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Which is more important for Indonesia: Foreign Investment, Effective Exchange Rates, or Inflation? (Study on Indonesia's workforce over the past three decades)

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ABSTRACT: Globalization has spurred discussion about developing economic growth with a wider spectrum, giving rise to economic variables that are more precise and sharper in measuring economic development in a region. This dynamic is also behind this study, namely to examine the relationship between foreign investment (FDI), effective exchange rates, and inflation to the number of workers in Indonesia. This research data was sourced from the Indonesian Investment Coordinating Board (BKPM), the Ministry of Trade, and the Organization for Economic Co-Operation and Development. The timeline used in this study spanned thirty years (1991–2021). The novelty in the research is that the analysis was carried out using Fully Modified Ordinary Least Squares (FMOLS), as well as an econometric approach Cointegration Johansen. The capacity absorption hypothesis was also used as the basic model in this research. The adjusted R-square value of this study is 0.8254 so it can be concluded that 82.54% of the number of workers' changes can be explained by all independent variables. The results show that in the last three decades of Indonesia, Indonesia has relied heavily on foreign investment in increasing the number of workers. Conversely, inflationary conditions do not have an impact on the number of workers in Indonesia. Thus, the Indonesian government needs to pay attention to the effects of trade policies and programs because foreign investment (FDI) is able to intensify job creation for workers in Indonesia.

KEYWORDS: Foreign Investment, Effective Exchange Rates, Inflation, Workforce

1. INTRODUCTION

Foreign investment is often seen as an important factor in a country's economic development. In Indonesia, the Investment and Coordinating Board (BKPM) released data on Indonesia's investment realization in 2019 of IDR.806.6 trillion. This figure exceeds the set target, which is IDR.792 trillion. This increase shows the improvement in the investment climate in the last 5 years. An increase of up to 48.4% compared to the realization of 2015, which amounted to IDR.545.4 trillion. Meanwhile, when compared to 2018, investment realization rose 12.24% from IDR.721.3 trillion. The largest contribution came from foreign direct investment (PMA), amounting to IDR.423.1 trillion. This FDI contribution also increased by 10% compared to 2018, amounting to IDR.392.7 trillion.

Foreign investment, according to Law Number 25 of 2007, is an investment activity for business in Indonesia carried out by international investors, whether by utilizing entirely foreign capital or joint ventures with domestic investors. With this definition, foreign investment is important for Indonesia to encourage economic growth, encourage the emergence of local raw material supply industries, as well as technology transfer and management processes (Chandra, 2006). The World Bank even states that about 10% of foreign investment will contribute to the long-term interests of a country's economy (Bank, 1996). The tendency of foreign investment as a stimulant is getting bigger for developing countries. The government of Indonesia has identified infrastructure, agriculture, industry, maritime, tourism, special economic zones (SEZs), and industrial estates as investment priority sectors in its 2015-2019 strategic plan. These industries are extremely open to Foreign Direct Investment (FDI). Foreign investment inflows can give a boost to modern technological capabilities, resulting in improved availability of tradable commodities and job prospects (Young et al., 1994). Foreign investment not only ensures the transfer of assets to other countries, but it also plays a key role in the growth and development of entrepreneurship, as well as in the foundation of new firms in foreign investment destination nations.

Figure 1. Total Indonesian Foreign Investment from 1990-2020
Source: Investment and Coordinating Board (BKPM)

Indonesia also takes this conception of foreign investment as one of its important economic policies. The Indonesian government has prepared institutions, laws, regulations, and policies to encourage and increase the influx of foreign investment. Even in 2020, in the midst of public polemics, the Indonesian government insisted on continuing to pass the Job Creation Law. This law is projected to encourage further liberalization and flexibility of labor. Remembering, according to the government, the use of the omnibus method is based on the state of the rule of law in Indonesia which is experiencing hyper-regulation and conflict of norms between laws and regulations with each other, resulting in legal uncertainty, and leading to the inhibition of incoming investment in Indonesia (Putu Eka Cakra, 2020). From an employment perspective, the Job Creation Law provides opportunities for the labor system in Indonesia to become more flexible. Some labor rules need to be changed and, if necessary, removed, so that labor costs, especially wages can be reduced as low as possible and employers are given convenience in recruiting and dismissing workers (Nathan, 2020). That way, according to the government, entrepreneurs and capital owners can more easily invest, and open businesses so as to increase economic growth and create new jobs. Before its passage, the background of this bill seemed to evaluate the state of foreign investment in Indonesia in 2019, which amounted to only 2.2% of GDP. Since 1975, Indonesia has not been able to break through 3%. When compared to neighboring countries, Vietnam, Indonesia is still far behind. Therefore, with the ease of investment in Indonesia, the government hopes that there will be an increase in the portion of foreign investment in Indonesia's Gross Domestic Product (GDP) so that it will accelerate Indonesia's economic growth.

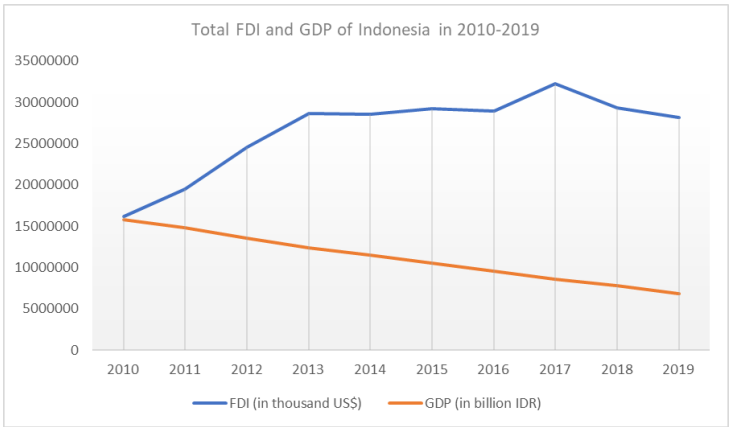

Figure 2. Total FDI and GDP of Indonesia in 2010-2019
Source: Central Bureau of Statistics (processed)

The Job Creation Law's implementation is intended to meet the labor absorption target. Indonesia requires almost 16 million direct jobs. This number consists of 6-7 million people affected by the Covid-19 pandemic, 7 million unemployed, and 2.9 million new labor force people per year. Indirect job creation will be 3-4 times greater than direct employment. Foreign investment in Indonesia will create a significant multiplier impact on the economy (Irawan, 2020).

2. LITERATURE REVIEWS

Most emerging countries are concerned about employment, economic growth, and poverty alleviation. (Osabohien et al., 2020). The arguments in favor of foreign investment largely stem from traditional neoclassical analysis, which examines the determinants of economic growth. One of the analyses states that foreign investment can help fill the gap in local savings, raise foreign exchange reserves, increase government revenue, and develop managerial skills in recipient countries (Shofar &; Hadiyanti, 2020). Foreign investment is an important component of the global economy and globalization, contributing to increased employment, technical advancements, productivity improvements, and, ultimately, economic expansion. (Asiedu, 2005). Therefore, the relationship between investment and labor is very close. Investment also holds the key to the rate of economic growth, because it will immediately raise demand for inputs, increasing employment possibilities and community welfare as a result of an increase in production and increase in income received by the community (Suindyah D, 2017).

In Malaysia, foreign direct investment and unemployment rates in Malaysia are significantly interrelated (Muhd Irpan et al., 2016). This study used time series data covering thirty years of timeline, from 1982 to 2012. The study used GDP, Foreign Direct Investment (FDI), and employment rates as variables. Similar findings were discovered in Tanzanian study, which comprised the collecting and analysis of research reports and data from the World Bank, UNCTAD, and the International Monetary Fund. (Mpanju, 2012). Employment and FDI in manufacturing and the service sector were also studied in Nigeria. The multivariate Johansen and VECM cointegration test was used in this study, and it was discovered that FDI in the manufacturing sector was positively associated with employment, however, FDI and employment levels were adversely related in the service sector. (Inekwe, 2013). On the other side, unemployment is one of the key issues confronting the Nigerian economy, with the jobless rate growing in 2018. According to their research, the primary approach for populous countries to create jobs is through FDI to boost the local workforce. The study found that foreign direct investment was significantly and positively associated with employment rates in Nigeria. That is about 0.97% of the increase in employment rate in each 1% of incoming FDI flow in Nigeria (Osabohien et al., 2020). In Pakistan, examining FDI and unemployment in Pakistan with variable population, the inflation rate for the period 1955 to 2011. Regression calculations state that FDI is key to reducing unemployment in Pakistan (Zeb et al., 2014). The impact of FDI on employment in twenty countries, both short and long-term, was also researched in Central and Eastern Europe. The study states that in these twenty countries long-term calculations are more suitable because, in the long run, there are several relationships between international and domestic firms, resulting in an increase in local products (Jude & Silaghi, 2016).

Foreign investment in Indonesia contributes more to the improvement of capital-intensive sectors than labor-intensive ones. Although the government's goal of reducing unemployment rates remains hard to achieve since the capital-intensive industry will only accommodate a small number of people with high educational qualifications and abilities. (Ningrum, 2008). This is an intriguing position, given that the Indonesian labor force is still dominated by employees with less competitive levels of education and skills. Even based on efficiency figures, relatively high investment is needed to absorb labor in industries targeted by foreign investors. Nonetheless, there is a positive relationship between international investors and national economic growth. The relationship between the role of foreign investors and national economic growth can be seen by comparing the amount of realized FDI with the amount of Real GDP growth and total debt/GDP at the same time. (Makhfudz, 2016).

In contrast to foreign investment and GDP, the effect of exchange rates on the unemployment rate in Indonesia in the observation period 2003-2014 showed a negative and significant influence on the unemployment rate in Indonesia. This means that if there is an increase in the exchange rate against the rupiah, it will reduce the unemployment rate in Indonesia, and vice versa if there is a decrease in the rupiah exchange rate it will increase the number of unemployed in Indonesia. The negative impact of the exchange rate on unemployment is assumed to occur because when the rupiah exchange rate weakens, it will increase the price of products from abroad. This causes people to try to find alternative products from domestic producers so that the demand for domestic products will increase. To meet this demand, producers will increase the number of workers (Lestari, 2018).

3. METHODOLOGY

In this research, the absorption theory is used as the model's underlying theory. This theory is used because it claims that local firms can easily learn technological knowledge, skills, and business management from international firms if the local firm already has the initial technology, skilled workers, and managerial skills to absorb it. The concept also describes how the absorption process depends on local companies. To get a quantitative assessment of the impact of foreign investment, effective exchange rates, and inflation on labor, the basic model is as follows (Massoud, 2008):

$$L = f(FDI, INF, REER) \ldots\ldots (1)$$

L represents the total employment rate, FDI represents a foreign direct investment, and REER represents the actual effective rate. Equation (1) indicates the model's implicit form, while equation (2) illustrates the model's explicit form as follows:

$$L = \infty + \alpha FDI + \Omega\ REEF + \beta\ INF + \mu \ldots\ldots (2)$$

In equation (2), ∞ is a constant term, α, Ω, and β are parameters of the independent variable, μ are stochastic indicators. Stochastic indicators represent another important variable that is not included in the model. It is expected that the FDI coefficient, which represents foreign investment, will show a positive sign, indicating that an increase in FDI inflows can affect the labor force (L). While the effective exchange rate (REER) and inflation rate (INF) are both undetermined impacts since they are affected by changes over time.

3.1. Estimation Techniques

The techniques of Fully Modified Ordinary Least Squares (FMOLS) and Johansen Cointegration were applied in this study. This technique is applied because the data in this study is time series data collected over time, and this data has been discovered and confirmed to be non-stationary. As a result, it must be processed first by performing a root pre-test unit in order to control the problem of stationarity. The cointegration approach is an improvement on the OLS method. If the linear combination of two or more separate integrated series has lower integration, they are said to be cointegrated. Unit tests are conducted first to check for stationarity in time series data before implementing Johansen cointegration. In this examination, the Phillip-Perron unit's root test was also applied. The presence of the unit root indicates that the time series being studied is non-stationary.

4. RESULT AND DISCUSSION

The first table presents the statistical description of this study, which includes data on mean, median, standard deviations, skewness, kurtosis, Jarque-Bera, and Probability.

Table 1. Statistical Description

Variable	L	REER	INF	FDI
Mean	100070.934	8440.570	9.214	16511813.445
Median	94453	9159.317	6.6	13254194.6
Std.dev	17603.411	4169.225	13.192	11024467.959
Skewness	0.446	-0.453	4.937	0.281
Kurtosis	-1.037	-0.914	26.164	-1.411
Jarque-	2.418	2.138	1010.182	2.979
Probability	0.149	0.172	0	0.113

Source: Primary Data, Processed in 2023

The mean values of the variables L, REER, INF, and FDI are 00070.93, 8440.57, 9.214, 1651181.445 respectively. For standard deviation values, the values in the same order are 17603.411, 4169.225, 13.192, and 11024467.959.

For skewness, the variable L has a positive skewness value of 0.446 means that the data variable has a positive skewness distribution and since the value is close to 0 it is normally distributed. The REER variable has a negative skewness value of -0.453 means that the data variable has a negative skewness distribution and since the value is close to 0 it is normally distributed. The INF variable has a positive skewness value of 4.937 means that the data variable has a positive skewness distribution and because the value is not close to 0 it is not normally distributed. The FDI variable has a negative skewness value of -0.453 means that the data variable has a negative skewness distribution and because the value is close to 0 it is normally distributed.

As for the kurtosis variables L, REER, and FDI show negative values and below -3, then the data variables have a platykurtic distribution with the excess negative and light tail distribution. As for the INF variable, the value far exceeds 3, meaning that the data is leptokurtic distributed with excess positive kurtosis and has a fat tail distribution.

For Jarque fallow value is the statistical value and probability is the value of the p-value for Jarque Bera. If the p-value < 0.05 then the data is not normally distributed. Because the L, REER, and FDI variables are more than 0.05, the data is normally distributed. As for the INF variable, because the p-value < 0.05, the INF variable is not normally distributed.

4.1. Econometric Results

As previously stated, this analysis used time series data from 1991 to 2021. The analytical econometric procedures employed are the Phillips-Perron unit root test, the Johansen cointegration test, and the FMOLS analysis method, all of which are performed using the EViews 10 program. **First**, a stationary test was carried out by the Philips-Perrons method. Stationary tests are performed on the original data and data with differencing first order. Since there are many outputs for each variable, it will be abbreviated in tabular form, here are the results:

Table 2. Stasioner Philips-Perrons Test

Variable	Unit root test at level				Unit root test at 1st difference				Order of Integration
	T-	CV	PV	Decision	T-Stat	CV	PV	Decision*	
FDI	-	-	0.1008	Non-S	-	-	0.0000	S	I(1)
INF	-	-	0.0001	S	-1.811	-	0.0001	S	I(1)
REER	-	-	0.7394	Non-S	-6.498	-	0.0000	S	I(1)
L	1.891	-	0.9997	Non-S	-5.957	-	0.0000	S	I(1)

Source: Primary Data, Processed in 2023

*) Remarks: Non-S = Non-Stationer (Not Stationer), S = Stationer (Stationer)

Hypothesis H0 is a data variable that has a unit root test (data is not stationary) and the criteria used in the hypothesis is with p-value, if the p-value of each variable is less than 0.05 then H0 is rejected so that the variable data is considered stationary. From the results in the table above, it is obtained that all variables have a p-value of less than 0.05 after *differencing 1st order* (first difference), then the data after the first difference is stationary data. **Second**, the Johansen cointegration test was carried out, here are the results of the software output:

Table 3. Johansen Cointegration Test-Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of	Eigenvalue	Trace Statistics	0.05 Critical Value	Prob.**
None	0.479789	47.73056	47.85613	0.0514
At most 1	0.414645	28.77844	29.79707	0.0652
At most 2	0.213720	13.24787	15.49471	0.1060
At most 3	0.194571	6.275030	3.841466	0.0122

Source: Primary Data, Processed in 2023

Trace test indicates no cointegration at the 0.05 level

*denotes rejection of the hypothesis at the 0.05 level

MacKinnon-Haug-Michelis (1999) p-values

Table 4. Johansen Cointegration Test-Unrestricted Cointegration Rank Test (Eigenvalue)

Hypothesized No. of	Eigenvalue	Trace Statistics	0.05 Critical Value	Prob.**
None	0.479789	18.95212	27. 58434	0.4182
At most 1	0.414645	15.53057	21.13162	0.2535
At most 2	0.213720	6.972844	14.26460	0.4924
At most 3	0.194571	6.275030	3.841466	0.0122

Source: Primary Data, Processed in 2023

Trace test indicates no cointegration at the 0.05 level

*denotes rejection of the hypothesis at the 0.05 level

MacKinnon-Haug-Michelis (1999) p-values

When compared to the 5% critical value in the first line for none (no co-integration), hypothesis H0 is the value of likelihood ratio (LR) or trace statistics. The procedure is repeated until the trace statistics are smaller than the critical value. The Trace and Maximum Eigenvalue values indicate cointegration in the model equation at a 5% significance level. Then it is possible to conclude that variables have a long-term relationship.

4.2. FMOLS Results

Table 5. FMOLS Test

Variable	Coefficient	Std. Error	t-Statistic	Prob
FDI	0.000686	0.000180	3.814649	0.0008
INF	131.9672	126.0448	1.046986	0.3047
REEF	3.033995	0.480855	6.309578	0.0000
C	62375.08	4157.308	15.00372	0.0000

R-squared	0.843532	Mean dependenr var	100878.3
Adjusted R-squared	0.825478	S.D. dependenr var	17310.74
S.E. of regression	7231.709	Sum square resid	1.36+09

Source: Primary Data, Processed in 2023

Test Hypothesis

H0: The independent variable has no effect on L, whereas H1: The independent variable has an effect on L. Significance level: 5%, Criticism area: H0 is rejected if the p-value is less than α. The significance level (α) of 5% and the p-value of the Sig column are used. From the results in the output above, the following table can be made:

Table 6. FMOLS Result Conclusion

Variable	P-value	Information
FDI	0.0008	Significant
INF	0.3047	Insignificant
REEF	0.0000	Significant
C	0.0000	Significant

Source: Primary Data, Processed in 2023

From the table above, the p-values for the INF variables > α (0.05) and H0 are not rejected, so the conclusion is that the Inflation (INF) has no influence on the labor level (L), this study's findings are consistent with Mankiw's theory, which states that high inflation rate will result in a decrease in the level of output and will ultimately reduce the number of labor users. There is a condition that inflation does not have a significant effect on employment because inflation that occurs in Indonesia on average is mild inflation so such an inflation rate has a very small effect on employment.

For other variable p-values, namely foreign investment and effective exchange rates, the values < α (0.05) and H0 are rejected, so the conclusion is that the variables Foreign Direct Investment (FDI) and REEF have a significant effect on L. This means that an increase in investment is also important to the rate of economic growth due to a significant increase in output, it will automatically increase demand for inputs, improving employment opportunities and public welfare through an increase in community income. In terms of the Effective Exchange Rate variable has a significant effect on the number of workers, which means that the exchange rate has a positive effect on economic growth this explains a higher exchange rate will lead to higher economic growth, which in turn will also increase job opportunities.

5. CONCLUSIONS

The motivation of this study is to assess the extent to which the variables of foreign investment, effective exchange rates, and inflation affect the number of workers in Indonesia, considering the government's efforts in increasing foreign investment in recent years are considered very enthusiastic. If you look at the software output, the adjusted R-Square value is 0.8254 or 82.54%. The results can be concluded that variable L can be explained by all independent variables by 82.54%, while the rest is explained by other factors. With these conclusions, this study recommends that the government continue to optimize the flow of incoming foreign investment, especially labor-intensive industries in order to be able to increase job creation for workers in Indonesia. The government is also expected to not only focus on increasing the value of the investment but also on the domino effect created by the investment.

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