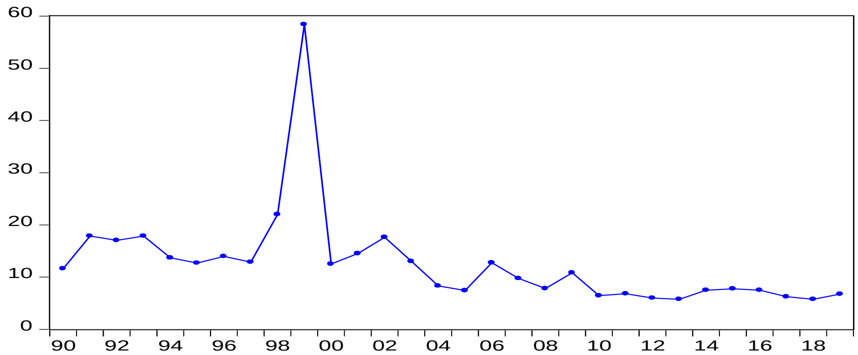

Figure 6. SBI interest rates 1990 – 2001

The graph appears to be constant except during the 1997-1998 monetary crisis where there was a sharp decline, but starting in 2001 the SBI tended to continue to rise, this caused banks to be more interested in investing their funds for Bank Indonesia Certificates, amounting to Rp. 81.50 billion in January 2001. An increase in the SBI interest rate will automatically lead to an increase in the interest rate for funds to attract people to invest their funds in the Bank (Agustina, 2014; Bodie et al., 2014). The policy of the state to officially raise the exchange rate of its currency against foreign currencies is called revaluation. However, if on the contrary, the government's policy of lowering the exchange rate against foreign currencies is called devaluation. The exchange rate data in this study comes from

Table 7
Exchange rate data for the period 1990-2019

Year	Exchange rate	Year	Exchange rate	Year	Exchange rate
1990	1.843	2000	9.595	2010	8.991
1991	1.950	2001	10.400	2011	9.068
1992	2.030	2002	8.940	2012	9.670
1993	2.087	2003	8.465	2013	12.189
1994	2.161	2004	9.290	2014	12.440
1995	2.249	2005	9.830	2015	13.795
1996	2.342	2006	9.020	2016	13.436
1997	2.909	2007	9.419	2017	13.548
1998	10.014	2008	10.950	2018	14.481
1999	7.855	2009	9.400	2019	13.882

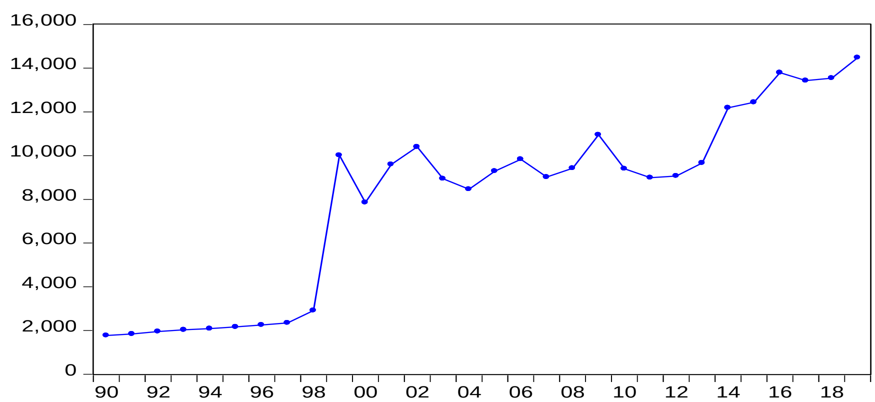

Figure 7. Graphic course

In the graph of the development of the rupiah exchange rate from 1990 - 2019, it is getting weaker or depreciating. In 1990 the exchange rate of the Rupiah against the USD was Rp. 1,843/USD, while in 1999 the exchange rate of the rupiah against the USD decreased by Rp. 7.855/USD. In the next 10 years in 2011, the rupiah depreciated, namely

Rp. 9,400/USD, and in 2019 the Rupiah depreciated to Rp 13,882/USD. The fluctuating exchange rate from 1990 – 2019 was influenced by many factors, ranging from export-import, inflation rates, interest rates, real income to government policies that has a specific purpose in devaluing or revaluing the exchange rate (Kasahara & Lapham, 2013; Sharma & Mishra, 2015). In every investment decision making, the risk is an important factor to consider, because the size of the risk contained in an investment alternative will affect the expected income. The following is a table of Indonesian investment data for the period 1990-2019 sourced from NWSI.

Table 8
Investment data for the period 1990-2019

Year	Investment	Year	Investment	Year	Investment
1990	2842,41	2000	48014,08	2010	40492,58
1991	2880,74	2001	28740,38	2011	51376,68
1992	3539,07	2002	14977,4	2012	78740,63
1993	9024,98	2003	19462,55	2013	98136,96
1994	21034,55	2004	12647,81	2014	133831,47
1995	24469,72	2005	18395,42	2015	146594,43
1996	16458,81	2006	34376,73	2016	167208,19
1997	20656,73	2007	25380,02	2017	194840,91
1998	48650,38	2008	41169,58	2018	222235,45
1999	24002,83	2009	28757,13	2019	253122,82

Source: NWSI 2020, processed

In the table above, it can be seen that investment in Indonesia for the period 1990-2019 continued to increase during the period 1990-1999, investment development experienced the lowest value in the early years of the period, namely 2,842.41 billion US$. Next. During the period 2000-2009, investment development experienced the lowest value in 2003, namely 14,977 billion US$.

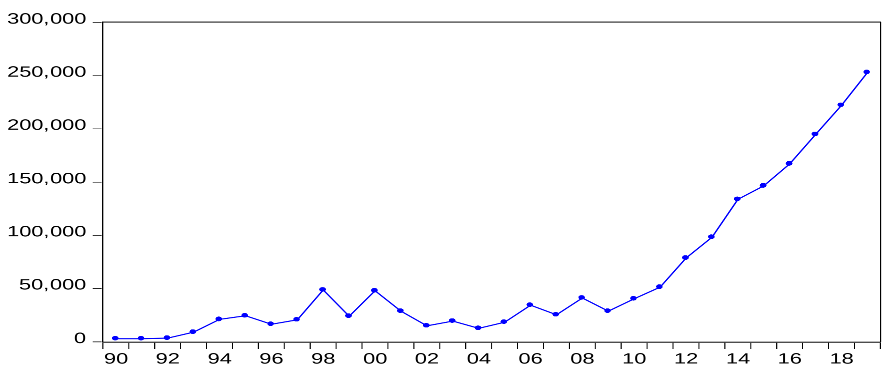

Figure 8. Investment graph

Based on the graph above, it can be seen that the growth for the 1990-2019 period has fluctuated since 1990 and has started to increase since 2010 and continues to increase until 2019.

Discussion

Based on the descriptive analysis of the effects of exports, imports, inflation, SBI, Exchange Rates, and Investment on Foreign Exchange Reserves (Faust & Wright, 2013; Lane, 1997), it can be described as follows:

- Exports during the period from 1986 to 1990 fluctuated. Indonesia's exports averaged 97,343.34 billion US$ per year. In 1990 Indonesia's exports were in the range of 25,675.00 billion US$. The number of Indonesian exports continued to increase until 2019 amounted to 167,497.00 billion US$. The highest number of Indonesian exports occurred in 2011 to reach 203,496.60 billion US$.

- Imports during the period from 1986 to 1990 fluctuated. Imports of Indonesia per year an average of 83,441.52 billion Rp. In 1990 Indonesia's imports were in the range of 21,837.00 billion Rp. The number of Indonesian imports continued to increase until 2019 amounted to 170,727.40 billion IDR. The highest number of Indonesian imports occurred in 2012 to reach 191,691,00 billion Rp.
- Inflation during the period from 1986 to 1990 fluctuated. Average annual inflation of 9.36% In 1990 Indonesia's inflation was in the range of 5.97%. Inflation continues to be suppressed and controlled, it can be seen in 2019 inflation was successfully controlled at 2.72%. The highest inflation rate in Indonesia occurred in 1998, reaching 77.60 this was due to the economic crisis which was followed by the 1997/1998 riots.
- SBI during the period from 1986 to 1990 fluctuated. SBI average per year 12.39% In 1990 Indonesia's SBI was in the range of 17.87%. SBI continues to increase, this can be seen in 2019 inflation was successfully identified at 5.00%. The highest number of Indonesian SBIs occurred in 1998, reaching 58.40%, this was due to the economic crisis which was followed by the 1997/1998 riots.
- Exchange during the period from 1986 to 1990 fluctuated. The average annual exchange rate is Rp 8,194 In 1990 the Indonesian exchange rate was in the range of Rp 1,843. The exchange rate continues to increase, this can be seen in 2019 the exchange rate was successfully recognized, which was Rp. 13,882. The highest figure for the Indonesian exchange rate occurred in 2018 reaching 14,481.
- Foreign exchange reserves during the period from 1986 to 1990 fluctuated. Average foreign exchange reserves per year 55,321.25 billion US$ In 1990 Indonesia's foreign exchange reserves were in the range of 8,661.00. Foreign exchange reserves continue to increase, this can be seen in 2019 Foreign exchange reserves were successfully recognized, which amounted to 129,183.00 billion US$. The highest figure of Indonesia's foreign exchange reserves occurred in 2017 reaching 130,196.38 billion US$.

Conclusion

Based on the results of the research and analysis of the discussion, the researchers concluded several things as follows:

- Export, import, inflation rate, interest rate, rupiah exchange rate, and investment variables simultaneously have a significant effect on foreign exchange reserves.
- The inflation variable partially has a significant and negative effect on foreign exchange reserves. High inflation will affect the exchange rate of the rupiah against the US dollar, because inflation causes domestic prices to be more expensive than prices abroad, therefore they tend to import goods.
- The interest rate variable partially has a significant and negative effect on foreign exchange reserves. If interest rates rise, it will cause domestic capital to increase.
- The exchange rate variable partially has a significant and negative effect on foreign exchange reserves. With the increase in the exchange rate of the rupiah against the US dollar, it will strengthen a country's exports and thus increase the inflow of capital into the country.
- The investment variable partially does not have a significant and positive effect on foreign exchange reserves. With an increase in investment, it causes more investors from abroad to enter the country and the opening of industries is increasing so that it will expand job opportunities.
- The variable of foreign exchange reserves partially has a significant and positive effect on economic growth. The increase in foreign exchange reserves indicates that the condition of Indonesia's Balance of Payments (BOP) in the second quarter of 2020 will improve when compared to the previous quarter.

Suggestion

Based on the results of the research found, the suggestions that can be put forward are as follows:

- The strategy that can be taken is to encourage exports and build industrial centers and learn from advanced industries to get maximum results and produce results that can compete in the international market.
- The impact of the COVID-19 pandemic on the economy is not far from three issues of internal and external macroeconomic imbalances, namely inflation, unemployment, and the balance of payments (trade) deficit.

- For inflation and unemployment, the government must compensate for price instability by maintaining controlled prices (administered prices) such as fuel, electricity, and others, or providing fiscal incentives to suppress the decline in production and distribution activities.

Further Research, Contribute thoughts in the form of references for further research or strengthen the justification of old theories that are still relevant to the current situation, as well as enrich knowledge with various theories resulting from this research process, especially in theory development

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