EMPLEYMENT EFFECT OF INDONESIA'S NON-OIL EXPORT

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Abstract

Indonesian government needs both domestic and foreign investments to accelerate its economic development. The investments enable promoting export and creating higher employment level. This research uses a path analysis method to analyze time series data of the period 1990 to 2009. It finds that both domestic and foreign direct investments significantly and positively influence Indonesia’s non-oil exports. In addition, it suggests that non-oil export performance can eventually lead to an increase in employment level in Indonesia. The policy implication of these results is that Indonesian government should encourage investment to promote export and absorb more labor.

Keywords: Foreign direct investment, domestic investment, non-oil export, labor absorption

JEL classification numbers: F42, F43

INTRODUCTION

Similar to other developing countries, Indonesia needs large investment to mobilize all economic sectors and to catch up with more developed countries either in the same region or internationally. The Indonesia’s investment sources are Foreign Direct Investment (FDI) and domestic investment. This investment is important for capital accumulation especially for the procurement of capital goods for production process. Through investment, the production capacity and output can be increased to meet domestic and export demands which in turn is expected to absorb more labor for tackling severe unemployment in Indonesia.

In an economy, the foreign capital is not only to overcome the shortage of domestic capital or deficit current account but it also to overcome technological backwardness. Along with financial capital and physical capital, the foreign capital also brings technical skills, expertise, organizational experiences and market information, advanced production techniques, product
innovations and trainings for local workers with new skills (on foreign direct investment, see Klostad and Villanger, 2008).

Indonesia had officially and effectively opened to capital investment since 1967 when the government enacted Law No. 1/1967 on Foreign Investment and legislated Government Act No. 6/1968 on Domestic Capital Investment. So far Indonesia experiences fluctuation flow of investment. Devaluation policy of Rupiah in 1983 affected the growth of total investment. In 1991, the government imposed Gebrakan Sumarlin II, a tight money policy designed to control inflation, maintain the deficit current account, oversee foreign currency, and maintain the credibility of Indonesia economy. This breakthrough has indirectly resulted in a decrease in investment in Indonesia.

Recognizing the importance of the investment, the Indonesian government improves the investment climate through several policies particularly in fiscal policy. Government launched investment package policy of Act No.25/2007 regarding improvement of foreign investment permit in the Investment Coordinating Board (BKPM) as well as import substitution policy. A number of concessions were granted by the government to either local or foreign investors to invest in Indonesia. This strongly supported the realization of foreign and domestic investment in Indonesia.

This study analyzes the interaction amongst several macroeconomic variables i.e. FDI, domestic investment, non-oil and gas export, and labor absorption. FDI is an investment from foreign countries directly used to run business or hold production facilities such as buying land, opening factories, bringing in the new machines, purchasing raw materials and so forth. There are four important benefits of FDI to the host country i.e. resource transfer effects, employment effects, balance of payment effect, competition and economic growth effect (Hill in Soekamato, 2006). FDI is also one of the implications of globalization in the world (Soesastro, 2000 and Kyaw, 2003).

Sollow (1956) explains that FDI will provide transfer of ideas, technology and managerial skills from foreign companies to domestic ones. FDI will further enhance the experience and labor productivity of domestic firms. This causes an increase in the ability of an economy to provide goods and services for the society and to create economic growth.

Ehimare (2011) maintains the argument that role of capital formation for economic growth can be obtained through FDI. Capital formation is an important and strategic factor in the process of economic development since capital formation is a major key to economic growth. One of the efforts to create capital formation is by increasing savings and investment (Timmer, 2004). However the situation in several developing countries shows a tendency to lower savings rate so that lower saving accumulation and eventually lower investment. For developing countries the lack the capital is a chronic problem. Moreover, developing countries are also at the level of inefficient technologies. This technological backwardness is caused by lack of capital.

The Ricardian trade theory emphasizes the importance of countries' comparative advantage for export. In this model, countries specialize in production of the best products. Unlike other models, the framework of this model predicts that countries will become fully specialist in specific commodity rather than to produce various kinds of commodities. Although a country is experiencing absolute disadvantage in producing a commodity, a mutually beneficial trade can still be occurred. The country will specialize in producing and exporting commodities that have a comparative advantage. Consequently, the country will import commodities which have a greater absolute disadvantage. By producing such commodity the country is
experiencing a comparative advantage. This is known as the law of comparative advantage (further discussion on Ricardian theory of comparative advantage can be found in Bouare, 2009).

Hecksher-Ohlin (HO) Theory was created as an alternative model of Ricardian Model. HO theory emphasizes the differences in relative factor endowments and factor prices between countries as the most important determinant of international trade with the assumption that technology and tastes are the same. A country with relatively higher resource abundance will tend to produce more goods that intensively use its resources abundance. Each country will export goods that intensively use cheaper and abundant factors of production, and import commodities that are relatively rare and expensive (for detail about Hecksher-Ohlin Theory can be found in O'Rourke, 2003).

Steffan Linder of Sweden put forward the theory of intra-industry trade. Intra-industry trade is trade in goods of the same industry between the two countries. Suppose that Japan is exporting Toyota cars to Germany, while German exports Audi to Japan. Furthermore, the country similarity theory from Linder states that trade in manufactured goods should take place among the countries with almost the same per capita income. By similar income level the preferences of exporting country will be relatively similar to the preferences of consumer groups in the importing country. This theory is very useful in explaining trade of differentiated goods such as cars and expensive electronic equipments where the brand and product reputation plays an important role in consumers' decision (Griffin and Pustay, 2005).

Meanwhile, Raymond Vernon explains the product cycle theory. The rationale of this theory is that any product of an industry will go through a process of new product stage, product maturity stage and standardized product stage. New product stage is the stage in which the company introduces the innovative product development. Product maturity stage is the second stage in the product cycle where demand for these products rise substantially because the consumers already know the value of the actual product. Innovative companies then enlarge its production capacity to meet the increasing demand, both domestically and internationally. Competition from domestic and abroad began to emerge as tempted by the prospect of corporate profits. The third stage is standardized product stage which occurs when the market begin to stabilize. The company is forced by the market to reduce the cost of production including by moving the location of companies to countries with lower production costs due to low-wage workers.

According to this international product cycle theory, domestic production starts on stage one or new product stage which reaches its peak in the second stage and reduces in the third stage. The export forms international trade on the first stage and reaches the maximum in the second stage. In the third stage, company producing an innovative product might become an importer because of intensive competition in the world and the competitor success in improving its competitiveness (Griffin and Pustay, 2005).

In the 1980s, some economists like Paul Krugman and Kelvin Lancaster studied the impact of global trade flows between multinational companies. According to this view the firms struggle to develop a sustainable competitive advantage to win the competition. Companies competing in the international market have many ways to gain sustainable competitive advantage. Competitiveness is obtained through intellectual property rights, research and development and economies of scale. A company with the intellectual property rights such as trademark, patent or copyright can gain advantage over its competitors. Consumers will buy the product because well-
known and protected intellectual property product is more prestigious and better product. Increasingly product competition in tight global markets requires high quality products and continuous product innovation. The research and development division will support the creation of a strong competitiveness in the market. That is why many companies invest in research and development. The economies of scale indicate lower average cost as the total output increases. Companies with the economies of scale will have a stronger competitive edge than its competitors (Griffin and Pustay, 2005).

The theory of national competitive advantage was proposed by Michael Porter of Harvard Business School in 1990. Porter states that the success of international trade is derived from the interaction of four specific elements i.e. factors condition; strategy, structure and competition of the company; demand conditions; and related industries (Griffin and Pustay, 2005). Conditions of factor production will affect the ability of a country in conducting competition in international trade. Completing the factor endowment theory of Heckscher-Ohlin, the Porter includes factors such as more advanced level of workforce education and quality of the country's infrastructure. The view emphasizes the creation of factors of production through training, research and innovation.

Domestic competitive environment can be as important aspects for a company to win the competition. Appropriate strategy for the domestic market should be based on capabilities, targets to be achieved, the intended target and the opportunities and challenges. The company which has proven its ability in the domestic market competition can be expected to compete in international markets. Companies must continuously reduce costs without sacrificing product quality, raise productivity, increase product quality and develop continuous innovative products. Investment is to enhance the ability of research and development, perform quality control, and improve brand image and employee skill development. These efforts will shape the company advantage when expanding into international markets.

Large domestic consumers will create potential demand for the products and to encourage the development and distribution of innovative products. However the companies that want to survive in a highly dynamic modern trade should not be quite satisfied with selling its products only in domestic market. The company must try to sell their products in international markets. To win the competition this company must continually develop the quality and quantity of the product that meet the domestic and overseas consumer demands.

Business relationships between suppliers, producers and distributors of products can build a strong and mutual advantage for the sustainability of their business. An industry that is located closely to suppliers will be able to reduce the cost of transportation. Communication between industry and suppliers will also be more intensive that will sometimes produce innovation. The large number of suppliers will also be able to promote competition between suppliers so that input prices will be lower, higher quality products, and improved technological innovation in input markets (Griffin and Pustay, 2005).

Trade and Geography: Economies of Scale, Differentiated Products and Transport Costs of Krugman (2008) has made a breakthrough theory which is highly relevant to contemporary international economic conditions. This Krugman's great contribution to the economy is one of the reasons why Krugman was chosen as the recipient of the 2008 Nobel Prize in Economics. Geography economic a la Krugman is a combination of imperfect competition model and economies of scale used in the new trade theory, the location theory that emphasizes the importance
transportation costs. Secondly, regional economic development is a historical process (path-dependent process). Third, a shock in a region may lead to long-term growth consequences.

Krugman's analysis leads to the concept of economies of scale. Krugman formulates a new theory about the impact of free trade and the determinants of global migration. Krugman's brilliant analysis is not only become a new theory of trade but it also a new theory of economic geography in which the location factor of production and economic activity can be analyzed in an integrated manner within a framework of equilibrium model. Krugman's analysis focuses on the impact of economies of scale on trade and business locations. The concept of economies of scale concludes that the more goods and services are produced in the same factory, the lower the production costs should be. According to Krugman, the market will not compete perfectly as stated by the conventional international trade theory. Krugman assumes that if there are n numbers of different goods and consumers like various goods, then the existence of price differences amongst goods make consumers prefer to consume more than one type of goods. This also shows the dynamic of consumers' demand. Then factory captures the market opportunities by increasing the number and variety of products. In addition to increasing supply of products on the market, it would also increase the competitiveness of their products (Krugman, 2008).

More and more goods are produced in the same factories, the lower the production cost spent will be. In other words, production costs can be reduced if the unit of production reaches a certain number. However, if the number of goods produced rises and economies of scale are no longer reached then the production cost will increase. This premise generates the concept of economies of scale and encounters the theory of comparative advantage. The collapse of the comparative advantage theory is also accelerated by the presence of rapid technological developments, particularly convergence of information and communication technology. Observing this Krugman's work, it can be seen a strong linkage between economic geography with international trade.

If review of international trade records transactions between countries, then the geographic economics focus on individuals or companies migration flow beyond geographical boundaries. Geographic economics also look at how the concentration of urban economic activities increases and how those cities organize its economic activities. Krugman also revealed a tendency that the workers migrate to the region's largest labor center that ultimately will create a very diverse variety of products. Krugman also reveals the number of trade between developed countries that have the tendency of consumers to choose various products from developing countries. So countries that have good market will enhance the economics of scale. Factories select urban areas to increase its production scale as well as to save on transportation costs. Individuals are also interested to migrate to urban areas that offer higher wages and more diverse products. This tendency increases market capacity and at the same time more factories and individuals migrate to the city. To increase economies of scale, a new factory may find another country that support the larger units of production. Through the support of advances in technology, transportation, and information, the plants will move its production processes more easily. Overall, Krugman's theory can explain the positive relationship between the size of the market with the wage rate, the relationship between market size with migration, and able to prove the calculation of productivity in a region. In trade, Krugman's theory is able to make a strategic trade policy.
The capital movement from rich to poor countries lead to imbalance of development model. Foreign investments produce goods for export. Export which is more capital-intensive industry is unable to absorb more labor, while the domestic sector is labor-intensive one. In the domestic sector, low investment does not create extensive employment opportunities. However, the export sector is attractive for investment in a country, although it may tend to harm the recipient country (see Myrdal, 1956).

There has been changes of economic structures in developing countries. The agricultural sector is decreasing in national income, and the industry and services sector increases. The role of export oriented industries and services sector is increasingly important while the role of agricultural exports is declining (see Memedrovic and Lapadre, 2009).

Heksher-Ohlin-Samuelson theory states that international trade does not originate from differences in the level of productivity or advances in technology between countries. It comes from abundance or wealth differences in factors of production. Trade between countries is because each state control over production factors with different specialization. For example, countries having labor abundances would have cheaper cost or wage level so these countries will specialize in the labor-intensive commodities such as primary commodities and then it will be exported. Reversely the country will import capital intensive commodities such as manufacturing products. Such tendencies indicate that the developed countries produce capital intensive goods such as manufacturing, while developing countries tend to produce agricultural goods due to its labor abundance. This will certainly have an impact on investment pattern in a country.

Higher export provides increased revenues and profits for producers and exporters. This will encourage producers to increase outputs. To achieve larger output, the manufacturers hire more factor of production such as labor. So export increase will absorb larger workforce. This will be a positive influence on output and employment in the countries which are interconnected by trade and financial activities.

Fu and Balasubramanyam (2004) analyze employment level as a result of export growth in China during the post-reform period. This research is based on the theory of Adam Smith about the vent for surplus theory and the productivity theory of international trade. According to these theories the trade will create new effective demand for surplus output of economic resources. The results shows China's export is supported by its surplus production capacity strengthen by FDI. The export growth encouraged employment absorption in China because export sectors are mainly labor intensive.

Mojtahed and Hassanzadeh (2005) analyze the employment effect of FDI in Iran manufactures and to determine whether there is a productivity gap between domestic and foreign companies. The data used are time series data from 1996-2002. The results show that FDI in Iran has a positive effect on employment, particularly high-skilled labor in manufactures and the petroleum sector. In addition there is substantial productivity gap between domestic firms and foreign companies.

Lan (2006) conducted research to determine relationship between foreign direct investment and provincial economic growth in Vietnam. The data used are panel data from 1996-2003 of 61 provinces. The analytical tool is a two stage least squares (2SLS), three-stage least squares (3SLS), and the generalized method of moments (GMM). The variables used are foreign direct investment, ratio of export to GDP, the ratio of government expenditure to GDP, ratio of domestic investment to GDP, employment growth, human capital, real exchange rate, technological transfer, and
knowledge. The results suggest that foreign direct investment provides significant positive impact on economic growth in Vietnam. The exports and foreign direct investment are more complementary because FDI is consistently invested in the export-oriented manufactures sector. Foreign direct investment leads to an increase in GDP, employment skills, human capital and infrastructure in Vietnam. Human capital is an important factor in economic growth because foreign companies facilitate technological transfer to domestic companies. Increased exports also have a positive impact on economic growth in Vietnam.

Vuksic (2006) examines the effect of FDI on exports. This study uses panel data of 21 manufacturing sectors over the period of 1996 to 2002. Using regression technique the findings show that FDI positively affect exports. Meanwhile, Yamin (2006) analyzed the effect of the agriculture development on income distribution and employment growth in South Sumatra. Using time series from 1985-2005, the research explain that the agricultural subsector has no effect on the distribution of incomes. However, the food crops, plantations, livestock, forestry, and fisheries have a positive effect on employment in South Sumatera.

METHODS

This research uses a path analysis of Wright (1921) which was later developed by Duncan. Path analysis is a method to analyze the direct and indirect effect of a model that consists of exogenous and endogenous variables. Exogenous variable is the variable that its value is not affected by variables in the system and it is not causality. The endogenous variables are the variables that its value is determined by exogenous variables and other endogenous variables in a model. A path analysis is used to examine the causal relationship which has been formulated on the basis of theories or relevant researches. The assumption for the realization of FDI and domestic investment is 1 year lag.

The equations of path analysis are as follows:

\[ Y_1 = \beta_1 X_1 + \beta_2 X_2 + \mu_1 \]  \hspace{1cm} (1)

\[ Y_2 = \beta_3 Y_1 + \mu_2 , \] \hspace{1cm} (2)

where \( X_1 \) is a foreign investment, \( X_2 \) is the domestic investment, \( Y_1 \) is the non-oil exports, \( Y_2 \) is absorbed labor, and \( \beta_1, \beta_2, \) and \( \beta_3 \) are the path coefficient.

Operational definitions of foreign investment is the realization of foreign investment in Indonesia per year (in million U.S. dollars), excluding Oil and Gas, Banking, Non Bank Financial Institutions, Insurance, Leasing, Mining in Terms of the Contract of Work, Coal Mining, Investments which licenses are issued by technical department, Portfolio Investment (Capital Market) and Household Investment. Realization of FDI data is sourced from Coordination Board of Investment (Badan Koordinasi Penanaman Modal). Meanwhile domestic investment is the value of realization of the domestic investment of each year in units of millions US dollars. The data comes from BKPM. Export is the value of non-oil exports of agriculture, industrial and mining in million US dollars. Non-oil export data in constant prices is an annual data from 1991-2009 sourced from the Indonesia Central Bureau of Statistics (BPS) and BI. Labor absorption is a labor force that does paid job or obtain revenue or profit for at least 1 hour continuously in the previous week. Workforce data is annual data 1991-2009 obtained from BPS.

This study uses secondary data time series (time series) from the years 1990-2009. The research data are obtained from the Central Statistics Agency (BPS), Economic Report of Indonesia (BI), and the Capital Investment Coordinating Board (BKPM), as well as other relevant data sources.
RESULTS DISCUSSION

Normality test is performed on individual and multivariate data using the critical rate skewness value of ± 2.17 at 3% significance level. If the critical value is less than absolute value of 2.17, then the data is normally distributed. Except for $X_3$, the $X_1$, $X_2$, and $Y_1$ are normally distributed. Normality test for multivariate has critical value of 2.017 which is less than 2.17 (Table 1). So it is call normally distributed multivariate data.

GFI (Goodness of Fit Index) was developed by Joreskog and Soborn in 1984 which value is between 0 as a poor fit and 1 as a perfect fit (Hooper et al. 2008). Calculation results are showed in Table 2 which explains that the value of GFI is 0.791. It means that the model used in this study is fit or good.

Table 1: Assessment of Normality

<table>
<thead>
<tr>
<th>Variable</th>
<th>minimum</th>
<th>maximum</th>
<th>skeweness</th>
<th>c.r.</th>
<th>kurtosis</th>
<th>c.r.</th>
</tr>
</thead>
<tbody>
<tr>
<td>$X_2$</td>
<td>2398.600</td>
<td>34878.700</td>
<td>0.588</td>
<td>1.046</td>
<td>0.135</td>
<td>0.120</td>
</tr>
<tr>
<td>$X_1$</td>
<td>706.000</td>
<td>14871.400</td>
<td>0.892</td>
<td>1.588</td>
<td>0.560</td>
<td>0.498</td>
</tr>
<tr>
<td>$Y_1$</td>
<td>18247.200</td>
<td>107885.000</td>
<td>0.940</td>
<td>1.672</td>
<td>-0.213</td>
<td>-0.189</td>
</tr>
<tr>
<td>$Y_2$</td>
<td>7872.300</td>
<td>31721.000</td>
<td>1.648</td>
<td>2.932</td>
<td>2.190</td>
<td>1.948</td>
</tr>
<tr>
<td>Multivariate</td>
<td></td>
<td></td>
<td></td>
<td>6.411</td>
<td>2.017</td>
<td></td>
</tr>
</tbody>
</table>

Source: Data estimation.

Table 2: Goodness of Fit Index

<table>
<thead>
<tr>
<th>Model</th>
<th>RMR</th>
<th>GFI</th>
<th>AGFI</th>
<th>PGFI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Default model</td>
<td>59166824.073</td>
<td>0.791</td>
<td>0.303</td>
<td>0.237</td>
</tr>
<tr>
<td>Saturated model</td>
<td>0.000</td>
<td>1.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Independence model</td>
<td>70529937.679</td>
<td>0.365</td>
<td>-0.058</td>
<td>0.219</td>
</tr>
</tbody>
</table>

Source: Data estimation.

Table 3: Unstandardized Regression Weights

<table>
<thead>
<tr>
<th></th>
<th>Estimate</th>
<th>Standard error</th>
<th>c.r.</th>
<th>Probability</th>
<th>Label</th>
</tr>
</thead>
<tbody>
<tr>
<td>$Y_1 \leftarrow X_1$</td>
<td>2.444</td>
<td>0.942</td>
<td>2.596</td>
<td>.009</td>
<td>par_1</td>
</tr>
<tr>
<td>$Y_1 \leftarrow X_2$</td>
<td>1.732</td>
<td>0.396</td>
<td>4.370</td>
<td>***</td>
<td>par_2</td>
</tr>
<tr>
<td>$Y_2 \leftarrow Y_1$</td>
<td>0.203</td>
<td>0.029</td>
<td>6.896</td>
<td>***</td>
<td>par_3</td>
</tr>
</tbody>
</table>

Source: Data estimation.

Table 4: Unstandardized Regression Weights

<table>
<thead>
<tr>
<th></th>
<th>Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>$Y_1 \leftarrow X_1$</td>
<td>0.392</td>
</tr>
<tr>
<td>$Y_1 \leftarrow X_2$</td>
<td>0.660</td>
</tr>
<tr>
<td>$Y_2 \leftarrow Y_1$</td>
<td>0.852</td>
</tr>
</tbody>
</table>

Source: Data estimation.
The total effect is the sum of direct influence and indirect influence. Table 5 presents the total effect of exogenous and endogenous variables. Total effect of foreign investment ($X_1$) on the non-oil exports ($Y_1$) is 0.392 and provides a positive total effect on labor absorbed ($Y_2$) of 0.334. In diagram, this influence is plotted in Figure 1 of the first path.

Domestic investment ($X_2$) has the positively total impact of 0.660 and 0.562 on the non oil exports ($Y_1$) and labor absorption, respectively. While the total effect of non-oil export on labor absorbed ($Y_2$) is 0.852. In diagram, it is depicted in Figure 1 of the second path.

**CONCLUSION**

This paper suggested that Indonesian government should increase the realization of foreign and domestic investments, because they promoted non-oil exports which in turn will absorb more labor in Indonesia. Higher realization of domestic and foreign investment could be obtained through the improvement of investment climate. These improvements included better services for potential investors, law enforcement and eliminate the high cost economy. It is expected that the higher realization of domestic and foreign investment will have an impact on increasing non-oil exports of Indonesia.

Indonesia must consistently increase the value of non-oil export that has competitive advantages in the market. The leading sectors in agriculture included coffee, fresh and frozen shrimp, spices, and fish. In the industrial sector, increased exports could be achieved from the export of processed wood, clothing, other textiles, electrical equipment and paper and paper products. Exports from the mining sector were from copper ore and coal. This increasing export was expected to increase labor absorption capacity.

Governments should also continue to improve all sectors which provide more employment opportunities and labor absorption. These sectors were agriculture and forestry sector, trading, community services, manufacturing, and transportation. It had been proven that those sectors are able to increase employment growth significantly. At last the increasing employment was expected to improve the more equally distribution of income and better welfare of workers.
REFERENCES

Bank Indonesia, *Laporan Perekonomian Indonesia*, several years.


