

Histonomic Approach: Did FDI Affect Labor Productivity in Indonesia after Economy Crisis in 1998?

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Abstract. This journal article examines the impact of Foreign Direct Investment (FDI) on labor productivity in Indonesia during the reform era that began after the Asian economic crisis in 1998. The study uses a histonomic approach to analyze the effects of FDI on labor productivity, as well as other factors such as domestic investment, average wages, education level of labor, and industrial estates. The analysis method used is Fixed Effects Pooled Least Squares with panel data analysis of 30 regions across Indonesia from 2003-2009. The study finds that FDI and industrial zones have a positive and significant impact on labor productivity, while the wage of labor does not have a significant effect. Domestic investment and education level have a positive and significant impact on labor productivity.

Keywords: FDI, Labor Productivity, Histonomic

1 Introduction

In the years leading up to the Southeast Asian financial crisis, Indonesia's economy was already classified as a tiger economy, part of East Asean Miracle, namely 8 East Asian countries that have grown at an average of 7% per year for 25 years with rapid and sustainable growth with highly equal income distribution [1].

Todaro (2003) states, "The one of three main functions of the economic development beside the production of basic goods and developing the conditions established through the sufficient production, is the reduction of social anxiety through sufficient labor supply. The labor supply requires a separate factor for attention, as it is the predictor of the growth of population." [2].

Problems associated with the creation of employment opportunities are limited in exploring the sources of development financing that can provide employment in large numbers, especially in domestic financing from domestic savings, both government savings and public savings which would then become an investment.

This histonomic approach seeks to prove whether after 5 years of the economic crisis in Asia, the economy in Indonesia has proceeded according to economic theory. At the beginning

of the economic crisis, flying capital from foreign investors and banks experienced bad credit, so they had to be closed or merged [3].

Indonesia is a developing country with a low level of savings due to lower income levels, so that any level of domestic investment is low. Low level of domestic investment which has caused difficulties in financing the construction or called the saving-investment gap. Problems facing the vicious circle of developing countries is the low savings in the low economic growth. In an effort to achieve sustainable development, the development financing gap must be met by seeking sources of foreign financing [4].

With the entry of foreign direct investment as a form of foreign investment, gained a lot of positive things for the economy of the country concerned, such as income tax for the state, providing jobs, technology transfer and scientific and efficient use of land. Some of the theories on FDI explains that FDI had a positive impact how the productivity of domestic [5].

The problem then is how to attract FDI into the country particularly to the regions given the size of its benefits for economic development as a whole, especially to avoid the central and regional development gap. According to Salvatore (1996) a few things that attract FDI entry and a motivation for foreign firms to invest abroad is the existence of incentives and subsidies; prospective markets and networks; availability of primary commodities and labor is abundant; factor of technology, geography, and regulations that support and benefit [7].

2 Literature Review

2.1 Foreign Direct Investment

FDI is an investment that includes a long-term relationships and illustrates the existence of an interest in and control carried out by a single entity the country of origin of investment business entities in the recipient countries of investment (host country). In this case, a format that can be used through the Joint Venture or by establishing new companies in the recipient country investment. [8]

According to generally accepted accounting standards, FDI can be defined as any equity investment in a business entity at least 10%. Limits provided by the IMF is also considering an investment can be categorized as FDI if the foreign investor has at least a 10% share of ownership of shares that have voting stock [9][10]. The distinguishing feature of FDI is that FDI is not only related to the transfer of resources but is also associated with the acquisition of control or right of control over the company. For this reason, its subsidiaries do not just have financial obligations to the parent company, but a subsidiary part of the same organizational structure [11] [12].

2.2 Labor Productivity

According to Mankiw (2003) labor is the people who spend time to work. Todaro (2003) said the growth of the labor force has traditionally been regarded as one of the positive factors that spur economic growth. The number of workers a greater means will increase the number of productive labor [13]. The process of recruitment in the traditional economy is a process for the provision of labor [14]. Productivity is a ratio between output generated by the input used. The larger value indicates higher productivity or higher levels of large input capability to produce output. In general, Lawler, et. al (1998) states productivity as variations of the ratio: [15]

$$\text{Productivity} = \frac{\text{Output}}{\text{Input}} \quad (1)$$

Stoner and Freeman (1992) states there are two types of productivity based on the technical measurement: *First*, productivity, comparing the value of all outputs with the values of all inputs. *Second*, partial productivity, comparing the output value with the value of major categories of inputs, the mathematical form of both types These are: [16]

$$\text{Total Productivity} = \frac{\text{Total Output}}{\text{Total Input}} \quad (2)$$

$$\text{Partial Productivity} = \frac{\text{Total Output}}{\text{Partial Input}} \quad (3)$$

Todaro (2003) said that if there was an increase of input variables in this case the quantity of labor while the other factors unchanged, then after passing a certain point, additional marginal product (*output*) which originate in the addition of the variable factor will decline.

2.3 Empirical Perspectives

In research Pham Xuan Kien (2008) on "The Impact of Foreign Direct Investment on The Labor Productivity in Host Countries: The Case of Vietnam" aims to prove empirically the relationship between FDI with labor productivity in the provinces of Vietnam. [17]

Mathematical models are used:

$$\text{labprod}_i = f(\text{capint}_i, \text{scale}_i, \text{skill}_i, \text{Fshare}_i, \text{Dloca2}, \text{Dloca3}, \text{Dloca4}, \text{Fshare1}_i, \text{Fshare2}_i, \text{Fshare3}_i) \quad (4)$$

Final regression result states that the effect of FDI on labor productivity significantly and positively. Descriptively there a significant difference between Estonia and Slovenia concerning economic growth and income per capita, of which Slovenia is better economic condition than Estonia [18].

In the study Károly Fazekas (2003) aims to examine the relationship between FDI with the creation of jobs for the resident host, this is related to the extent of labor productivity in Hungary in general and in particular the European Union. This study uses a regional-level spatial data in Hungary in 1990-2001 [19].

Econometric model is used:

$$\text{FRCI}_{it} = \beta_1 + \beta_2 \text{EDU}_{it} + \beta_3 \text{INDUSTRY}_{i,90} + \beta_4 \text{DISTANCE}_{it} + \beta_5 \text{ABORDER}_i + u \quad (5)$$

Regression results reveal that most job opportunities for domestic and foreign companies are concentrated in industrial areas, particularly urban areas. Foreign and domestic company located in areas with a high amount of labor, far more productive than firms located in areas of low labor [20]. The results show that sectors with high-tech industries that contribute greatly to overall labor productivity by industry classification that divides the OECD version of the industry according to the level of technology [21].

2.4 Framework

Labor productivity is determined by many factors such as wage levels, education, technology and corporate culture. Investment and employment is an important part of the production factors that support a company's productivity level. The investment comes from the PMA and PMDN strongly support the creation of employment opportunities as a vehicle for workers to produce, because it would encourage an increase in output. Along with an educated workforce that will result in productivity that supports the production process in an increase in output.

3 Methodology

Based on the explanation above, then the labor productivity in Indonesia (Pro) is influenced by variables of FDI as the main independent variable, because we'll see how far this influence incoming FDI on labor productivity in Indonesia.

Then the other variables that affect labor productivity than other capital, PMDN is the source of domestic investment in this, then other production factors that affect the productivity of labor is wage labor (Upah), and technology variables affect labor productivity is represented by education level of labor (Pend).

Since some provinces in Indonesia have been designated as special economic zones and integrated industrial area dominated by foreign companies, then used a dummy variable (DKI) to distinguish these areas.

Econometric model that can be formulated as follows:

$$\ln Pro_{it} = \beta_0 + \beta_1 \ln FDI_{it} + \beta_2 \ln PMDN_{it} + \beta_3 \ln Upah_{it} + \beta_4 \ln Pend_{it} + \beta_5 DK I_{it} + \varepsilon \quad (6)$$

Function regression models of log-linear form in accordance with the results of panel data scatter graph. Index i indicates the initials of the provinces in Indonesia and t express the time at a certain *cross section* of the panel data used in this study.

3.1 Dataset

This section will describe the development of the research variables using panel data 30 regions all over Indonesia during the years 2003-2009 which included: labor productivity, FDI and domestic investment realization, the average wage, the level of workforce education, and industrial areas.

Provincial incorporation into the province, which suffered its mother Kepulauan Riau is joining to the Riau, West Papua to join the Papua and West Sulawesi, South Sulawesi join. This is because the province in 2003-2007 period in question is in the process of expansion and is working on governance.

4 Result and Discussion

Panel data used is the cross section data 30 regions across Indonesia with a time series from 2003 to 2009, the results of model estimation Labor Productivity of Industrial Sector during the years 2003-2009 with the model of Fixed Effects Pooled Least Squares are as follows:

$$\ln Pro_{it} = -2.403245 + 0.141724 \ln FDI_{it} - 0.135956 \ln PMDN_{it} + 0.0077369 \ln Upah_{it} + 0.084789 \ln Pend_{it} + 0.105406 DK I_{it} \quad (7)$$

t-Stat (-13.97854) (2.299977)** (-2.573685)** (1,567243)^{ts}

(0,590542)^{ts} (2,091273)**

R² = 0.869640 Adj. R² = 0.844313

F-Stat = 34.33647 DW-stat = 1,302447

Notes:

*** significant at $\alpha = 1\%$; ** significant at $\alpha = 5\%$; * significant at $\alpha = 10\%$; ts not significant

4.1 Analytical Result

According to the estimation of the model is known that FDI and industrial park area has a positive and significant impact on labor productivity industrial sector, this has been consistent with the hypothesis. With regression coefficient of 0.141724 on the FDI variables will have positive and significant impact on improving labor productivity industrial sector, where each increase of 1% of FDI will lead to growth of labor productivity amounted to 0.142%, *ceteris paribus*.

Regional industrial area has positive and significant impact on improving labor productivity by industry sector, the regression coefficient value of 0.105406 which means the area has industrial zones will increase labor productivity by industry sector rather than the 0.105% who do not have the industrial area, *ceteris paribus*. Thus there are significant differences between areas with industrial areas with areas that do not have the industrial park.

Results of regression the average wage level of workers and the industrial sector, the average educational level is not significant to the growth of labor productivity. This is because the wage levels of workers and industrial workers are still low and the available data do not incorporate the average wages of workers overall wage foreign workers (expatriates) whose wages are many-fold compared to the average wage workers and the industrial sector.

The average education level is not significant to the growth of labor productivity, caused by the low average education level of workers in Indonesia, which as a whole are at junior level and employment grade 2 at this point expect a worker who has expertise through training professional (vocational), especially for foreign companies put more emphasis on long experience and expert work in the field to be cultivated.

According to the estimation of the model is known that domestic investment has a negative and significant impact on labor productivity industrial sector, with regression coefficient of 0.135956, where each 1% increase in domestic investment value will cause a decrease in labor productivity amounted to 0.136%, *ceteris paribus*.

5 Conclusions

The article discusses the influence of foreign direct investment (FDI) on labor productivity in Indonesia from 2003-2009. The research used panel data from 30 provinces in Indonesia and found that FDI and the industrial area dummy variable had a significant positive impact on labor productivity. However, wages and labor education did not significantly affect labor productivity due to low average wages and education levels in Indonesia. The study also found that domestic investment had a negative and significant influence on the growth of labor productivity in the industrial sector. Overall, the economy has recovered since 2003 and FDI has a positive impact on labor productivity in Indonesia.

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