**THE IMPACT OF ECONOMIC GROWTH, EXPORT PERFORMANCE AND FDI TOWARDS THE NUMBER OF LABOR OF MANUFACTURING SECTOR IN INDONESIA**

**THESIS**

***Thesis is submitted in partial fulfillment of the requirements for the Bachelor Degree from Andalas University***

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*Allah is real. Whoever you are, Allah always there for you*

*When you are good person, Allah loves you,*

*Even when you are bad person, Allah still loves you because Allah knows your soul is Him and Allah has perfect eyes to look at you.*

*“This thesis is dedicated to my beloved Mama”*

*It’s really hard to put into word what I feel, since I’ve been through a very long road to graduate…*

*My biggest thank for My God, Allah SWT,*

*for Your amazing bless, Your curing love, and*

*for Your answer to all of my prayer and my complain.*

*Praise be to Allah, the God of the worlds.*

*And I thank to my self and her,*

*It’s a process and I can’t arrive to finish line without pass each of step on it…*

*Life is surprise and I thankful for everything I did and Allah given to me…*

*Keep power of mind, keep power of belief then touch the sky of dream world of yours…Dream comes true… (Diana die alma)*

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| **The Impact Of Economic Growth, Export Performance and FDI towards The Number of Labor of Manufacturing Sector in Indonesia**  Thesis by : Diana Safitri  Thesis Advisor : Prof.Dr.H.Firwan Tan, S.E. M.Ec.DEA.Ing  **ABSTRACT**  This research is aimed to study about the impact of economic growth, export performance and FDI towards the number of labor of manufacturing sector in Indonesia after and before implementation of AFTA. The thesis analyzes the impact by using OLS (ordinary least square) of time series data from 1992-2010. In this thesis the writer uses some variables; they are the number of labor in manufacturing sector (L) as dependent variable and economic growth (GDP), export performance (EX), foreign direct investment (FDI) as independent variables. Based on the empirical results the writer found that economic growth and export performance are positive and significant to influence the number of labor in manufacturing sector. Nevertheless, foreign direct investment show negative and insignificant in order to influence the number of labor in manufacturing sector. It means that economic growth and export performance play important role towards enhance the number of labor in manufacturing sector after AFTA.  **Keyword : Economic Growth, Export Performance, FDI, Labor, Trade Liberalization** | | | |

This thesis has been presented before the examiners in the thesis examination and succesfully passed the thesis examination on August, 6th 2012. The abstract has been approved by the advisor and the examiners :

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**PREFACE**

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**CHAPTER I**

**INTRODUCTION**

**1.1. Statement of the Problem**

Globalization becomes a very popular paradigm that represents an open world economy. New world economy leads economic liberalization is inevitable. Various international agreements in the fields of trade liberalization emerged. Indonesia was forced to follow the flow of this liberalization. Especially Indonesia has ratified the establishment of the WTO through the Law no. 7 / 1994 on the ratification of agreement on the establishment of world trade organization and it is therefore legally bound by the rules agreed upon. (Sugeng, 2003)

Other symptoms developed in the liberalization and integration of world economies is the emergence of a number of regionalism. Some countries which are located in a particular region will be allied. In the context of liberalization in Southeast Asia, AFTA is one of the most popular policies among several other regional economic cooperation schemes. AFTA entered into force since January 1, 2002, especially for the first six member countries: Brunei Darussalam, Philippines, Indonesia, Malaysia, Singapore and Thailand.(Sugeng, 2003)

The word "free" in the AFTA is actually connotes the notion that the trading system "liberate" the exporters and importers from tariff and non tariff barriers on goods exported to or imported from a fellow ASEAN member countries. The purposes are to facilitate trade activities, to attract investors from within and outside the region, increasing the volume of trade across the region and foster the competitiveness of the participating countries for the sake of the world's readiness to face the free market.

The international trade regime in Indonesia has undergone fundamental changes since the 1980s, with a reduction of many tariffs on imports accompanied by a gradual shift from an inward-looking import substitution policy to an outward-looking export promotion strategy. Indonesia has also removed all non-tariff barriers and export restrictions. The process of trade policy reform accelerated shortly after the economic crisis of 1997. The Indonesian Government reduced tariffs on all imported food items to a maximum of 5 per cent, deregulated its trade regime in the major agricultural commodities (except rice, for social reasons), terminated production and trade monopolies in certain intermediate industries (cement, plywood and rattan) and reduced export taxes on wood and many other commodities. (Tambunan, 2008b)

Since Indonesia joined in regional trade policy and enhanced export promotion strategy, it will lead abundant factor of production in Indonesia more used to produce more output. Producing more means that the firm will open broad opportunity for labor force to enter the working area as a worker. Implementation of export promotion strategy has been brought Indonesia to attract potential industries within country to drive high growth. In this case Indonesia having manufacturing industry which is beneficial to support trading in terms of export expansion through implementation of international trade policy.

In Indonesia, as in many other developing countries, small medium industry have a crucial role to play because of their potential contributions not only to employment creation, particularly for youth and the less educated, but also to the improvement of income distribution, poverty alleviation, rural social and economic development, and the development of entrepreneurship, especially among women in rural areas. Following the emergence of the Asian financial crisis in the late 1990s, the Indonesian government revitalized the role of small medium industry by positioning these businesses as the engine for export growth of manufactured goods, either directly or indirectly through subcontracting linkages with large-scale exporting companies, including foreign companies in the country.

Recent debates among policy makers and researchers on the subject of small medium industry in developing countries have focused on the ability of such businesses to survive or sustain their existence amid growing pressure from globalization and trade liberalization. Some contributors to the debate are skeptical, given the fact that most small medium industry in developing countries lack of the necessary resources, particularly technological advances and skills, to remain competitive in the global marketplace. There is little doubt that, in the era of trade liberalization, small medium industry in developing countries, including those in Indonesia, can only survive if they possess the capacity for internationalization. Indeed, this is a critical factor to determine the competitiveness of small medium industry in the global market (Long, 2003).

There is little doubt that international trade liberalization generates immense competitive challenges for most developing countries, including Indonesia. Since the mid-1990s, many studies have estimated the impacts of trade liberalization on economic growth, employment, poverty, income distribution and the survival of local firms. Nonetheless, the real impact of trade liberalization on the global economy remains a much debated and controversial subject. Theoretically, at an aggregate level, the broad benefits that are generated from international trade reform include the following: improved resource allocation; access to new and better technologies, inputs and intermediate goods; economies of scale and scope; greater domestic competition; and the availability of favorable growth externalities, such as the transfer of know-how (Falvey & Kim, 1992).

International trade policy reform works by inducing substitution effects in the production and consumption of goods and services through changes in price. These factors in turn influence the level and composition of exports and imports. The change of relative price induced by international trade liberalization causes a more efficient reallocation of resources. Moreover, international trade liberalization also enables the expansion of economic opportunities by enlarging markets and enhancing knowledge spillover.

Among existing liberalization commitments in the Asia-Pacific region, the implementation of the biggest commitments, namely the Asia-Pacific Economic Cooperation, would greatly benefit Indonesia. AFTA, on the other hand, is expected to contribute little to gains in welfare for many countries in the region, especially the poorer ones. One explanation is that AFTA creates a discriminatory trading block in the ASEAN nations, where trade diversion offsets the potential for trade creation. By now, however, the fear of trade diversion from AFTA is no longer relevant, since most ASEAN members have undertaken unilateral liberalization following the Asian financial crisis in 1997/98. Pambudi and Chandra (2006) and Hutabarat (2007), meanwhile, contribute to the assessment of the implementation of the ASEAN–China Free Trade Agreement (ACFTA) on the Indonesian economy. The first study highlights a number of important findings. Firstly, based on the initial implementation of the so-called Early Harvest Program (EHP), imports of the commodities included in the agreement (e.g. vegetables, fruits and fish) increased much faster than the country’s exports of similar products to China. Secondly, various production costs in the domestic market were expected to increase significantly. Thirdly, the study also foresaw a decline in real GDP, both short term and long term, primarily because Indonesia was expected to experience a trade deficit with respect to these commodities. Some provincial regions of the country were also expected to experience larger losses than others. It is important to note that the simulation in the study conducted by Pambudi and Chandra was only done partially, in that it only considered the elimination of tariffs on imported commodities from Indonesia to China. Should the simulation be done on both of sides or the elimination of agricultural imported tariffs in both countries, it is more likely that Indonesia’s losses would be greater than the current settings for the simulation would suggest. Furthermore, the second study Hutabarat concludes with the following points: Firstly, ACFTA benefits Indonesia only in terms of certain commodities, such as rubber and palm oils, which would see an increase in exports. At the same time, however, Indonesia would also expect some losses in other trade commodities vis-a-vis China, especially in rice, vegetables and oilseeds. Secondly, with respect to AFTA, the study also argues that Indonesian imports from other ASEAN countries would increase, while ASEAN market diversification of Indonesian exports would decline.

On the other hand, in the common sense we already knew that product of Indonesia still less-compete compared to other product in terms of low quality for international trade because of lack of technology, innovation and most of export product from Indonesia in the form of small manufactured goods such as garment, textile, footwear and plywood. Under that, then we recognized something to bring new era for trading climate of Indonesia. We should observe an opportunity in order to helped domestic manufacturing activity from abroad.

According to United Nation (2003), Investment and trade liberalization have provided greater freedom to transnational corporations to organize their production activities across borders in accordance with their own corporate strategies and the competitive advantages of host-countries. Countries today view inward foreign direct investment as an important means of integrating their economies with international markets and expect it to contribute to their economic development. Nonetheless, openness alone is not always sufficient for the expected benefits to materialize. In order to narrow the gap between the objectives of host countries and transnational corporations, governments use a variety of policy measures.

International trade policy is assumed to give better impact to the domestic market since Indonesia implemented new export expansion policy which gives the advantage on manufacturing sector as well as the number of labor forces in this sector.

In the real world, there are several variables which are considered by many economists becoming important to influence the number of labor forces in manufacturing industry. Those variables are GDP growth, export performance and foreign direct investment. However, no study has been conducted in order to analyze this functional relationship. These are reasons why do I choose to develop my thesis entitled:

“**The Impact of Economic Growth, Export Performance and FDI towards the Number of Labor of Manufacturing Sector in Indonesia**”

**1.2. The Definition of the Problem**

Based on the statement of the problem has been set above, we can concluded the main problem that should be studied and defined as follow:

1. What is the relationship between economic growth and the number of labor of manufacturing industry in Indonesia?
2. What is the relationship between export performance and the number of labor of manufacturing industry in Indonesia?
3. What is the relationship between foreign direct investment and the number of labor of manufacturing industry in Indonesia?

**1.3. Research Objectives**

This research will be focused by the following objectives:

1. To examine and analyze the relationship between economic growth and the number of labor of manufacturing in Indonesia.
2. To examine and analyze the relationship between export performance and the number of labor of manufacturing in Indonesia.
3. To examine and analyze the relationship between foreign direct investment and the number of labor of manufacturing in Indonesia.

**1.4. Hypothesis**

Based on the definition of the problem and research objectives above, it can be hypothesized as follows:

1. The economic growth is considered positively to stimulate the increasing of labor number working in manufacturing industry.

2. The quantity of export is considered positively to affects the number of labor working in manufacturing industry.

3. The foreign direct investment is considered positively to affects the number of labor working in manufacturing industry.

**1.5. The Scope of Research**

Data which is used in this research is secondary data. Specifically, writer used time series data and Ordinary Least Square method. Data is taken in Central Bureau Statistic from 1992-2010. The data contains of; labor data by using total of manufacturing labor as measurement. The economic growth data by using real gross domestic product as measurement, since this data is an economic growth indicators. Export performance data is taken from total export of non-oil and gas especially for manufactured goods. Last, for investment data, writer use foreign direct investment.

**1.6. Research Advantages**

The results of this research are expected to provide advantages for:

1. Academicians and policymaker, it is expected to know the effectiveness of international trade policy in as an effort to increase the number of labor especially in manufacturing sector in Indonesia.
2. Future research to those who are interested in this field.
3. Fulfilling requirements of Sarjana Ekonomi degree of Economics in Economic Faculty, Andalas University.

**1.7. Thesis Structure**

Writing this thesis is divided into six chapters with each chapter details are the following:

Chapter I : Introduction

Chapter II : Literature Review and Previous Research Results

Chapter III : Research Methodology

Chapter IV : Macro-Overview of Manufacturing Labor in Indonesia

Chapter V : Empirical Findings and Its Analysis

Chapter VI : Conclusion and Recommendation

**1.8. Analysis Framework**

The independent variables in this research are real GDP, total export, foreign direct investment while the dependent variable is the number of labor in manufacturing.

**Analysis Framework**

**CHAPTER II**

**LITERATURE REVIEW AND PREVIOUS RESEARCH RESULTS**

**2.1 Literature Review**

**2.1.1 International Trade Theory**

Countries engage in international trade for two basic reasons, they are different from each other in terms of climate, land, capital, labor, technology and they are try to achieve scale economies in production. The first reason can be explained by theory of Comparative Advantage. Comparative Advantage state that trade allows a more efficient use of the economy’s resources by enabling imports of goods and services that could only be produced at home at higher resource costs. It means that a country should produce a good which has lower opportunity cost. The Ricardian Model explains the welfare gains if country specializes in producing goods which has a comparative advantage. The Ricardian model is based on technological differences among countries. These technological differences are reflected in differences in the productivity of labor with assumption labor is the only factor of production.

The Heckscher-Ohlin Theorem, otherwise, state that country will specialize based on factor endowments. It means that based on the model, country will export the commodity that intensively uses its relatively abundant factor. The H-O model assumes the existence of a second factor so not only one factor of production the country has as the Ricardian model. The important thing of this explanation is to reach efficiency in international trade. This way also emphasizes to achieve productivity efficiency and international competitiveness. Even though productivity efficiency and international competitiveness can be reached, it is ambiguous under Ricardian or Heckscher-Ohlin model, how does international trade determine economic growth in the long run and bring effect to the unemployment. (Salvatore, 2004)

**2.1.2 The Economic Theory of Employment**

**2.1.2.1 Okun’s Law**

Typically, growth slowdowns coincide with rising unemployment. This negative correlation between GDP growth and unemployment has been named Okun’s law, after the economist Arthur Okun who first documented it in the early 1960s. Part of the enduring appeal of Okun’s law is its simplicity, since it involves two important macroeconomic variables. Additionally, the relationship appears to enjoy empirical support. In reality, though, Okun’s law is a statistical relationship rather than a structural feature of the economy. As with any statistical relationship, it may be subject to revisions in an ever-changing macro economy.

Okun’s two relationships arise from the observation that more labor is typically required to produce more goods and services within an economy. More labor can come through a variety of forms, such as having employees work longer hours or hiring more workers. To simplify the analysis, Okun assumed that the unemployment rate can serve as a useful summary of the amount of labor being used in the economy. (Knotek, 2007)

The difference version. Okun’s first relationship captured how changes in the unemployment rate from one quarter to the next moved with quarterly growth in real output. It took the form: Change in the unemployment rate = a + b\*(Real output growth). This relationship can be called the difference version of Okun’s law. It captures the contemporaneous correlation between output growth and movements in unemployment—that is, how output growth varies simultaneously with changes in the unemployment rate. The parameter b is often called Okun’s coefficient. One would expect Okun’s coefficient to be negative, so that rapid output growth is associated with a falling unemployment rate, and slow or negative output growth is associated with a rising unemployment rate. The ratio of -a/b gives the rate of output growth consistent with a stable unemployment rate, or how quickly the economy would typically need to grow to maintain a given level of unemployment.

The gap version. While Okun’s first relationship relied on readily accessible macroeconomic statistics, his second relationship connected the level of unemployment to the gap between potential output and actual output. In potential output, Okun sought to identify how much the economy would produce under conditions of full employment.

In full employment, Okun considered what he believed to be an unemployment level low enough to produce as much as possible without generating too much inflationary pressure. A high rate of unemployment, Okun reasoned, would typically be associated with idle resources. In such a circumstance, one would expect the actual rate of output to be below its potential. A very low rate of unemployment would be associated with the reverse scenario. Thus Okun’s second relationship, or the gap version of Okun’s law, took the form: Unemployment rate = c + d \*(Gap between potential output and actual output). The variable c can be interpreted as the unemployment rate associated with full employment. The coefficient d would be positive to conform to the intuition above.

**2.1.2.2 Shapirio-Stiglitz model of Efficiency Wage**

Well-known theory of equilibrium unemployment is the Shapirio-Stiglitz model of efficiency wage. The presence of unemployment in this model because lack of resources by firms to investigate workers’ efforts. However the firm finally can fire worker who is shirking, perfect investigation can be costly enough to maintain. From the firm viewpoint, they will avoid to firing the shirking worker by set wage above the market clearing level to induce workers to exert efforts. The profit-maximizing firm would set the efficiency wage at the level that makes workers indifferent between exerting efforts and shirking. From the worker’s viewpoint, exerting effort guarantees less probability of being unemployed, but it gives disutility of working. Shirking on the other hand gives the highest current utility, but it involves a larger probability of being unemployed (if caught) in the next periods. Assuming exogenous rate of detection, job end and new hiring, we can find the equilibrium unemployment at the level such that the amount of new hiring equals to newly unemployed. (Amornthum, 2004)

The model set up can be as follow (Wincenciak, 2007):

Assume there are (total labor supply is fixed) identical workers, all of whom dislike putting forth effort, but enjoy consuming goods. The workers lifetime utility is:

where u(t) is instantaneous utility at time t, and ρ is the discount rate. The instantaneous utility is defined as:

Wages are denoted by w and e denotes workers effort. There are only two possible values for e: workers may choose to shirk, then e = 0, or to provide some fixed positive level of effort, . At any moment in time, a worker may be in one of three states:

◮ employed and exerting effort (E)

◮ employed and shirking (S)

◮ unemployed (U)

Assume that with probability b per unit of time, jobs naturally end, due to reallocation, etc. If worker begins to work at time , the probability that he is still working at time t is:

Equation (3) states that which is independent of t. It implies that it doesn’t matter for how long the worker worked on the job.

The only choice workers make is the selection of an effort level, which is discrete by assumption. If a worker chooses to exert some positive level of effort (), he receives the wage (w) and retains the job, until exogenous factor cause a separation to occur (with probability b per unit of time). If a worker decides to shirk, there is some probability q per unit of time that he will be caught. The probability that a shirking worker is still employed at time τ later is equal to (prob. that he was not caught shirking) times (prob. that the job did not end naturally).

Workers who are caught shirking are fired and enter the unemployment pool. The probability per unit of time of acquiring new job while in the unemployment pool (the acquisition rate) is α, which is taken by all workers as given. However this transition rate is determined endogenously in the economy as a whole. Firms choose workers at random out of the pool of unemployed workers. Thus α is determined by the rate at which firms are hiring (which is determined by the number of employed workers and the rate at which jobs end) and the number of unemployed workers. Because workers are identical, the probability of finding new job does not depend on how workers became unemployed or how long they are unemployed. Being fired carries no stigma – the next potential employer knows that the worker is not more immoral than any other worker. He knows that the previous firm must have paid sufficiently low wage that it paid for the worker to shirk.

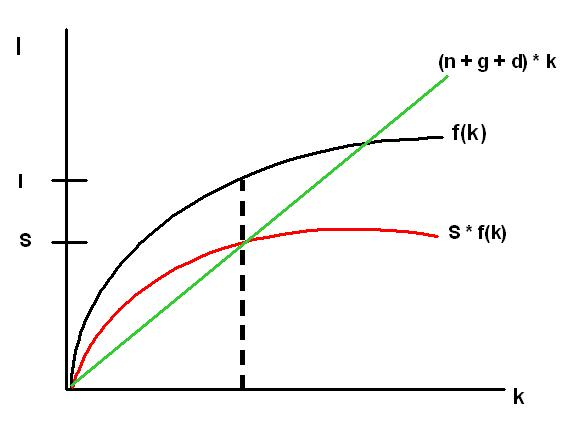
**2.1.3 Economic Growth Theory**

**2.1.3.1 The Neoclassical Growth Model**

The notion of growth as increased stocks of capital goods ([means of production](http://en.wikipedia.org/wiki/Means_of_production)) was codified as the [Solow-Swan Growth Model](http://en.wikipedia.org/wiki/Exogenous_growth_model), which involved a series of equations which showed the relationship between labor-time, capital goods, output, and investment. According to this view, the role of [technological change](http://en.wikipedia.org/wiki/Technological_change) became crucial, even more important than the [accumulation of capital](http://en.wikipedia.org/wiki/Capital_accumulation). This model, developed by [Robert Solow](http://en.wikipedia.org/wiki/Robert_Solow) and [Trevor Swan](http://en.wikipedia.org/wiki/Trevor_Swan) in the 1950s, was the first attempt to model long-run growth analytically. This model assumes that countries use their resources [efficiently](http://en.wikipedia.org/wiki/Efficiency_%28economics%29) and that there are [diminishing returns](http://en.wikipedia.org/wiki/Diminishing_returns) to capital and labor increases. From these two premises, the neoclassical model makes three important predictions. First, increasing capital relative to labor creates economic growth, since people can be more productive given more capital. Second, poor countries with less capital per person will grow faster because each investment in capital will produce a higher return than rich countries with ample capital. Third, because of diminishing returns to capital, economies will eventually reach a point at which any increase in capital will no longer create economic growth. This point is called a "[steady state](http://en.wikipedia.org/wiki/Steady_state_economy)".

**Figure 2.1**

**Solow Model**



Solow Model: The "I" on hash mark represents equilibrium income, the "S" represents equilibrium Saving. I-S=C, or consumption. N = growth in labor, G = growth in technology, and δ = depreciation.

*Source : Romer, David. Advanced Macroeconomics. p9-17*

The model assumes that GDP is produced according to an aggregate production function technology. It is worth flagging that most of the key results for Solow's model can be obtained using any of the standard production functions in microeconomic production theory. However, for concreteness, it will be specific and limit to the case in which the production function takes the Cobb-Douglas form:

Where is capital input and is labor input. Note that an increase in results in higher output without having to raise inputs. Macroeconomists tend to call increases in ”technological progress" and we will loosely refer to this as the “technology" term, but ultimately is simply a measure of productive efficiency. Because an increase in increases the productiveness of the other factors, it is also sometimes known as Total Factor Productivity (TFP).

In addition to the production function, the model has four other equations. (Whelan, 2005)

* Capital accumulates according to

In other words, the addition to the capital stock each period depends positively on savings (this is a closed-economy model so savings equals investment) and negatively on depreciation, which is assumed to take place at rate δ.

* Labor input grows at rate η:
* Technological progress grows at rate g:
* A fraction *s* of output is saved each period.

**2.1.4 Investment Theory**

In Austrian business cycle theory the relationship between investment and unemployment is clear and undisputable. An economic expansion consists of the build-up of capital. An increase in the desire to save causes the rate of interest to fall and investment to rise. Moreover, such capital accumulation entails more roundabout production processes when capital gets located to earlier production stages. A monetary expansion has the undesirable effect of lowering the rate of interest below its natural level, which makes genuine saving fall and forced saving and investment increase, hence causing an unsustainable boom that is invariably followed by a bust. The artificial low rate of interest eventually gives way to a high real rate of interest as overcommitted investors bid for increasingly scarce resources. During the boom period workers are increasingly employed in the earlier stages of production while in the bust phase they are released from failing enterprises and unemployment goes up. It is clear that the theory implies a positive relationship between investment and employment. (Smith and Zoega, 2009)

**2.1.4.1 Keynesian Theory of Investment**

The Keynesian theory of investment places emphasis on the importance of interest rates in investment decisions. But other factors also enter into the model - not least the expected profitability of an investment project. Changes in interest rates should have an effect on the level of planned investment undertaken by private sector businesses in the economy. A fall in interest rates should decrease the cost of investment relative to the potential yield and as result planned capital investment projects on the margin may become worthwhile. A firm will only invest if the discounted yield exceeds the cost of the project. The inverse relationship between investment and the rate of interest can be shown in a figure 2.2. The relationship between the two variables is represented by the marginal efficiency of capital investment (MEC) curve. A fall in the rate of interest from R1 to R2 causes an expansion of planned investment.

**Figure 2.2**

**Investment Curve**

Rate of interest

R1

I2

I1

R2

Marginal Efficiency of capital

Planned of investment

The Simple Keynesian Model, which is also known as the Keynesian Cross, emphasizes one basic point.  That point is that a decrease in aggregate demand can lead to a stable equilibrium with substantial unemployment. The Simple Keynesian Model application first explains the roles of consumption and investment and then explains the accounting identity;

Y = C + I + G

Y is the national income, C is consumption spending, G is government spending, I is an overall data gross domestic investment including investment by both private (domestic and foreign investment) and by the government. Together, these elements determine the equilibrium level of output. The policy analysis experiments study the effects of animal spirits and fiscal policy.  The numerical results illustrate the calculation of a fiscal policy multiplier. A concluding experiment extends the model to make investment a function of the interest rate.  Graphing the shifts in investment caused by changes in interest rates then reveals a simple version of the IS curve found in an IS/LM analysis.

**2.1.4.2 Theory of Foreign Direct Investment**

In recent years FDI has received more and more interest from economists and policymakers. On the one hand, this is probably due to its growing economic importance for both developed and developing countries. According to the UNCTAD, 1999 *World Investment Report*, in the past decade both global output and global sales have grown faster than world GDP and world exports. Thus, sales of foreign affiliates are now greater than world total exports of goods, implying that firms use FDI more than they use exports to service foreign markets. Moreover, FDI inward flows represented in 1998 11% of Gross Fixed Capital Formation (UNCTAD (2000)) revealing the importance that these flows can have for economic growth.

The traditional theory of FDI tries to explain why firms produce abroad instead of simply servicing the markets via exports. After all, multinational companies (MNCs) experience additional costs in producing abroad: higher costs in placing personnel abroad, communication costs (international phone calls, travel expenses for executives or even time costs due to mail delays), language and cultural differences, informational costs on local tax laws and regulations, costs of being outside domestic networks; they also incur higher risks, such as the risks of exchange rate changes or even of expropriation by the host country.

The OLI framework, introduced by Dunning (1977, 1981), considers FDI as determined by Ownership, Location and Internalization advantages which the MNC holds over the foreign producer; when these advantages outweigh the above costs, FDI arises. The ownership advantage includes a product or a production process to which other firms do not have access, such as a patent, blueprint or trade secret, to more intangible advantages such as reputation for quality. The location advantage stems directly from the foreign market, such as low factor prices or customer access, together with trade barriers or transport costs that make FDI more profitable than exporting. Finally, the internalization advantage is a more abstract concept to explain why licensing may not be practiced; it derives from the firm’s interest in maintaining its knowledge assets (such as highly skilled workers who know the firm’s technology) internally

New Theory of FDI refers mainly to the ownership and location advantage and introduces MNCs in general equilibrium models, where they arise endogenously. Helpman (1984) and Helpman and Krugman (1985) – exponents of the early literature - derive the activity of MNCs when they try to explain intra-firm trade, that is, an additional component of international trade. The models are based on two main assumptions: (1) there is product differentiation and economies of scale, and (2) there are some firm inputs that behave like public goods. Moreover, it is assumed that transport costs are zero and the MNCs will split their production process between a headquarter activity, often skill or capital-intensive, and the plant production abroad

Investment is one of important elements of development economy. The literature analyses positive and negative potential effects of FDI inflows on employment. The form of FDI matters in assessing the employment effect of FDI inflows (Jenkins, 2006). If FDI is in the form of greenfield FDI, then it may have a significant positive impact on employment. On the other hand, brownfield FDI involves mergers and acquisitions (M&As) and is not prone to creating new employment. Inflows of FDI might increase employment among local firms in the host country through establishing backward or forward linkages with domestic industries. However, there may exist few or limited linkages to the domestic economy since transnational corporations (TNCs) generally use their international suppliers rather than the domestic firms for most inputs.

**2.1.5 Export Performance and The labor**

Discussion on exports and growth dates back to Adam Smith who argued that exports could function as a mechanism for utilizing surplus resources in the economy, in addition to other dynamic gains it yields. Smith’s theory was further developed by Myint (1958) as the vent for surplus theory. According to the vent for surplus theory, trade provides a new effective demand for the output of the surplus resources in the economy which would have remained unused in the absence of trade. In other words, international trade may activate dormant or idle resources and draw them into economic activity for export production resulting in an awakening of domestic resources through the creation of new wants that make people work harder and produce more products for export (Nurkse, 1961).

International trade overcomes the narrowness of the home market and provides an outlet for the surplus product over and above domestic requirements. Myint (1958) argues that the vent-for-surplus approach is much more plausible in explaining the beginnings of trade, while the comparative advantage theory explains the type of goods traded.

**2.1.6 Trade Liberalization Theory**

The classical trade theory based on Heckscher-Ohlin theorem argues that trade openness will increase employment in developing countries since they are labor-abundant. Since the classical trade theory rests on the unrealistic assumptions such as perfect competition and full-employment, the new trade theory introduce labor market imperfections into its theoretical models. There exists a growing literature on the theoretical relationship between international trade and employment. Although these new models of international trade emphasize that there exists a significant theoretical relationship between trade openness and unemployment, the sign of the net impact of trade on employment varies in different theoretical frameworks.

Hecksher-Ohlin argued that nations do international trade because of differences in endowment. The difference between the opportunity cost of a product of a country to another can occur because of differences in the number or proportion of factors of production owned (endowment factors) of each country. These differences led to an international trade. Countries that have a factor of production are relatively more expensive and will specialize in producing and exporting goods production. Instead, each country will import certain goods if the country has a production factor is relatively rare and expensive in its production (Salvatore, 2004)

According to Akcoraoglu and Acigkoz (2011), the relationship between trade liberalization and employment can be shown in this equation below:

EMPt = b0 + b1 RYt + b2 RWt + b3 t + b4 XYt + b4 MYt + b5 FDIYt + ut

Where bi denotes model coefficients with i = 0,1,…,5. EMPt, RYt, RWt, XYt, MYt and FDIYt represent the (natural) logarithms of employment, real GDP, real wages, ratio of exports to GDP, ratio of imports to GDP and ratio of FDI to GDP, respectively. The ut and t represent a random error term and a time trend, respectively. The time trend in the equation represents the technological progress.

**2.2 Previous Research Results**

There are large numbers of studies which has been tried to find the relationship between international trade policy as a result of trade liberalization and labor forces. Labor forces always become major focus and interesting topics for economists. It is because labor forces are one of mainly factors of production in the world and especially for Indonesia. It is one of abundant factors in the country. There are a lot of pro and contra came out about relationship between economic growth, export performance, foreign direct investment and labor force. All of the information to support this research taken from any journals. Some literatures brought writer more critical to explore the main ideas and the empirical evidences from some countries will strengthen the theory and analysis about linkages of economic growth, export and foreign direct investment on the labor forces.

Romer (1990) has been shown that growth caused the inter-sector change, a change occurred within the sector structure of the economy. This change brought structural unemployment. Technological innovation changed the modes of production. Laborers are unemployed when new technological innovations are introduced. The structural change destroyed job in one firm and created in another. High job turnover is the consequence of new techniques of production. Faster economic growth will create job destruction through skills obsolescence and new machines. Unemployment becomes consistent and critical matter.

Revenga (1992) concluded that higher import competition led to lower employment over the period from 1977 to 1987 using a panel of U.S. manufacturing firms.

Several authors have estimated employment elasticity (a measure of the relationship between employment and economic growth) for a variety of nations. Boltho and Glyn (1995) found elasticity of employment with respect to output growth in the order of 0.5 to 0.6 for a set of OECD countries. An International Labor Organization Report concluded that the responsiveness of employment growth to GDP growth has not declined in industrialized countries as a whole. However, a country-by-country analysis revealed mixed results with little relationship found in Germany, Italy and the UK in the 1990s, thus implying a jobless recovery.

Caves (1996) considered that the efforts made by various countries in attracting foreign direct investments are due to the potential positive effects that this would have on economy. FDI would increase productivity, technology transfer, managerial skills, knowhow, international production networks, reducing unemployment, and access to external markets.

Pianta, Evangelista and Perani (1996) discovered evidence suggesting that restructuring of major economic sectors reduce the relationship between economic growth and employment. Among the G7 countries studied (Canada was excluded), a positive and significant relationship between growth in value added and employment was found only in Germany and the US.

Padalino and Vivarelli (1997) found significant differences in employment elasticity between different countries, with an elasticity of approximately 0.5 for the United States and Canada while elasticity for Japan, France, Germany, Italy and the UK were close to zero.

Pini (1997) estimated that the employment elasticity in Germany and Japan rose between the period 1979-1995 compared to 1960-1979 while it declined in France and Sweden and showed little change in Italy, UK and US. He also detected negative employment elasticity in Italy and Sweden for the period 1990-95.

Wood (1997) reviewed the conventional wisdom that export-oriented industrialization in East Asia promoted distributional equity. In this view trade allows the expansion of sectors that use the abundant factor of production intensively. The abundant factor in the 1970s and 1980s in many East Asia countries was low-skilled labor, and hence trade should have raised the demand for low-skilled labor. Wood argued that this has probably happened.

Revenga (1997) provided a comprehensive survey of the effect of trade liberalization on employment and wage for Mexico employing the OLS method and found that trade liberalization shift down industry product and labor demand particularly at firm level employment.

The paper by Jaffee (1998) has provided empirical evidence concerning the impact of international trade on California employment. He presented results for all 2-digit and 3-digit manufacturing SIC codes and for the computer service industry (SIC code 737). With regard to manufacturing employment, he tested the extent to which US exports and imports influence the growth in US production, California production, and California employment. He found a strong effect of exports on all three of these variables. This is consistent with the hypothesis that production (and employment) growth basically depends on the sum of export and domestic demand growth.

Greenway, Morgan and Wright (1998) found that between 1979 and 1991, when industry in the United Kingdom of Great Britain and Northern Ireland had been integrated into the international economy through foreign direct investment (FDI) and trade, there were large-scale job losses in the manufacturing sector in the United Kingdom. They found that when United Kingdom trade volume increased, demand for labor decreased in the manufacturing sector because trade liberalization generated competition and a requirement for highly-skilled labor in delivering high output. However, this job loss situation was equalized by an increase in financial services as well as primary and extractive employment.

Some empirical studies concluded that trade openness has a negative impact on employment. Milner and Wright (1998) found that trade liberalization led to significant unemployment in case of import and export industries in Mauritius.

Walterskirchen (1999) found employment elasticity for the EU of 0.65 when employing a cross-country analysis of EU countries from 1988-98. Using data from 1970-98 for 7 countries plus the EU as a whole, employment elasticity ranged from 0.24 for Austria to 0.76 for Spain (the elasticity for the US was 0.53). The result indicated that there is still a strong and positive correlation between GDP growth and the change in employment.

Empirical papers have found various results on the effect of international trade on employment. Some other empirical papers found evidence that trade openness has a positive impact on employment. Ghose (2000) found that trade openness increased employment levels of a group of high-growth Asian economies.

Azhar (2001) has analyzed the impact of trade policy regime on FDI contribution to growth of economy over the period of 1970 to 2001. The study found that the growth impact of FDI tends to be greater under an export promotion trade regime compared to an import-substitution regime. In short, these finding suggest that Pakistan’s capacity to progress on economic development will depend on her performance in attracting FDI.

Lipsey (2002) concluded that there are positive effects, but there is not a consistent relationship between FDI stock and economic growth. The potential positive or negative effects on the economy may also depend on the nature of the sector in which investment takes place.

Orbeta (2002) studied the impact of globalization on employment level and structure in Philippines using OLS method. He concluded that increases in the propensity to export shifts the demand for labor upward. For the employment level, increases in export propensity increase the proportion of low-skilled production workers both at the aggregate and manufacturing sub-industries level. In terms of employment structure, the impact of openness on the proportion of women workers is not significant in the aggregate but at the manufacturing sub-industry level, the increase in the propensity to export is a boon for women workers. The result validates the hypothesis for developing countries that increase in exports expands the demand for workers with basic skills.

Palma (2003) provided detailed empirical assessment of the effects of growth of manufactured trade, induced by trade liberalization, on manufacturing employment and wages in Mexico. It resulted declining in employment and wages for low-skilled labor, weakening of the wage-productivity linkage and growth of wage inequality.

Fazekas and Ozsvald (2004) found that more than 80% of net job creation of the corporate sector between 1993 until 2000 can be attributed to foreign companies. However, they also point out that between 2000 and 2002, employment in foreign firms decreased with the shift of FDI from low-value added sectors to medium-tech sectors.

Fu and Balasubramanyam (2005) found a positive and significant impact of exports on employment in China. By using a panel data set for township and village enterprises (TVEs) in 29 provinces in China over 1987-1998, they suggested that a 1 per cent increase in export volume would raise employment by 0.17 per cent.

Axarloglou and Pournarakis (2007) analyzed the effects of FDI inflows on local employment in manufacturing across a sample of states in the United States for the period of 1974-1994. They found that the effects change from one industry to another. While FDI inflows have positive employment effects for a subgroup of industries such as printing & publishing and transportation equipment & instruments, negative effects have been found for another subgroup of industries such as leather &stone, clay and glass.

In the literature, employment effect of FDI in the investment receiving country has been contentious. The debates signal that those effects can change from one country to another depending on the country-specific features and the form of investment. It has been generally accepted that positive employment effects would be higher if the investment takes the form of greenfield investment. On the other hand, if foreign capital comes via M&As and buys privatized enterprises foreign investment will have a limited, even negative effect on the employment level (Vergil and Ayaş 2009).

In a recent study by Karlsson (2009) on Chinese manufacturing industry, FDI is found to be positively affecting the employment growth in foreign-owned firms largely due to their firm characteristics and high survival rates. Similar effects were recorded in privately owned domestic firms as well, possibly due to spillovers.

Said and Elshennawy (2010) report that employment has increased in the manufacturing industries in the case of Egypt over the period 1993- 2006 despite increasing import penetration.

Hasan, Baharom and Azis (2010), examined the effects of export changes on the output and employment in the manufacturing sector. This study analyzed which country among ASEAN 4, namely Indonesia, Philippines, Thailand and Singapore is the most important destination of Malaysian manufacturing exports. The period of study covers the time period 2000-2004. This study concluded that trade changes do have an impact on output and employment. In this study, an increase in export for five years period to ASEAN 4 countries affect the output and employment generation positively. Output and employment generated have moved in the same direction with increases in export.

**CHAPTER III**

**RESEARCH METHODOLOGY**

**3.1 The Definition of Operational Variables**

Definition of The labor

The labor means that people who is employed. In this study, labor is focused on people who are employed in manufacturing industry. In Indonesia, most of labor is employed in manufacturing are low-skilled labor which uses traditional technology to produce manufactured goods.

This study uses data for the labor is total labor of manufacturing industry in Indonesia per year.

Definition of Economic Growth

Economic growth is characterized by an increase in the total output of an economy. It occurs when a society acquires new resources or when society learns to produce more with existing resources. New resources may mean a larger labor forces or an increased capital stock. The production and the use of new machinery and equipment (capital), increases workers’ productivity. Improved productivity also comes from technological change and innovation, the discovery and application of new, efficient production techniques. (Case and Fair, 2003)

This study uses data for the economic growth is total real GDP per year in Indonesia.

Definition of Export Performance

Export performance is measured as actual growth in exports relative to the growth of the country’s export market, which represents the potential export growth for a country assuming that its market shares remain unchanged. In this study we focus on total export of manufactured goods.

Definition of Foreign Direct Investment

Foreign direct investment (FDI) plays an extraordinary and growing role in global business. It can provide a firm with new markets and marketing channels, cheaper production facilities, access to new technology, products, skills and financing. For a host country or the foreign firm which receives the investment, it can provide a source of new technologies, capital, processes, products, organizational technologies and management skills, and as such can provide a strong impetus to economic development. Foreign direct investment, in its classic definition, is defined as a company from one country making a physical investment into building a factory in another country. The direct investment in buildings, machinery and equipment is in contrast with making a portfolio investment, which is considered an indirect investment. ([www.doc.gov-U.S](http://www.doc.gov-U.S) Department of Commerce)

For small and medium sized companies, FDI represents an opportunity to become more actively involved in international business activities. In the past 15 years, the classic definition of FDI as noted above has changed considerably. This notion of a change in the classic definition, however, must be kept in the proper context. Very clearly, over 2/3 of direct foreign investment is still made in the form of fixtures, machinery, equipment and buildings. Moreover, larger multinational corporations and conglomerates still make the overwhelming percentage of FDI. But, with the advent of the Internet, the increasing role of technology, loosening of direct investment restrictions in many markets and decreasing communication costs means that newer, non-traditional forms of investment will play an important role in the future.

This study uses data for foreign direct investment (growth of fixed capital formation in Indonesia)

Definition of Dummy Variables

Dummy variables are a data-classifying device in that they divide a sample into various subgroups based on qualities or attributes (gender, marital status, race, religion, etc) and implicitly allow one to run individual regressions for each subgroup. If there any differences in the response of the regressand to the variation in the qualitative variables in the various subgroups, they will be reflected in the differences in the intercepts or slope coefficients or both of the various subgroup regressions. (Gujarati, 2003)

Since such variables usually indicate the presence or absence of a “quality” or an attribute, such male or female, black or white, democrat or republican, they are essentially nominal scale variables. One way we could “quantify” such attributes is by constructing artificial variables that take on values of 1 or 0, I indicating the presence (or possession) of that attribute and 0 indicating the absence of that attribute. In this study, dummy variables used are dummy variables for Indonesia’s international trade policy, namely DUM which “1” indicates after AFTA implementation for 2002-2010 and “0” before AFTA implementation for 1992-2001.

**3.2 Data Sources**

This research using secondary data as based on estimation. Secondary data is used because those data is available in several online sources, several books even journals. Source of data is very important while doing research because data can help researcher to find correlation among variables which were researched. The data taken by the author in this research is derived from the Central Bureau of Statistics. Year of data is data for 1992 until 2010.

The data used in this research consists of:

1. Total labor of manufacturing industry in Indonesia per year
2. Real GDP in Indonesia per year
3. Total export of non-oil and gas specifically manufactured goods
4. Foreign direct investment (growth of fixed capital formation in Indonesia)

**3.3 Model of Analysis**

The main purpose of the study is to assess the linkages of factors are affected by international trade policy within trade liberalization atmosphere such as economic growth, export performance and foreign direct investment towards the labor in Indonesia. The time period for this paper is 1992-2010. The theoretical model that used to investigate the interaction of GDP, export, FDI and the labor is based on the following production function:

Where Y is the output, K is capital and L is labor and A is the technology or the efficiency of production.

In this study we have relationship between GDP, export, FDI and the labor are formulated based on production function set above as:

Mathematically:

In empirical test about the relationship between the labor, GDP, export and FDI use multiple linear transformation and the transformation of the double log as based on Akcoraoglu and Acikgoz (2011) in the literature review, the model of this research is:

Where,

: The Labor number of Manufacturing industry per year

: Real Gross Domestic Product per year

: Export of non oil and gas (manufactured goods) per year

: Foreign Direct Investment per year

DUM :Dummy variables, equal to “1” means after implementation of AFTA and “0” before implementation of AFTA

, , , : Regression Coefficient

α0 :Constanta

t : years

The study by Akcoraoglu and Acikgoz (2011) found that estimations indicate a positive and significant empirical relationship between exports and employment in the long run. The empirical findings also show that the impact of FDI flows on employment is negative and significant in the long run. One of the main reasons behind this empirical result is that the majority of FDI flows are in the form of foreign acquisitions and mergers rather than greenfield investment.

The model is extended to the work of Akcoraoglu and Acikgoz and included other variables to observe the interaction between employment, GDP, export and FDI. Past studies had shown a positive impact of GDP and export on employment but negative impact from FDI on employment. The stock of efficient human capital is required to absorb the technologies brought by FDI and it determines whether the potential spillover effect is realized. The host country requires sufficient number of human capital to utilize the technologies brought by FDI, meaning that higher the level of human capital in the host country, higher the effect of FDI in the economic growth of the host country.

**3.4 The Understanding of Statistical Method**

The approach that used to this research is a multiple linear regression analysis using Ordinary Least Square (OLS). In the process of testing model the equation in this research used program E-views 6.

**3.4.1 Goodness of Fit**

Goodness of fit of the fitted regression line fits the data; that is we shall find out how “well” the sample regression line fits the data (Gujarati, 2003). In determination whether the model used is good or not, there are several criteria for statistical testing of the coefficient of determination or R-Sq, F-test and t-test.

* Coefficient of Determination/ R-Square (R2)

The overall goodness of fit of the regression model is measured by the coefficient of determination,r2.  It tells what proportion of the variation in dependent variable, or regressand is explained by the explanatory variable or regressor. This coefficient lies between 0 and 1; the closer it is to 1, the better is the fit. (Gujarati, 2003) Or we can say R-squared is the squared of the correlation coefficient between the dependent variable and the estimate of it produced by the regressors or equivalently defined as the ratio of regression variance of total variance.

* F-test

F-test is used to see whether the explanatory variables simultaneously gave a significant effect or no effect on the dependent variable. First step is creates hypothesis:

H0 = independent variable have no significant effect to the dependent variable

Ha = independent variable significantly affect to the dependent variable

R2 = determination coefficient

K = independent variable

n = total sample

F-table = [α; df1 = (k-1); df2 = (n-k-1)]

If F-test > F-table, H0 is rejected and accept Ha, it means that all of independent variables significantly affect dependent variable.

* T-test

T-test is used to see whether the independent variables individually significant or no effect on the dependent variable. The hypothesis are:

H0: β = 0, means that coefficient of dependent does not have significant effect with independent variable

Ha: β ≠ 0, means that coefficient of dependent have significant effect with independent variable.

If T-test > t-table, it means Ho is rejected. It means that each independent variable significantly affect dependent variable.

**3.4.2 Classical Assumption Test**

A multiple regression equation testing the assumption is needed to see whether the regression model was created could be used. Regression model obtained from ordinary least square method is the OLS regression model that produces linear unbiased estimator of the best (best linear unbiased estimator/ BLUE). This condition occurs when filled several assumptions called assumption-free classics including multicollinearity, heterocedasticity and autocorrelation.

* Multicollinearity Test

The term multicollinearity is due to Ragnar Frisch (1934). Originally it meant the existence of a ‘perfect’ or exact linear relationship among some or all explanatory variables of a regression model. There are two reason multicollinearity occurs in regression model they are because of error theory in regression function formation and because of total observations that will be analyzing in regression model are too small.

There are several methods to examine the multicollinearity such as (Winarno, 2009):

* + Using variance inflation factor (VIF), if the value of VIF < 10 so there is no problem with multicollinearity
  + Using correlation coefficient, if value of correlation coefficient among each independent variables are less than 0.89 so the model is free from multicollinearity or no problem with multicollinearity.
  + Using coefficient of determination, if value of determination coefficient whether R2 or R-square is greater than 0.60 but there is no independent variable affecting dependent variable, it means that model has multicollinearity problem.
* Heteroscedasticity Test

Heterocedasticity means that if the OLS assumption that the variance of the error term is constant for all values of the independent variables does not hold. This leads to biased and inefficient (i.e., larger than minimum variance) estimates of the standard errors (and thus, incorrect statistical tests and confidence intervals). A good regression model is regression model which has the same of residual variance in one analyzing period to another analyzing period or we can say that there is a relationship between value predicted with its studentized delete residual value.

The way to predict the presence or the absence of heterocedasticity can be seen from the White’s test. If the probability value of Chi-Square on White’s test results without cross terms greater α = 5%, it can be said that the model equation is not affected by regression heterocedasticity. (Winarno, 2009). There are several testing methods can be used such as the Park test, Test Glesjer, seeing patterns regression graphics and Spearman Correlation Coefficient test.

* Autocorrelation Test

The term autocorrelation may be defined as ‘correlation between members of series of observations ordered in time (as in time series data) or space (as in cross sectional data). (Kendall and Buckland (1971). Autocorrelation test is used to determine whether there is any deviation classical autocorrelation assumption, namely the correlation between residuals in one observation with another observation on the regression model. Prerequisite that should be fulfilled is the absence of autocorrelation in the regression model.

Method to measure the existence of autocorrelation are :

1. Durbin – Watson
2. Breusch – Godfrey

* Durbin Watson test.

Testing method often used is by Durbin-Watson test (DW test) with the following conditions, (Winarno, 2009):

* + If d is smaller than dL or greater than (4-dL), then the null hypothesis is rejected which means there is autocorrelation
  + If d lies between dU and (4-dU), the null hypothesis is accepted which means there is no autocorrelation
  + If d lies between dL and dU or in between (4-dU) and (4-dL), it does not produce definitive conclusions



**Table 3.1**

**Durbin Watson *d* Stat**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Reject H0,  There is positive autocorrelation | Can’t be decided | Do not reject H0,  There is no autocorrelation | Can’t be decided | Reject H0,  There is negative autocorrrelation |

0 dL du 2 4-du 4-dL 4

Value of dU and dL can be obtained from table Durbin Watson statistics which depends on the number of observations and many variables explained. Durbin Watson test formula as follow:

Where:

d = Durbin Watson value,

e = residual

DW test is relatively easy, but there are some weaknesses that must be known. The disadvantage is:

• Test DW independent valid only when the variables are random (stochastic).

• Test DW cannot be used in moving average models (moving average)

To overcome the drawbacks mentioned, can be used Breusch-Godfrey test (BG)

* Breusch-Godfrey.

In this way, we only see the value of R2 probability. (Winarno, 2009)

• If the value probability> α = 5%, meaning there is no autocorrelation.

• If the value probability ≤ α = 5%, meaning there is autocorrelation.

* Normality Test

One of the assumption of classical linear regression model is the residual has to be normally distributed. The formal residual normality test introduced by Jarque – Bera is used in this research. An easy way to find normality test is by using coefficient of Jarque-Bera and its probability because both of them are correlated each other. If coefficient of Jarque-Bera is less than 2 so data is distributed normally and if the probability is greater than 5% so data is also distributed normally. (Winarno, 2009)

**CHAPTER IV**

**MACRO-OVERVIEW OF MANUFACTURING LABOR IN INDONESIA (1992-2010)**

**4.1 The Labor of Manufacturing in relation with Economic Growth**

For most Asian economies, small-medium enterprises are considered the engine of economic growth by virtue of their numbers and their significant economic and social contributions. Small-medium enterprises in developing Asia account for about 80 per cent of all non-agricultural enterprises, and generate about the same percentage of total employment. In addition, they contribute between 40 and 70 per cent of total value added (Tambunan 2008a).

In Indonesia, small-medium enterprises have historically been the main players in domestic economic activities, especially as providers of employment opportunities, and hence generators of primary or secondary sources of income for many households. For low-income and poor farm households in rural areas, SMEs, especially small enterprises (including microenterprises), in non-farm activities are a particularly important source of employment.

Typically, small-medium enterprises in Indonesia account for more than 90 per cent of all firms, and thus they are the largest source of employment, providing a livelihood for over 90 per cent of the country’s workforce, especially women and youth. Indonesia small-medium enterprises are most concentrated in agriculture, followed by the hospitality industry and the manufacturing industry. Small-medium enterprises for manufacturing industries are involved mainly in simple traditional products, such as wood products and furniture, textiles and garments, footwear, and food and beverages. Only a small portion of small-medium enterprises produce machinery, production tools or automotive components. The latter is generally carried out through subcontracting arrangements with multinational car companies (Thee 1993 and Tambunan 2008a).

It is predicted in year of 1999 the number of establishments of the small scale industry increased that was 15.93 percent from year 1998. Increasing number of establishments in 1999 parallel with increased of workers and labor cost as well. Meanwhile, the number of workers in 1999 also increased compared with that of 1998 and this occurred in all types of industries. Small scale industries have the biggest increase (18.15 percent) while household increased 14.25 percent. In 2000, the number of workers was estimated increase about 12.70 percent for small scale industries and 3.80 percent for household industries. (Statistik Indonesia, 2000)

The number of establishment of small scale industries in 2003 were decreased by 1.14 percent. While in 2004, the number of establishment of small scale industries were estimated increased by 5.00 percent comparing to 2003. Parallel with the decrease of the number of establishment, the number of workers of small scale industries in 2003 was also decreased compared to that of 2002. The number of worker of small scale industries was decreased by 2.21 percent. But by increase of the number of small scale industries in 2004, the number of worker was also estimated increased by 8.11 percent. (Statistik Indonesia, 2004)

In 2006, the number of establishments of small scale industries increased significantly by 25.08 percent compared to 2005. In 2007 the number of establishment of small scale industries were estimated to increase by 0.75 percent. (Statistik Indonesia, 2008)

From 89.8 million people who have been working, around 45.28 percent of them worked at agricultural sector. The other sector which have big enough role in employment is covered trade (20.58 percent), manufacturing industry (12.96 percent) and services (10.66 percent). In Java Island the role of agricultural sector is less than other island, however the role of manufacturing industry and trade sector in employment in Java Island is more than its other island.

In August 2007, the total number of workers and employees in Indonesia was 28.06 percent of the total working population. The biggest percentage of those worked in services, manufacturing, trade, agricultural and construction sector.

Based on *Statistik Indonesia* from Central Bureau Statistics, number of workers in manufacturing increase from 1992 up to the end of 1997 as much 8.255.496 of people to 11.214.822 of people. But in beginning of 1998, number of workers slumped to only 9.933.622 of people because Indonesia hit by economic recession. The number of worker felt down significantly as a result of crisis where unstable economy occurred and there are a lot of firms are collapsed.

*Source : Own processed data*

In 1999, number of worker raises amazingly as much 11.515.955 of people because the government takes some recovery policy to maintain the economy. Year by year that are 2000,2001 and 2001 after crisis and starting era for Indonesia to implement free trade activity through AFTA, number of worker in manufacturing goes up as much 11.641.756 then become 12.086.122 and next 12.109.997. But only a year after implemented AFTA in 2003, number of manufacturing worker in Indonesia goes down to 10.927.342 of people because Indonesia tend to enjoy cheap-imported goods rather than compete with those product because in the beginning of implementation AFTA, Indonesia is not really ready yet to face free trade in terms of quality and quantity of manufactured products so it caused manufacturing firms do not really need to hire more people.

Slowly but sure, in 2004 until 2009 number of worker increase from 11.070.498 of people to 12.839.800 and it catch the highest rank of worker number in 2010 as much 13.824.251 of people.

The main indicator for economic development in one country is the economic growth. In this research, to measure the economic growth annually, we use gross domestic product. The Indonesian economy has recorded strong growth over the past few decades, and in recent years the firm pace of economic expansion has been accompanied by reduced output volatility and relatively stable inflation. Indonesia’s economic performance has been shaped by government policy, the country’s endowment of natural resources and its young and growing labor force. Alongside the industrialization of its economy, Indonesia’s trade openness has increased over the past half century.

Indonesia’s economy has expanded strongly over recent decades, notwithstanding the sharp economic contraction that occurred during the 1997–1998 Over time, the structure of the Indonesian economy has changed considerably. Historically, the economy has been heavily weighted towards the agricultural sector, reflecting both its stage of economic development and government policies in the 1950s and 1960s to promote agricultural self-sufficiency. A gradual process of industrialization and urbanization began in the late 1960s, and accelerated in the 1980s as falling oil prices saw the Indonesian Government focus on diversifying away from oil exports and towards manufactured goods exports (Goeltom, 2007)

Growth of Indonesian economy showed a better performance for the year 2000 than 1999. Transformation of part Indonesian population from agriculture sector to manufacturing sector reflected by shared of both sectors to GDP. Since 1991 the manufacturing industry has been the major contributor to GDP. In the year 2000, the contribution of manufacturing industry to GDP was 26.04 percent while agricultural sector only contributed around 16.92 percent.

For the year 2004, growth rate of Indonesian economy showed a better performance than that of in 2003. Based on GDP at 2000 constant prices, growth of Indonesian economy in 2004 was 5.13 percent while growth of non-oil and gas GDP was 6.17 percent. Almost all of the sectors of economy, which compose the GDP, produced a positive growth in 2004 except the mining and quarrying sector. In 2004, the contribution of manufacturing industry to GDP was 28.34 percent. (Statistik Indonesia, 2004)

*Source : Own processed data*

The growth rate of Indonesian economy in first semester 2008 showed a slightly increased performance. Based on GDP at constant prices, growth of Indonesian economy in first semester 2008 was 6.36 percent while growth of non-oil and gas GDP was 6.85 percent. In the first semester 2008, the contribution of manufacturing industry to GDP was 27.2 percent, followed by agriculture sector about 14.7 percent.

From the figure above we also can see that GDP for year 1997 to 1998 is decline because there is Asian financial crisis at the time. But next year in 1999, GDP is growing up even for smaller number. Then GDP for Indonesia always increase year by year as many foreign and domestic economy policy implemented. The curve following shown in figure 4.3 for labor progress and GDP Indonesia are quite same, they have positive slope. It shows us that the positive growing of GDP in Indonesia leads to the positive growing of the number of labor.

*Source: Own processed data*

**4.2 The Labor of Manufacturing in relation with Export Performance**

During the New Order era, trade policy underwent a fundamental change in Indonesia. At the same time, development strategy evolved from the inward-looking import substitution approach of the oil boom in the early 1970s to an outward-looking policy of export promotion in the mid-1980s once the oil boom ended. The process of the trade reform that was part of the economic reform from 1966 to 2006 can be divided into three phases: 1967-1984, 1985-1997 (just before the economic crisis), and 1998 (during the crisis) onwards. (Tambunan, 2007)

The first phase was a period of limited liberalization and deregulation, as the Government implemented limited tariff reduction and removed quantitative restrictions and other non-tariff barriers on a small range of imported goods, particularly those which were essential for domestic consumption and industries.

The second phase was a period of extensive liberalization and deregulation, with a broad range of measures. Between 1985 and 1992, the simple (un-weighted) average tariff was cut to just below 20 per cent, down from 27 per cent. Non-tariff barriers as a percentage of tariff lines had declined from 32 down to 17 per cent by 1990 and to 5 per cent by 1992; as a percentage of imports they fell from 43 per cent in 1986 down to 13 per cent by 1990 (Iqbal and Rashid 2001). The private sector began to play a larger role during this period, as reflected by the increase in private domestic as well as foreign investments in Indonesia. There was also an emphasis on exports of non-oil and gas products, especially labor intensive manufactured products, such as textiles and garments, footwear and wood products. Restrictions on foreign direct investment and ownership regulations, particularly on export-oriented investments, were gradually relaxed (Pangestu 2001).

The third phase is the broader post-crisis reform, which began with the International Monetary Fund-sponsored deregulation under a letter of intent and continued further with Indonesia’s own initiatives. One of the most heavily regulated and protected sectors of the Indonesian economy, the automobile industry, was significantly affected by these developments. The tariff on completely built-up sedans was reduced to 200 per cent in 1995 and to 90 per cent in 2003. (Tambunan, 2008b)

In 1998, the value of non-oil and gas export reached 83.88 percent of total Indonesia exports. Unfortunately, it dropped to 79.88 percent in 1999. The decrease was attributed to the economic and financial crisis which has occurred since the mid of 1997. Based on the classification of export by SITC categories, SITC 3 category dominated the export value, followed by SITC 6 (manufactured goods classified chiefly by materials). In 2000, export value of SITC 3 and SITC 6 were increased compared to 1999. Export value of SITC 3 increased by 40.14 percent and SITC 6 increased by 11.87 percent. (Statistik Indonesia, 2000)

*Source : Own processed data*

With regard to manufacturing industry, garment, textile and plywood showed a significant role. The value of garment’s export increased from US $ 3,856.9 million in 1999 to US $ 4,734.0 million in 2000 and textile increased from US $ 3,018.9 million to US $ 3,505.0 million. The increasing in value export of these commodities were 22.74 percent and 16.10 percent respectively. In 2004, export value of SITC 3 and SITC 6 were increase compared to 2003 as much 18.15 percent for SITC 3 and 15.13 for SITC 6.

The export value of garment, textile and plywood reached to US $ 4,105.3 million, US $ 2,922.7 million and US $ 1,662.9 million respectively in 2003. Until December 2004, the export value of garment reached to US $ 4,454.2 million or increased by 8.50 percent. Meanwhile the export value of textile increased by 7.84 percent became US $ 3,151.9. In the other hand, the value of plywood export decrease by 5.17 percent became US $ 1,576.9 million respectively, compared to the same period of last year. In 2007, export value of SITC 3 and SITC 6 were increased compared to 2006. Export value of SITC 3 increased by 5.76 percent and SITC 6 increased by 10.01 percent.

From the figure below we can see that regarding to the total export of manufacturing such as garment, textiles and plywood, implicitly it also show that many of labor are absorbed to this activity to produce those products. According to Tambunan (2008a), which state that manufacturing industries are involved mainly simple traditional products such as wood products and furniture, textiles and garments, footwear and food and beverages and in case of small medium enterprises while many of labor turn in this sector. We can also state that the positive growing of export performance will enhance the positive growing of the number of labor.

*Source: Own processed data*

**4.3 The Labor of Manufacturing in relation with FDI**

Foreign direct investment (FDI) can play a significant role in the development process of host economies. In addition to providing capital inflows, FDI can be a vehicle for obtaining foreign technology, knowledge, managerial skills, and other important inputs; for integrating into international marketing, distribution and production networks; and for improving the international competitiveness of firms and the economic performance of countries. However, neither inflows of FDI nor the benefits from such inflows are automatic.

The effort of Indonesia to opened itself up in world economy in order to support development especially in economic side. Nowadays, almost all of countries in the world especially developing country needed the foreign direct investment because foreign direct investment was really important thing in country development. Through the influx of foreign capital, it is expected for potential natural wealth and human resource there can be more fully utilized and strengthening of national economic growth sectors, especially export-oriented manufacturing industry.

The amount invested by foreign investors from 1967 to June 1998 reached a value of 213 billion U.S. dollars. From the total investment, the most widely planted in the manufacturing industry that is equal to 137 billion U.S. dollars, or about 64.24 percent of total foreign direct investment.

*Source : Own processed data*

In 1996, the interests of foreign investors to invest in Indonesia look bigger. In the same year, foreign direct investment increased by around 20.02 per cent over the previous year. Dealing with economic conditions in the country in 1997, it cause foreign investors hesitate to invest their capital. It is seen from the decline in foreign direct investment of about 17.62 percent. In 1998, from January to June 1998 the value of foreign direct investment is still relatively small compared to previous years amounting to 8 billion U.S. dollar. (Laporan Perekonomian Indonesia, 1998)

Foreign direct investment which is approved by government always fluctuated every year. In 2000, foreign direct investment increased by 41.53 percent from 1999, whereas in 2001 and 2002 the value of foreign direct investment decreased respectively by 35.23 percent and 2.40 percent. Foreign direct investment has not significantly due to unfavorable economic conditions today, but there is still investor interest from foreign and domestic investment in Indonesia.

Sector which is most in demand by foreign investors in Indonesia is the industrial sector. It showed by the amount of investment received by the sector in 1999 and 2000 that reached more than 60 percent of the total value of foreign direct investment. Based on the region, the most interested are for foreign investor is Java and Sumatera Island. It is because many of manufacturing industry located in Java and Sumatera.

In 2008, foreign investor came to Indonesia reached US $ 14871.4 million and it is increase as much 43.80 percent significantly from 2007. The foreign investor is still interest in industrial sector as investment because this sector still seems give advantage and going to be developed in term of technology. (Laporan Perekonomian Indonesia, 2008)

The movement of foreign direct investment in 2009 is decline. It showed by declining as much 27.28 percent over 2008. The declining of foreign direct investment in Indonesia in 2009 affected the dominant sector for foreign direct investment. The ability of industrial sector to attracted foreign investor become lower, which it is only absorb 35.42 percent of foreign investment or declined as much 15.15 percent over 2008.

*Source : Own processed data*

The development of foreign direct investment in Indonesia show that most of FDI come to manufacturing industry which means that while FDI can be a vehicle for obtaining foreign technology, knowledge, managerial skills, and other important inputs; for integrating into international marketing, distribution and production networks; and for improving the international competitiveness of firms and the economic performance of countries. It will also lead to technological innovations which change the modes of production, from using laborer to using machines. (Romer, 1990). Most of FDI inflows come to medium and large enterprises so the new technology will replace human as laborer.

**CHAPTER V**

**EMPIRICAL FINDINGS AND ITS ANALYSIS**

**5.1 General Statistical Results**

After explained about macro-overview of manufacturing labor in Indonesia period 1992 until 2010, so this chapter describes research result and secondary testing data collected from many sources to study the analysis of impact economic growth, export performance and FDI toward labor of manufacturing. Analysis descriptions are based on the secondary data collected from several sources and processed by Eviews 6. This table shows the regression results between the number of manufacturing labor to gross domestic product, total of manufactured goods export and foreign direct investment. The regression is shown in table 5.1 below:

**Table 5.1: Regression of factors influencing the manufacturing labor in Indonesia**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Dependent Variable: LNL | | |  |  |
| Method: Least Squares | | |  |  |
| Date: 07/12/12 Time: 07:24 | | |  |  |
| Sample: 1992 2010 | | |  |  |
| Included observations: 19 | | |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|  |  |  |  |  |
|  |  |  |  |  |
| LNGDP | 0.436198 | 0.149415 | 2.919373 | 0.0112 |
| LNEX | 0.090121 | 0.025562 | 3.525595 | 0.0034 |
| LNFDI | -0.002914 | 0.016551 | -0.176062 | 0.8628 |
| DUM | -0.093604 | 0.051688 | -1.810956 | 0.0917 |
| C | 8.494622 | 1.861901 | 4.562337 | 0.0004 |
|  |  |  |  |  |
|  |  |  |  |  |
| R-squared | 0.884446 | Mean dependent var | | 16.22574 |
| Adjusted R-squared | 0.851430 | S.D. dependent var | | 0.130084 |
| S.E. of regression | 0.050141 | Akaike info criterion | | -2.927038 |
| Sum squared resid | 0.035197 | Schwarz criterion | | -2.678501 |
| Log likelihood | 32.80686 | Hannan-Quinn criter. | | -2.884976 |
| F-statistic | 26.78878 | Durbin-Watson stat | | 1.912281 |
| Prob(F-statistic) | 0.000002 |  |  |  |
|  |  |  |  |  |

*Source : Data is processed by Eview 6*

Based on the result of regression, the regression models for the number of labor (L), Gross Domestic Product (GDP), manufactured goods Export (EX) and Foreign Direct Investment (FDI), the estimation equation for the number of labor that is:

T-test (4.56) (2.92) (3.53) (-0.18)

(-1.81)

R2  = 0.884446

Adjusted R2 = 0.851430

DW- stat = 1.912281

F-stat = 26.78878

From the regression equation above, we are able to conclude that; if all independent variables are equal to 0 (zero) so the labor which represented by the number of manufacturing labor is (8.49) %. From the regression result, the value of coefficient of determination (R2) is 0.88. This value shows a high measurement for the independent variables to explain their effect on the dependent variable in the model. It means that the variation of the dependent variable can be explained by the independent variables about 88 %, when the rest 12% are explained by factors outside the model.

Statistical test is used to see any influence of independent variables toward dependent variable. After estimation, the value of F-statistic is 26.79. We should compare this result with F-table. To find the F-table value, we must get the degree of freedom for numerator (k-1) and the degree of freedom for denominator (n-k). With the level of significance α = 5%, the degree of freedom for numerator is 4= (5-1) and the degree of freedom for denominator is 14 = (19-5). It can be found that value of F table in point (4 : 14) is 3.11.

F-stat > F-table, 26.79 > 3.11, it mean gross domestic product, manufactured goods export and foreign direct investment are significantly influence the number of manufacturing labor.

Multicollinearity test

To detect multicollinearity within the regression model, we can observe from coefficient correlation (r) between independent variables. If the value of coefficient correlation of each independent variable is less than 0.89, it means the model is free from multocollinearity. But if the value of coefficient correlation is greater than 0.89, it assumes strong correlation among independent variables or the model detects multicollinearity on it.

With the help of Eviews computer program, the writer can search the value of each r and the result is shown on table 5.2 as following:

**Table 5.2**

**Correlation Matrix of Multicollinearity Result**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | LNL | LNGDP | LNEX | LNFDI | DUM |
| LNL | 1.000000 | 0.869362 | 0.878980 | 0.648490 | 0.626498 |
| LNGDP | 0.869362 | 1.000000 | 0.808641 | 0.616662 | 0.816915 |
| LNEX | 0.878980 | 0.808641 | 1.000000 | 0.550391 | 0.716688 |
| LNFDI | 0.648490 | 0.616662 | 0.550391 | 1.000000 | 0.235677 |
| DUM | 0.626498 | 0.816915 | 0.716688 | 0.235677 | 1.000000 |

From the table above, it can be concluded that the values of the correlation among the independent variables are relatively high. According to the result of the data above, r <0.89, it means that there is no multicollinearity on the model.

Heteroscedasticity test

In this research, to detect Heterocedasticity problem on regression equation we use white Heterocedasticity without cross term method. If the value of Chi-square is greater than 5%, indicate there is no Heterocedasticity on regression equation model.

**Table 5.3 Heterocedasticity Test**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Heteroskedasticity Test: White | | | |  |
|  |  |  |  |  |
|  |  |  |  |  |
| F-statistic | 15.88612 | Prob. F(13,5) | | 0.0033 |
| Obs\*R-squared | 18.55087 | Prob. Chi-Square(13) | | 0.1377 |
| Scaled explained SS | 15.00274 | Prob. Chi-Square(13) | | 0.3072 |
|  |  |  |  |  |
|  |  |  |  |  |

From estimation result, writer got the value of Chi-squares probability for 0.1377, which is greater than 5%. It means there is no Heterocedasticity problem on regress equation model.

Autocorrelation test

Autocorrelation means that there is correlation between one intercept and others. In this case, to know any indication on autocorrelation problem, are able to use Durbin Watson tests and Breuschg-Godfrey (Lagrage Multiplier).

* **Durbin-Watson**

Criteria of autocorrelation testing with k = 5; n = 19, and α = 5 %, in Durbin-Watson Significance Table, dL = 0.75 and dU =2.02, are shown on the figure 5.1 following:

**Figure 5.1 Durbin-Watson Test**

Accepted and Unaccepted Hypothesis

For Autocorrelation Testing On α = 5%

Ho is rejected Ho is rejected

1.9122

0.75 dL 0 dU 2.02 4

Based on D-W *d* Stat figure, from analysis result of D-W for 1.9122, it is located on du < d < 4-du or between 0.75 (du) of lower border and 2.02 (4-dU) of upper border. In other words, analysis of D-W do accepted Ho. It means there is no indication of autocorrelation.

* **Breusch Godfrey ( Lagrage Multiplier)**

If probability Obs\* R-Square > 0.05 there is no indication of autocorrelation and if probability Obs\* R-Square < 0.05 there is indication autocorrelation

**Table 5.4 Breusch Godfrey Test**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Breusch-Godfrey Serial Correlation LM Test: | | | |  |
|  |  |  |  |  |
|  |  |  |  |  |
| F-statistic | 0.102976 | Prob. F(2,12) | | 0.9029 |
| Obs\*R-squared | 0.320589 | Prob. Chi-Square(2) | | 0.8519 |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

The table show the result that value of probability Obs\* R-Square greater than 0.05 the value is 0.852, it means there is no indication of autocorrelation.

Normality test

Based on the figure 5.2, the value of Jarque-Bera is 1.247885 which is less than 2, it means that data are normally distributed. In addition, the probability of Jarque-Bera is 0.535828. Since the probability of Jarque-Bera is exceeds 0.05, it means that residual of this estimated model is normally distributed. From the picture we can also see that the shape of the graph is normally distributed.

**Figure 5.2 Normality test**



So, we can conclude that the data of the analysis is free from classical assumption and we can continue to analyze the estimation results

**5.2 The Relation between the Labor of Manufacturing with Economic Growth**

Based on equation above, the value of regression coefficient for gross domestic product (GDP) is about 0.44, assumed increasing for 1% while other independent variables are constant so the number of labor will increase as much 0.44%.

To investigate influence of independent variables to dependent variables, we use T-test. We should compare T-test with T-table to see the data is significant or not. The way to find the critical t value is: T table = t α df (n-k), where: α is level of significance, degree of freedom (df) is 14, using 19 number of data and 5 number of parameters. The, T-table for data is 1.761.

An estimation result show, the value of T-test from GDP is 2.92 while T-table 1.761, conclude that T-test > T-table. Regression coefficient for GDP is 0.44. It means GDP is positive and significant to influence the labor under trade liberalization as shown by dummy variables. Based on the result, the case in Indonesia show GDP might contribute a quite big number to enhance the number of labor rather than other factor. It’s a dominant factor to drive the number of labor.

This result is absolutely same with mostly previous studies which detect positive relationship between GDP and the labor. Especially, after implementation of AFTA, Indonesia tend to compete in international trade by creating as much as possible of output and export it then this increasing of output will contribute to enhance the number of labor in manufacturing industry.

Since the 1980s, Indonesia changed the international trade policy from an inward-looking import substitution policy to an outward-looking export promotion strategy. Indonesia has also removed all non-tariff barriers and export restrictions after signed AFTA and it is a chance for Indonesia to export more within ASEAN countries to increase the economic growth as well. The bigger number of gross domestic product within a country means that the bigger number of labor is absorbed to produce or create higher economic growth. Even small-medium enterprises can take an action in international trade especially for commodity that using abundant factors domestically such as manufactured goods include garments, textiles, food and beverages and footwear. Since Indonesia as a labor-abundant country and it will generate more labor in order to work in manufacturing activity.

There are several studies found that gross domestic product has positive and significant on employment. One of previous studies is Ewald Walterskirchen (1999) on “The Relationship between Growth, Employment and Unemployment in the EU” state that this study examines the relationship between GDP and employment in EU countries using cross country analysis for period 1988-1998. The result indicated that there is still a strong and positive correlation between GDP-growth and the change in employment. But employment, of course, will rise only if economic growth rates are outstripping productivity gains. An increase in labor supply tends to raise employment and dampen productivity increases significantly and an increase in labor-intensive domestic demand affects employment much more than an increase in capital-intensive exports.

William Seyfried on “Examining the Relationship between Employment and Economic Growth in the Ten Largest States” found that economic growth has some immediate impact on employment, its effects continue for several quarters in most of the states considered.

**5.3 The Relation between the Labor of Manufacturing with Export Performance**

The value of regression coefficient for variable export (EX) is 0.090 assumed increasing for 1% while other independent variables are constant, the number of labor will increase as much 0.090%.

From the estimation result, T-test for manufactured goods export is greater than T-table. T-test for manufactured goods export is 3.53 greater than T-table 1.761. It means manufactured goods export is significant. Regression coefficient for manufactured goods export is 0.090, it is indicate that manufactured goods export show positive relationship and significant influence on the number of labor under trade liberalization as shown by dummy variable. For Indonesia case, it is clearly that number of manufacturing industries especially small medium enterprises growing rapidly and it cause many labor participation are hired. The greater the number of manufactured goods produced then the greater the number of workers should be hired.

The previous study by Zaki (2010) found that at the macroeconomic level, exports have a significant and positive effect on employment over the period 1960 to 2009 and he used a micro-simulation for Egypt and found that the effect of trade liberalization policies depends on the characteristics of the individual and the working sector. Thanks to the expansion of textiles, garments, chemical and services, employment increases (especially for women in textiles and garments). In addition, inequality decreases for urban and rural skilled men as well as skilled and unskilled women working in urban areas. By contrast, inequality increases among unskilled men and skilled women in rural areas.

**5.4 The Relation between the Labor of Manufacturing with FDI**

The value of regression coefficient for foreign direct investment (FDI) is -0.003, its assumed increase for 1% while other independent variables are constant, the number of labor will decline to 0.003%.

For variable of foreign direct investment, T-test is -0.18 less than T-table 1.761, in this research foreign direct investment is insignificant. Regression coefficient for FDI is -0.003, it is indicates FDI show negative and insignificant influence to the number of labor. The contribution of foreign direct investment is very small to increase the number of manufacturing labor because most of the majority of FDI inflows took the form of M&As rather than greenfield investment. Most of FDI inflows to Indonesia form as merger and acquisition which is means that restructuring or reorganization of the company internally. Some previous studies also explore that foreign direct investment have negative relationship on employment. Fawzy (2002) found since that the increase in the level of unemployment since early 1990s has been primarily due to the inability of economic policies in general and investment policies in particular to achieve high and labor-intensive growth rates. These policies led to modest investment levels, which weakened the economy’s ability to create jobs, and resulted in investment patterns biased against labor-intensive growth.

Vergil and Ayaş (2009) examined the relationship between employment and FDI inflows by using panel data analysis which included four main sectors (manufacturing, financial services, wholesale and retailing, and mining) for the period of 1992-2006. They concluded that FDI inflows negatively affected employment in Turkey as the majority of FDI inflows took the form of M&As rather than greenfield investment. Onaran (2008) also found the employment effect of FDI inflows to manufacturing industry in Central and Eastern European countries as insignificant, if not negative.

This research indicated increasing on foreign direct investment will be decreasing the number of manufacturing labor but only in small portion. It might occur by a small number of manufacturing firm which got investment.

**5.5 Economic Growth, Export Performance, FDI and Its Influences Simultaneously to the Labor of Manufacturing**

Author concluded that the influence of gross domestic product, export performance and foreign direct investment towards the number of labor are able to run at the same time. While, manufacturing firms produce more output which is reflected in gross domestic product and they need absorb more labor on it. Then the manufacturing firms will be able to growing its manufactured goods to export especially in rhythm of international trade under AFTA among ASEAN countries. An AFTA makes easy export activity according to comparative advantage of each country. Through AFTA, investment inflows in Indonesia also growing rapidly especially for country which have good and stable condition in terms of investment climate such as political condition since Indonesia reform its government structure to achieve better economy and social life.

However, the presence of foreign direct investment is able to enhance economic growth and drive employment, but since Indonesia is labor abundant country which is produce more manufactured goods while manufacturing industry were really attractive for investor then this investment will lead to declining of labor number in manufacturing industry. Negative sign for dummy coefficient show that by trade liberalization under AFTA, the number of labor in manufacturing in Indonesia will decrease. According Chowdhury (2007), Indonesia is not well prepared for entering a free trade area because nowadays there are too many Chinese import products in the Indonesian markets legally or illegally with cheaper prices. It is indicated that Chinese products are more competitive than those of Indonesian products. And the expected lost from AFTA in the labor intensive sector has significant political economy implications especially when Indonesia’s competitiveness is being eroded due mainly to other labor surplus countries, such as Vietnam and China. Between 2000 and 2002 nearly one million workers lost job in the textiles, garments and footwear industries.

**CHAPTER VI**

**CONCLUSION AND RECOMMENDATIONS**

**6.1 Conclusion**

Based on the empirical result, we concluded:

1. This research proved positive relationship between the number of labor, economic growth and export of manufactured goods. The attractive export activity will absorb more labor to participate in order to produce more products to be exported. Then the greater output also will enhance the number of labor since there are a lot of employments because of that.
2. It also proved that trade liberalization through implementation international trade policy (AFTA) give negative impact to the domestic labo in manufacturing industry in Indonesia because most of them were low-skilled labor who were labor abundant factor in small medium manufacturing. It showed that implementation of international trade policy was dangerous for Indonesian labor who works at manufacturing industry.
3. On the other hand, the number of labor negatively correlated with foreign direct investment since most of foreign direct investment came to Indonesia on the form of brown-field investment rather than green-field investment.

**6.2 Recommendation**

Some recommendations based on the result are:

1. Some emerging countries rely on export performance to boost the economic growth. In fact, export bring more profit to home country through increasing reserve, expand products selling and create new job fields. So, policy should concentrate on role of export as growth engine and enhance on improving the competitiveness of export products by create innovation and new creation then create more job opportunity for labor from that.
2. The fact showed that manufacturing in Indonesia as biggest provider to absorb the labor. But refers to international trade policy implementation in trade liberalization regime, we then should consider about the quality of domestic laborer. Regarding the inflows of foreign direct investment come to Indonesia in the form of merger and acquisitions, it means that restructuring or reorganization of several company will create job-loses for the labor who is work in manufacturing industry and liberalization which is create many of cheaper import products come to Indonesia. We need to consider about the quantity and the quality of Indonesia product produced by labor which is most of them still are low-skilled labor. We need to prepare our country before turn into the trade liberalization. It’s better for policymaker or government to support education sector where it is an initial stage of development for labor. By qualified labor and high-quality product, Indonesia will be ready to face real international trade under trade liberalization regime and the rate of welfare of Indonesian labor also will be higher.
3. Since foreign direct investment in this study show that it has negative correlation with number of labor, government should tend to attract foreign investors in the form of green-field investment rather than brown-field investment because green-field investment refers to the construction of new operational facilities such as build new factories and stores. Then it will lead to open new job opportunity because new factories or new stores need people to be hired.

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**Appendix**

**Table 1: Variables on nominal value**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Year | LABOR (People per year) | GDP (billion RP) | EXPORT (million RP) | FDI (RP) | DUM |
|
| 1992 | 8255496 | 1073610.669 | 11939392.4 | 3664174 | 0 |
| 1993 | 8784295 | 1146787.796 | 14834777 | 4228440 | 0 |
| 1994 | 9680500 | 1237696.392 | 16609120 | 4639800 | 0 |
| 1995 | 10127047 | 1339349.622 | 18174115.2 | 10030568 | 0 |
| 1996 | 10773038 | 1444053.81 | 20704695.5 | 14760302 | 0 |
| 1997 | 11214822 | 1512028.191 | 32280765 | 21748050 | 0 |
| 1998 | 9933622 | 1324018.401 | 53435265 | 1932420 | 0 |
| 1999 | 11515955 | 1323940.225 | 58383300 | 13248600 | 0 |
| 2000 | 11641756 | 1389770.3 | 95450100.5 | 43660656.23 | 0 |
| 2001 | 12086122 | 1442984.6 | 96597280 | 47323484 | 0 |
| 2002 | 12109997 | 1506124.4 | 73245420 | 1297059.9 | 1 |
| 2003 | 10927342 | 1579558.9 | 71822985.5 | 5052953.195 | 1 |
| 2004 | 11070498 | 1660578.8 | 85430840 | 14042736.13 | 1 |
| 2005 | 11652406 | 1750815.2 | 100977692 | 51816456.31 | 1 |
| 2006 | 11890170 | 1847126.7 | 103306060 | 19739809.98 | 1 |
| 2007 | 12368729 | 1964327.3 | 113037419 | 21224115.27 | 1 |
| 2008 | 12549376 | 2082456.1 | 139808505 | 37435016.85 | 1 |
| 2009 | 12839800 | 2177741.7 | 110669960 | 24705531.2 | 1 |
| 2010 | 13824251 | 2310689.8 | 127952719.2 | 80199720 | 1 |

***Source : Statistik Indonesia, Badan Pusat Statistik, 1992-2010***

**Table 2: Data on ln form**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Year | lnL | lnGDP | lnEX | lnFDI | DUM |
| 1992 | 15.92639 | 13.88654 | 16.29535 | 15.11411 | 0 |
| 1993 | 15.98848 | 13.95248 | 16.51248 | 15.25734 | 0 |
| 1994 | 16.08562 | 14.02876 | 16.62546 | 15.35018 | 0 |
| 1995 | 16.13072 | 14.10769 | 16.71551 | 16.12115 | 0 |
| 1996 | 16.19256 | 14.18296 | 16.84587 | 16.50745 | 0 |
| 1997 | 16.23275 | 14.22896 | 17.28998 | 16.89503 | 0 |
| 1998 | 16.11144 | 14.09618 | 17.79398 | 14.47428 | 0 |
| 1999 | 16.25924 | 14.09612 | 17.88254 | 16.3994 | 0 |
| 2000 | 16.27011 | 14.14465 | 18.37411 | 17.59196 | 0 |
| 2001 | 16.30757 | 14.18222 | 18.38606 | 17.67252 | 0 |
| 2002 | 16.30954 | 14.22505 | 18.10933 | 14.07561 | 1 |
| 2003 | 16.20678 | 14.27266 | 18.08972 | 15.43548 | 1 |
| 2004 | 16.21979 | 14.32268 | 18.26322 | 16.45762 | 1 |
| 2005 | 16.27102 | 14.37559 | 18.43041 | 17.76322 | 1 |
| 2006 | 16.29122 | 14.42914 | 18.45321 | 16.79815 | 1 |
| 2007 | 16.33068 | 14.49066 | 18.54323 | 16.87065 | 1 |
| 2008 | 16.34518 | 14.54906 | 18.75578 | 17.43812 | 1 |
| 2009 | 16.36806 | 14.5938 | 18.52206 | 17.02254 | 1 |
| 2010 | 16.44193 | 14.65306 | 18.66717 | 18.20003 | 1 |

***Source : Data is processed by Eview 6***

**Table 3: Ordinary Least Square Result: Regression of GDP, Export and FDI on Labor**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Dependent Variable: LNL | | |  |  |
| Method: Least Squares | | |  |  |
| Date: 07/12/12 Time: 07:24 | | |  |  |
| Sample: 1992 2010 | | |  |  |
| Included observations: 19 | | |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|  |  |  |  |  |
|  |  |  |  |  |
| LNGDP | 0.436198 | 0.149415 | 2.919373 | 0.0112 |
| LNEX | 0.090121 | 0.025562 | 3.525595 | 0.0034 |
| LNFDI | -0.002914 | 0.016551 | -0.176062 | 0.8628 |
| DUM | -0.093604 | 0.051688 | -1.810956 | 0.0917 |
| C | 8.494622 | 1.861901 | 4.562337 | 0.0004 |
|  |  |  |  |  |
|  |  |  |  |  |
| R-squared | 0.884446 | Mean dependent var | | 16.22574 |
| Adjusted R-squared | 0.851430 | S.D. dependent var | | 0.130084 |
| S.E. of regression | 0.050141 | Akaike info criterion | | -2.927038 |
| Sum squared resid | 0.035197 | Schwarz criterion | | -2.678501 |
| Log likelihood | 32.80686 | Hannan-Quinn criter. | | -2.884976 |
| F-statistic | 26.78878 | Durbin-Watson stat | | 1.912281 |
| Prob(F-statistic) | 0.000002 |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

*Source : Data is processed by Eview 6*

**Table 4: Classical Assumption test**

**Heteroscedasticity Test**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Heteroskedasticity Test: White | | | |  |
|  |  |  |  |  |
|  |  |  |  |  |
| F-statistic | 15.88612 | Prob. F(13,5) | | 0.0033 |
| Obs\*R-squared | 18.55087 | Prob. Chi-Square(13) | | 0.1377 |
| Scaled explained SS | 15.00274 | Prob. Chi-Square(13) | | 0.3072 |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
| Test Equation: | |  |  |  |
| Dependent Variable: RESID^2 | | |  |  |
| Method: Least Squares | | |  |  |
| Date: 07/12/12 Time: 07:25 | | |  |  |
| Sample: 1992 2010 | | |  |  |
| Included observations: 19 | | |  |  |
| Collinear test regressors dropped from specification | | | | |
|  |  |  |  |  |
|  |  |  |  |  |
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|  |  |  |  |  |
|  |  |  |  |  |
| C | 13.53823 | 13.04781 | 1.037587 | 0.3470 |
| LNGDP | -2.297397 | 2.203816 | -1.042463 | 0.3450 |
| LNGDP^2 | 0.093600 | 0.094299 | 0.992585 | 0.3665 |
| LNGDP\*LNEX | -0.015653 | 0.025677 | -0.609606 | 0.5688 |
| LNGDP\*LNFDI | -0.005849 | 0.009849 | -0.593817 | 0.5785 |
| LNGDP\*DUM | -0.033763 | 0.052945 | -0.637712 | 0.5517 |
| LNEX | 0.224339 | 0.300203 | 0.747289 | 0.4885 |
| LNEX^2 | 0.001999 | 0.003120 | 0.640762 | 0.5499 |
| LNEX\*LNFDI | -0.004429 | 0.002626 | -1.686619 | 0.1525 |
| LNEX\*DUM | 0.019935 | 0.011732 | 1.699180 | 0.1500 |
| LNFDI | 0.106803 | 0.111928 | 0.954209 | 0.3838 |
| LNFDI^2 | 0.001651 | 0.000569 | 2.902322 | 0.0337 |
| LNFDI\*DUM | 0.001222 | 0.001942 | 0.629182 | 0.5569 |
| DUM | 0.100132 | 0.595760 | 0.168074 | 0.8731 |
|  |  |  |  |  |
|  |  |  |  |  |
| R-squared | 0.976362 | Mean dependent var | | 0.001852 |
| Adjusted R-squared | 0.914901 | S.D. dependent var | | 0.003285 |
| S.E. of regression | 0.000958 | Akaike info criterion | | -10.92415 |
| Sum squared resid | 4.59E-06 | Schwarz criterion | | -10.22825 |
| Log likelihood | 117.7795 | Hannan-Quinn criter. | | -10.80638 |
| F-statistic | 15.88612 | Durbin-Watson stat | | 3.152955 |
| Prob(F-statistic) | 0.003298 |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

*Source : Data is processed by Eview 6*

**Table 5 : Autocorrelation Test**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Breusch-Godfrey Serial Correlation LM Test: | | | |  |
|  |  |  |  |  |
|  |  |  |  |  |
| F-statistic | 0.102976 | Prob. F(2,12) | | 0.9029 |
| Obs\*R-squared | 0.320589 | Prob. Chi-Square(2) | | 0.8519 |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
| Test Equation: | |  |  |  |
| Dependent Variable: RESID | | |  |  |
| Method: Least Squares | | |  |  |
| Date: 07/12/12 Time: 07:25 | | |  |  |
| Sample: 1992 2010 | | |  |  |
| Included observations: 19 | | |  |  |
| Presample missing value lagged residuals set to zero. | | | | |
|  |  |  |  |  |
|  |  |  |  |  |
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|  |  |  |  |  |
|  |  |  |  |  |
| LNGDP | -0.009137 | 0.161459 | -0.056589 | 0.9558 |
| LNEX | 0.002025 | 0.027931 | 0.072496 | 0.9434 |
| LNFDI | -0.001036 | 0.018021 | -0.057460 | 0.9551 |
| DUM | 0.001988 | 0.055534 | 0.035792 | 0.9720 |
| C | 0.110168 | 2.010641 | 0.054792 | 0.9572 |
| RESID(-1) | -0.003689 | 0.294704 | -0.012518 | 0.9902 |
| RESID(-2) | -0.137287 | 0.302580 | -0.453722 | 0.6581 |
|  |  |  |  |  |
|  |  |  |  |  |
| R-squared | 0.016873 | Mean dependent var | | -1.87E-15 |
| Adjusted R-squared | -0.474690 | S.D. dependent var | | 0.044220 |
| S.E. of regression | 0.053699 | Akaike info criterion | | -2.733529 |
| Sum squared resid | 0.034603 | Schwarz criterion | | -2.385577 |
| Log likelihood | 32.96852 | Hannan-Quinn criter. | | -2.674641 |
| F-statistic | 0.034325 | Durbin-Watson stat | | 1.917920 |
| Prob(F-statistic) | 0.999748 |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

*Source : Data is processed by Eview 6*

**Table 6: Multicollinearity Test**

**Correlation Matrix**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | LNL | LNGDP | LNEX | LNFDI | DUM |
| LNL | 1.000000 | 0.869362 | 0.878980 | 0.648490 | 0.626498 |
| LNGDP | 0.869362 | 1.000000 | 0.808641 | 0.616662 | 0.816915 |
| LNEX | 0.878980 | 0.808641 | 1.000000 | 0.550391 | 0.716688 |
| LNFDI | 0.648490 | 0.616662 | 0.550391 | 1.000000 | 0.235677 |
| DUM | 0.626498 | 0.816915 | 0.716688 | 0.235677 | 1.000000 |

*Source : Data is processed by Eview 6*

**Table 7: Normality Test**

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*Source : Data is processed by Eview 6*