UNIVERSITAS INDONESIA

AN ANALYSIS OF INDONESIAN TEXTILE AND TEXTILE PRODUCTS EXPORT PERFORMANCE

THESIS

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FACULTY OF ECONOMICS
MASTER OF PLANNING AND PUBLIC POLICY
JAKARTA
JANUARY 2010

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A Thesis submitted in partial fulfillment of the requirements for the degree of Master of Economics in Planning and Public Policy
University of Indonesia

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Jakarta, January 2010

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ABSTRACT

Name : Ika Yulistyawati
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Title : An Analysis of Indonesian Textile and Textile Products Exports Performance

Textile and textile products is one of important commodity that has thigh competition in global market. Indonesia has been one of the competitive countries that has integrated sector from upstream to downstream industry. In recent development, the creation of regional trade arrangement may influence export performance. In this research, the creation of AFTA becomes the main focus since Indonesia is a member of AFTA.

This thesis uses gravity model with panel data estimation. The model chosen in this thesis is fixed effect model. From the estimation, it is found that the model is able to explain the variation of Indonesian textile and textile product exports to the several trade partner countries for 80 %. The estimation result of this research also found that some of independent variables such as GDP and population of partner country, AFTA and crisis dummy variable significantly give effect to Indonesian textile and textile products export. It affects significantly at the level of 99% and 90%. On the contrary, distance and real exchange rate has insignificant effect to Indonesian textile and textile products export.

Keywords:

Indonesian textile and textile products, gravity model, fixed effect approach model.

ABSTRAK

Name : Ika Yulistyawati
Study Program : Magister Perencanaan dan Kebijakan Publik
Title : Analisa Kinerja Export Tekstil dan Tekstil Indonesia

Tekstil dan produk tekstil merupakan salah satu komoditas penting yang memiliki persaingan ketat di pasar global. Indonesia telah menjadi salah satu negara yang kompetitif dan memiliki sektor terpadu dari hulu hingga hilir. Dalam perkembangannya, terbentuknya perjanjian perdagangan regional dapat mempengaruhi kinerja ekspor. Dalam penelitian ini, AFTA menjadi fokus utama karena Indonesia adalah anggota ASEAN yang terikat dalam perjanjian dagang regional (AFTA).

Tesis ini menggunakan model gravity dengan pengolahan data panel. Dari hasil pengolahan diketahui bahwa model ini mampu menjelaskan variasi faktor determinan ekspor tekstil dan produk tekstil Indonesia ke beberapa negara mitra dagang sebesar 80%. Hasil dari penelitian juga menunjukan bahwa beberapa variabel independen seperti GDP dan populasi dari negara mitra, dummy AFTA dan krisis secara signifikan memberikan pengaruh untuk ekspor tekstil dan produk tekstil Indonesia. Variabel tersebut berpengaruh secara signifikan pada level kepercayaan 99% dan 90%. Sementara itu, jarak dan nilai tukar riil tidak berpengaruh terhadap kinerja ekspor tekstil dan produk tekstil Indonesia.

Kata Kunci: ekspor tekstil dan produk tekstil, model gravity, analisa efek tetap.

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CHAPTER I
INTRODUCTION

1.1 Background

Textile and textile product is one of the most traded goods in the international market. It has been a contributor of economic growth throughout the world, especially for developing countries included Indonesia. It gives important role in terms of share of job opportunity or population employed and also total exports. Because of its contribution in the world economic growth, the trade analysis of textile and textile product becomes important.

Textile and textile product is one of Indonesian main export commodities from industrial sector. It is one of ten main export products that have around 50% share of total export. According to the data in 2007-2008, textile and textile product has the second highest export value compared to others non oil and gas products. (Mutakin, Salam & Driyo, 2008:7)

In its export performance, for several years, USA, EU and Japan are the main destination for Indonesian textile and textile product export. USA has contributes 23% export value, followed by EU 21%, South East Asia countries 16% and Japan 12%. (Infobanknews, 2009)

In recent development, Indonesian export activities in textile and textile product face some challenges from both internal and external environment. In internal environment, different problems faced by the producer and government. Several problems faced by producer, such as the availability of raw materials, machinery, funds, labors, electricity, infrastructure and others supporting facilitation. Meanwhile, government may also find problems in handling, monitoring and solving constraints in developing textile and textile products performance both in domestic market and also in foreign market.

In external environment, there are also many changes in world market. In textile market, there was a system made internationally to regulate trade in textile and textile products. For about forty years, the international trade of textile has been arranged by several agreements. The last arrangement is the Multi fiber

arrangement which started in 1974 and ended in 1994. In the MFA, there are developed countries i.e USA, EU, Canada and Norwegia which implemented quota system for importer countries. As the creation of WTO in 1994, there was conformity of clothing and other textile product arrangements to the GATT (WTO) rules. It integrated to the Agreement on Textile and Clothing (ATC) which will be the ten years process to phase out the quota system. After the full elimination of quota system, the international market of textile will be more competitive because each country has the same opportunity to export without limited by the quota.

The other changes in external environment can be happen related to the creation of trade bloc in the form of regional or bilateral arrangement. Regional and bilateral arrangement has engage country which has the similarity in region, interest, trading product and other similarities. This is also what happens in international trade of textile and textile product. The creation of regional trade agreement influence trade activities among members. The agreement aims to eliminate tariff barriers among member countries and create regional market. It also expects to increase intra-regional trade of its members. The creation of regional trade agreement will influence country which gets benefit from duty free policy.

One of the regional trade agreements is AFTA (ASEAN free trade area). AFTA was established in 1993 and currently has a membership of ten ASEAN member countries. The main instrument of tariff liberalization under AFTA is the Common Effective Preferential Tariff (CEPT).

In previous study about the impact of AFTA to ASEAN 5 countries' export performance, it shows that AFTA has significant effect to intra trade in ASEAN region. This result is consistent with the export share data of Indonesia's export to ASEAN countries which shows that Indonesia's export to ASEAN countries increase in the last four years (1999-2006). In increasing export performance to ASEAN countries, one of the challenges is the homogeneity of commodity exported in ASEAN region, for example agriculture products, textile products and electronics. (Outlook Ekonomi Indonesia, 2008:29)

In South East Asia region, there are several countries which are the main producer of textile and textile product, such as Indonesia, Thailand, Malaysia, Cambodia and Vietnam. Vietnam is the new entrance that also has great force to beat domination of other textile and textile product's exporter countries.

In textile and textile products industry, most ASEAN countries do not cover all textile and textile products supply chain on their own with all needed facilitation. But, Indonesia has relatively completed supply chain in textile and textile products from upstream (fiber) to downstream (garment). (Setiaharja, 2009)

In ASEAN market, Cambodia, Indonesia, the Lao People's Democratic Republic, the Philippines, Thailand and Vietnam have a revealed comparative advantage in clothing. Moreover, Indonesia, Thailand and Vietnam have a revealed comparative advantage in textiles (James and others, 2007). The other ASEAN member also has potential capacities in textile and clothing production and trade. Such as Malaysia and Brunei Darussalam as suppliers, Myanmar as potential supplier or Singapore as hubs for intraregional trade and also between the region and the world. (James, 2007:86).

Indonesian textile and textile products export to ASEAN countries shows increasing movement after the creation of AFTA. But at the same time, Indonesian textile and textile products export to other main destination countries outside ASEAN region also shows increasing movement.

1.2 Problem Statements

Related to the fact mentioned above, then raise a question whether AFTA does increase Indonesian textile and textile products export to ASEAN countries. If it so, what about Indonesian textile and textile products export to other destination countries.

1.3 Research Objectives

1. To analyze the comparison of Indonesian textile and textile products export performance to ASEAN countries and to non ASEAN countries. In

this research non ASEAN countries represented by Indonesian main export destination in textile and textile products

2. To analyze the determinant factors in export performance of Indonesian textile and textile product
3. To analyze the influence of AFTA on Indonesian textile and textile product export performance

1.4 Research Coverage

The coverage in this research focuses on some issues as follow:

1. This research will use total textile and textile products data (accumulated from HS 50-63).
2. The research will cover 19 years, 1990-2008 (annually), three years pre the creation of AFTA in 1993 and after creation of AFTA until the latest data of Indonesian textile and textile products exports.
3. The object of this research consists of ASEAN countries known as ASEAN-6 (not included: Singapore and Brunei Darussalam): Thailand, Philippine, and Malaysia. Singapore is excluded from this research with consideration of Singapore's tendency in re-export goods. Singapore import goods from other country, but many of them are not for the need of consumption, but these goods are being re-exported to other country. This activities give more benefit for Singapore, as this country already has zero percent tariff, it means that trade flow of Singapore is much faster than any other ASEAN countries. Meanwhile, Brunei Darussalam also not included because of its small number of Indonesian textile and textile products export to Brunei Darussalam.

   The research also covers export destination countries for textile and textile products, namely United States, Germany, UK, Canada, France, Spain, Italy, Belgium, Japan, Netherlands, Republic of Korea, Hong Kong, Turkey, and Saudi Arabic. Those countries are taken in the consideration as the main destination of Indonesian textile and textile products exports. (NAFED, 2009)

1.5 Methodology

1.5.1 Source of Data

The data of the variables which are used in this research will be taken from various sources. The Indonesian export data of textile and textile product sourced from BPS, data of GDP and population sourced from IMF in World Economic Outlook database, data of nominal exchange rate and consumer price index are sourced from IFS, data of distance from center of country i to center of country j will be taken from www.indo.com/distance and data of average of fuel price is taken from www.eia.doe.gov.

1.5.2 Analysis Method

In order to achieve the objectives of this research, two methodologies which are econometric approach using gravity model and descriptive analysis using export data will be used.

The OLS method will be used to estimate the data, using E views program. First, gravity model will be used to analyze determinant factors of Indonesian textile and textile products export and also analyze the influence of AFTA to Indonesian textile and textile products export. Second, Indonesian intra export to ASEAN countries and extra export with non ASEAN countries will be compared to analyze the pattern of Indonesian textile and textile products export.

In this research, the author refers to some previous research as explained by Gunawardhana (2005), he applied the gravity model, where he chooses to applied GDP from partner side only instead of using both sides. Another research is done by Hilbun, where population is used to capture market size of a country. Meanwhile, Chit, Rizov & Willenbockel (2006), applied extended of gravity model by adding the price factor. In this model, real exchange rate is used as proxy of relative price. Besides that, there are some researches that apply the affect of creation of free trade agreement by inserting FTA as dummy variable, such as research done by Hapsari & Mangunsong (2006) and Hermansyah & Savitri (2008). Those researches using export in total value, in term of commodity there was a research by Cadarajat & Yanfitri (2008) that explains based on export

of main commodity of each province in Indonesia to 5 ASEAN countries using gravity model.

Finally, this research has modified those models and derived it as follow:

$$logX_{ijt} = b_0 + b_1 logGDP_{jt} + b_2 logPOPjt + b_3 logDIST_{ijt} + b_4 log\ RER_{ijt} + D_1 AFTA + D_2 Crisis + \varepsilon_{ijt}$$

Where :

X_{ijt}	: Export country i to country j in time t
GDP_{jt}	: Nominal GDP of country j in time t
POP_{it}	: Population of country j in time t
$DIST_{ij}$	: Distance from country i to country j
RER_{ij}	: Real exchange rate in Rupiah /US$ in time t
AFTA	: Dummy for country j in AFTA
Cri	: Dummy for economic crisis (1997-1998)
εijt	: Error term

CHAPTER II
GRAVITY MODELS AND INTERNATIONAL TRADE THEORY

2.1 Gravity Models

2.1.1 The Standard Gravity Model

The idea of gravity model arises from the Newton's law of gravitation where two masses attract each other. The application of the gravity model to international trade theory aims to explain the bilateral trade flows and patterns between two economies by regarding each of them as an organic body that attracts each other in proportion to their economic size (GDP) and inversely to their distance. The basic assumption of the gravity model, therefore, states that the bilateral trade flows are positively related to the two countries' GDPs and negatively related to the distance between them. The simplest version of the gravity model can take the following form. (Sohn, 2001:3)

$Tij = A \cdot (Yi\ Yj\ /Dij)$

Where, *Tij* = bilateral trade flows (exports+imports), *Yi* = GDP of country I, *Yj* = GDP of country j, *Dij*= Distance between country i and j, *A* = Constant of proportionality

The idea of utilize the gravity model in the international trade arises from two economists namely, Pentti Pöyhönen (1963) a Finnish economist and Jan Tinbergen (1962) a Dutch economist. They conducted the first econometric analyses of bilateral trade flows based on gravity-type equations but they only provided empirical evidence without supplying any theoretical justification.

At the core, the gravity model predicts that bilateral trade should increase with GDP and decrease with distance. However, for the most part researchers have extended the gravity model beyond the core.

2.1.2 The Extended Gravity Model

While trying to provide theoretical foundation for gravity model, some economists also continued to extent the gravity model by adding some

independent variables. Linemann (1967) added dummy variable for a reciprocity model, Frankel (1995) added some physical factors such as common border and Garman (1998) also add some independent variables such as common language and regional trade integration to complete the analysis in gravity model.

In further analysis, there are also some factors other than geographic location that influence trade, Bergstrand (1985), Thursby and Thursby (1987), and De Grauwe (1988) include the measures of relative prices and exchange rate volatility in their models. (Gosh&Yamarik, 2001:3)

In conventional gravity model, the assumption of product substitutability is unrealistic. There is also evidence found that trade flow is differentiated by place of origin. The conventional gravity model excludes the price variable which led to miss specification. Anderson (1979), Bergstrand (1985, 1989), Thursby and Thursby (1987), Helpman & Krugman (1985) noted about this. Their studies show that price variables are actually statistically significant in explaining trade flows among countries (Oguledo and Macphee 1994). Generally, in economics term a commodity moves from a country where prices are low to a country where prices are high. Therefore, trade flows are expected to be positively related to changes in export prices and negatively related to changes in import prices (Karemera et al 1999 as quoted in Amponsah&Boadu, 2006:5).

However, price and exchange rate variables can be omitted only when products are perfect substitutes for one another in consumer preferences and when they can be transported without cost between markets. This pattern is in line with the standard Heckscher-Ohlin (H-O) setting (Jakab 2001).

The extended gravity model is also used related to estimate the influence of policy in trade, such as trade agreement. The presence of FTA as independent variable in gravity model has raised critics from some economists. The major issue is whether the existence of FTA dummy is as endogenous or exogenous variable. If FTA is endogenous, with the estimation using cross section and panel, the effect of FTA on trade flow may be biased and inconsistent; furthermore it may be over or under estimated. Ghosh and Yamarik (2004) has done research in this matter and found that the solution to overcome bias and miss specified due to inserting FTA as dummy variable, is using extreme bound analysis.

Meanwhile, from the research done by Baier and Bergstrand (2005), it is suggested that the best method to estimate the effect of FTA on bilateral trade flows employs a theoretically motivated gravity equation using differenced panel data, rather than instrumental variables applied to cross-section data. (Baier & Bergstrand, 2005:2)

Other researchers who add RTA as dummy variable are Viner and Meade. They conclude the effect of trade creation and trade diversion in regional trading arrangements can either increase or reduce world welfare. As the rise in the number of regional trading arrangements, it led to an increase in the number of studies analyze whether RTAs are trade creating or diverting. Most of researchers use the gravity model to test for the trade effects of RTAs. From the result estimating process, a consensus has emerged among researchers that RTAs are trade creating. Ghosh and Yamarik stated that there are two important points in gravity model; first, there is a lack of consensus in the gravity model literature on which other variables should be included in the extended gravity model equation. Second, the wide range of coefficient values cast doubt on whether many of these other variables are robustly linked to bilateral trade. (Gosh&Yamarik, 2001:2-6)

2.2 International Trade Theory in Gravity Model

To see the linkage between gravity model and international trade, previous research using gravity model can be analyzed. There are two competing models of international trade that provide theoretical justification for the gravity model, namely the differentiated products model and the Heckscher-Ohlin model.

Anderson (1979) and Krugman & Helpman (1985) tried to identify the relationship between the bilateral trade flows and the product of two countries' GDPs by utilizing the differentiated products model.

The study of Krugman & Helpman, assumed that the condition is under imperfect substitute model. In this condition, each firm produces a product which is an imperfect substitute for other product. The firm also has monopoly power in the market and consumer has variety in demand. When there are increasing in people' income, they may be consume more, but not in the quantity but in the more variance of goods. International trade sees this as an opportunity to supply

more preference in goods. If two countries have similarity in technology and preference, they will rationally trade to expand numbers of choices for consumer to meet more variety.

In 1987, Helpman applied a test on OECD countries. Based on the trade data he found the result that the gravity model fit to be applied in trade flows among industrialized countries which has intra industry trade and monopolistic competition are grow well.

Other economists who tried to prove empirically the linkage between gravity model and differentiated product model is Hummel & Levinsohn (1995). They conducted a similar empirical test with a set of non-OECD countries where monopolistic competition was irrational. They proved that the gravity equation is also efficient in explaining the trade flows among developing countries where inter-industry trade is dominant with scarce monopolistic competition. Their findings questioned the uniqueness of the product differentiation model in explaining the success of the gravity equation and proved that a variety of other models, including the H-O model, can serve as alternatives.

Meanwhile, Bergstrand (1989) tried to show the connectivity between gravity model and international trade theory. He used the framework of the general equilibrium model of international trade, two differentiated product industries with each product utilizing two factors of production. Bergstrand tried to test whether the gravity model fits into the Hecksher-Ohlin model of inter industry trade and the Helpman-Krugman-Markusen models of intra-industry trade.

Bergstrand expands the framework of the gravity equation to include factor endowment variables in line with Heckscher-Ohlin model and taste variables based on Linder hypothesis. He provides an explicit theoretical foundation for exporter and importer incomes and per capita incomes consistent with traditional (and newer) trade theories. (Bergstrand, 1989)

Bergstrand defines consumer demand as a CES (constant elasticity of substitute) utility function. The firm i is profit maximizing and each firm in the two industries produce a differentiated product which is characterized as being Chambelinian monopolistic competition by using two factors of production,

capital (K) and labor (L). Bergstrand expands on the gravity equation in a multi-industry world. It stated that if there are more than two factors and more than two industries, the gravity equation could not be used in terms of relative factor intensities of industries.

Meanwhile, Deardorff analyze differences between the gravity equation and the Heckscher- Ohlin (H-O) model. Some economists have argued that the success of the gravity equation was proof against the H-O model while Deardorff argues that at some of the equilibrium in the H-O model interpret that they are consistent with the gravity equation.

There are two results introduced by Deardorff which are types of H-O equilibrium. The first equilibrium is with frictionless trade and the second equilibrium without frictionless trade.

In frictionless trade, there are no impediments, by demanders' indifference to equally priced sources of supply, this allows the entry of foreign suppliers into an otherwise domestic supplier's market. Just as demanders are indifferent to equally priced sources of supply, so suppliers are indifferent to whom they sell. Deardorff argues that in the absence of trade impediments, trade flows are not assumed to be small. It is because of the indifference of both suppliers and demanders trade flows become larger, configured to the gravity-equation (accounting for identical, homothetic tastes across countries), and in frictionless trade, distance is not being taken into account.(Hilbun, 2006:33)

Meanwhile, without frictionless trade, Deardorff assumed that different countries produce different goods. In the H-O model, where there are barriers to trade, it must apply factor price equalization (FPE). Because, if two countries had FPE and there are trade barriers, it would not simply that a country trade with other country. Country would rather consume its own production rather than paying the country j's price (same as their own) plus additional trade barriers from country j. Deardorff says that in the presence of trade barriers, a country specializes in the manufacture of a good, with the lowest price. With this assumption, Deardorff proceeds to study bilateral trade flows in the H-O model and states that it is the same as in models with differential products and hence the emergence of the gravity model once again.(Hilbun, 2006:34)

In some findings, the H-O and Ricardian theories contradict with the trade in real world. In the HO model, trade would happen if two countries have large differences in factor endowment. Therefore, based on this theory we would expect small volume of trade between west European countries since these countries have more similar factor endowments and a lot of North South trade. But on the contrary, in fact evidence from the international trade statistics shows that intra-industry trade and North-North trade are large.

According to the H-O theory, capital intensive goods are produced by countries that have abundant of capital. So, as Markusen (1986) has already shown- if high- income consumers tend to consume larger budget shares of capital intensive goods, then it follows that (1) capital rich countries will trade more with other capital rich countries than with capital poor countries, and (2) capital poor countries will trade more with their own kind. These are consistent as those of the Linder hypothesis (Frankel 1997).

Evenett & Keller (1998) also emphasized that gravity prediction constitutes the most important result regarding the volume of international trade. They argued that little production is perfectly specialized due to factor endowment differences and that as long as the production is not perfectly specialized across countries, both of the H-O model and differentiated products model are likely to account for the empirical success of the gravity equation.

Therefore, it is generally accepted that a number of trade models are responsible for the empirical success of the gravity equation. While the H-O theory would account for the success of the gravity equation in explaining bilateral trade flows among countries with large factor proportion differences and high shares of inter-industry (so-called North-South trade), the differentiated product model would succeed in explaining the bilateral trade flows among countries with high shares of intra-industry trade (so called North-North trade).

Below is the figure of the model identification issue in the gravity model equation: (Sohn, 2001:5)

Type of Model	Technology Differences (Ricardian)	Increasing Returns	Heckscher-Ohlin	Other Models
1.Structural Assumption: Identical homothetic demand, free trade and…	Technology Differences with industry classes across countries	Increasing Returns at the firm level, monopolistic competition, product differentiation	Hemogeneous goods and Multi-cone world (Large Factor Proportion Differences)	
Consistent with absence of factor proportions differences ?	Yes	Yes	No	
2. Implication for Nature of Trade	Intra-industry trade in goods with alternating technological superiority	Intra-industry trade in product varieties with potentially identical technologies across countries	Inter-industry trade	
Consistent with trade in goods with identical factor requirements ?	Yes	Yes	No	
3. Import Volume Prediction	**Gravity Equation**			

Source: Sohn (2001)

Figure 2.1 The Model Identification Issue in the Gravity Equation Context

2.3 Regional Trade Arrangements

In today era, international trade flow becomes much important because it offers better achievement for countries who are involved in certain trade agreement. The main purpose of trade agreement is to eliminate trade barriers, so that trade flow from involving countries will be higher.

Free trade agreements are agreements bound two or more countries that its aim is to liberalize trade with reducing or even eliminating tariff and non tariff barriers imposed by each country. So that, the tariff imposed for FTA member will be lower than goods produced by country outside the bloc.

One of the major international developments in recent years is the growth of regional trading arrangements (RTAs). The number of regional trade agreements has rising up to 230 by late 2004. Trade between RTA countries in the same bloc is now up approximately 40 percent of total global trade. It may happen because country with the same membership in RTA has also been eliminating barriers preferentially through RTAs, while multilaterally most countries have been reducing tariffs across the board to all partners on a most favored nation, or nondiscriminatory (MFN) basis.

In fact, 66 percent of the decline in average tariffs in developing countries during the last two decades has come from unilateral reductions, as distinct from 25 percent coming out of the Uruguay Round and around 10 percent from RTAs. Moreover, product exclusions and restrictive rules of origin further limit the trade

expanding effects of preferences. Nonetheless, the result of this proliferation is an increasingly complex global trading system where different countries' access to a given market is often governed by very different sets of rules.

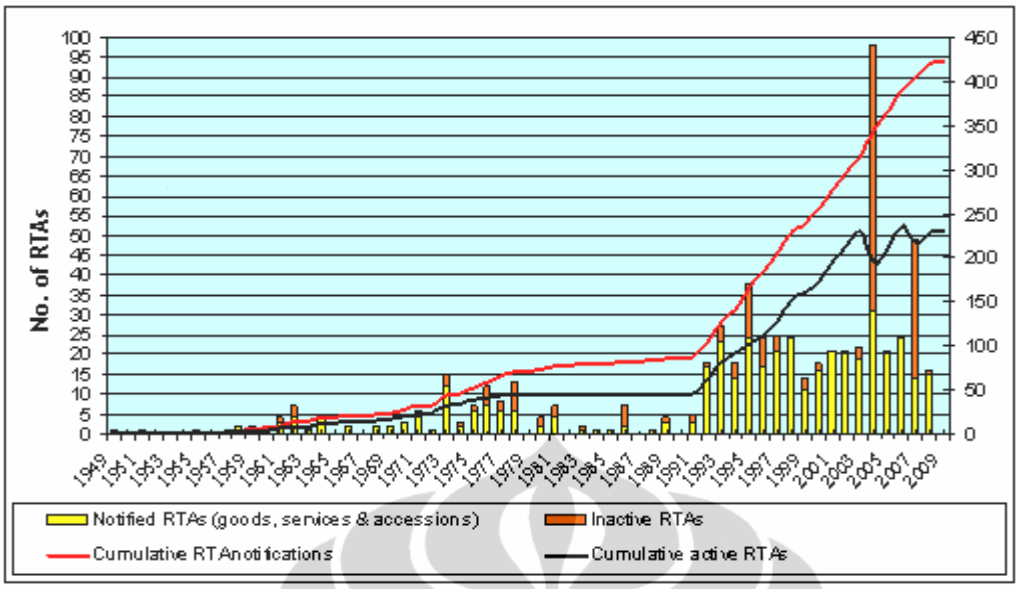
The recent growth in RTAs will play a significant role in world trade developments as one-third of the world's trade now is in the form of regional trading arrangements. RTA offers free trade and furthermore will affect welfare in countries. The membership in RTA can simplify and even reduce transaction cost that arise when country trade with other country. So, RTA will give benefit with less transaction cost in trade. (Ghosh & Yamarik, 2001:1)

In the 1990s, the volume of global trade has risen and increased sharply. This growth has enabled Asian economies to increase the per capita income of their populations. Although in the late 1990s, the Asian financial crisis had a cause effect on aggregate growth rates in some Asian countries, but under the negotiation of new FTAs, and on the expansion of existing FTAs in the region, export growth during the decade as a whole was remained strong.

The strongest export growth was in manufactures while exports of agricultural products fell as a share of total world trade. Trade in services also increased rapidly in the 1990s, while the share of services trade across sectors moved away from transport and travel toward other commercial services.

According to WTO, in the period 1948-1994, the GATT received 124 notifications of RTAs and since the creation of the WTO in 1995, almost 300 additional arrangements covering trade in goods or services have been notified. (WTO, 2009)

Below is the chart of all RTAs notified to the GATT/WTO (1948-2008), including inactive RTAs, by year of entry into force.



Source: www.wto.org, 01.11.2009

Figure 2.2 All RTAs notified to WTO in the period of 1948-2008

The advance form of FTA is custom union. In FTA, although each country can ship their goods to other member countries with low tariff but each country set tariff to imported goods from outside the region independently. While, in custom union country must agree on set the same tariff rate for outside region. In the economic integration process, there are several steps before reaching the highest level in integration. The process started with free trade agreement (trade integration), custom union (foreign investment creation), common market (people movement), monetary union (financial integration) and the last is the political union.

In 1990s, there are some improvements in Asia region in recent period of era. (Asian Development Outlook, 2002:160-161)

First, the number of FTAs in Asia region is growing. The growth is signed by the creation of several RTAs such as, ASEAN Free Trade Area (AFTA) and the SAARC Preferential Trading Arrangement (SAPTA).

Second, the changing in external environment of Asian region, such as the initiative of the European Union (EU) and the phasing out of the Multi fiber Arrangement (MFA) that may affect Asian export prospects. In this case, regional FTA has been seen as a defensive response to regionalism.

Third, each country needs to analyze the relationship between FTA and multilateral trade negotiations under WTO negotiations. Now, the question faced by policymakers is how to get benefits of trade liberalization. Because when a country becomes a member of WTO and RTA, it means that this country has to treat itself in different position.

The growth in creation of RTA brings benefit especially to its member through its trade liberalization. Trade liberalization triggers the increasing of the effective size of the market. Therefore, joining a FTA will create more trade with at least some countries from same region trade bloc. Increasing in trade contributes to development, and allows both member countries and nonmember countries to get benefits of increased openness.

The basic method to analyze the effects of regional agreements on economic welfare in member and non-member country is based on the concepts of trade creation and trade diversion. The international trade literature recognizes the potential of regional trading arrangements to increase trade among its members. However, concerns about whether regionalism enhances the volume of trade within the bloc or simply diverts bilateral trade away from countries outside the bloc can be attributed back to Viner (1950) and Meade (1955) who first distinguished between trade creation and trade diversion. Specifically, trade creation occurs as low-cost member countries displace high-cost domestic producers. Trade diversion, on the other hand, occurs when members of a trading bloc reorient their trade away from low cost, nonmember countries towards higher-cost member countries.

Trade creation occurs when member countries substitute their lower-cost imports from the partner country with other member country's production. Previously one member country does not have trade relation with other member country, but then after they are bounded in RTA, especially with tariff reduction policy. It creates trade between RTA's members.

Trade diversion arises when imports from high-cost producers displace lower-cost imports from non-members. It is because of reducing tariff to the lower level in trade bloc. Consumer losses from trade diversion exceed the gains in producer surplus within the block. In addition to the losses in consumer benefits,

other loses is tariff revenue in evaluation of these agreements. This effect depends on the so-called margin of preference or the difference between most favored nation tariffs and preferential tariffs. (James, 2001:5)

2.5 Previous Research

There are number of researches of trade flow analysis using gravity model approach. Most of the research applies trade as a whole in volume, not in specific commodity. There are some previous researches which act as the guideline of this research:

1. Hilbun (2006) researched the impacts RTAs have had in the Western Hemisphere regarding agricultural trade flows. The model is explained as follow:

   $$\log X_{ij} = a_1 + a_2\log(Y_i) + a_3\log(Y_j) + a_4\log(d_{ij}) + a_5\log(Pop_i) + a_6\log(Pop_j) + a_7 lang + a_8 NAFTA + a_9 AC + a_{10} MERCO + a_{11} LAIA + a_{12} CACM + a_{13} NAFTAD + a_{14} ACD + a_{15} MERCOD + a_{16} LAIAD + a_{17} CACMD + e_{ij}$$

   The result of his study is positive effects for GDP of importer/exporter and population size of importer/exporter and a negative effect for that of distance. From the five agreements examined (NAFTA, AC, MERCO, LAIA, and CACM), NAFTA and LAIA were the only positive (but non-significant) as to Trade Creation effects while AC, MERCO, and CACM were all negative (but non-significant). The agreements of NAFTA had both a *positive* and significant (p=0.023) diversionary effect with the remaining agreements all being negative (as expected) and significant regarding trade diversion. It was also concluded that GDP (importer) and distance also had the expected signs (+,– respectively) with distance also being significant (p=0.0001). It was concluded that RTAs had a more pronounced effect on *inter*-industry trade versus *intra*industry trade and that with the passage of more time

2. Hapsari & Mangunsong (2006), presents the paper which aims to examine the determinants of trade flows of AFTA members, including the impact of creation of AFTA on its intra-regional and extra-regional trade flow by

comparing trade patterns of AFTA countries with AFTA members and non-members. The model is explained as follow:

$$\log X_{ijt} = b_0 + b_1 \log GDP_{it} + b_2 \log GDP_{jt} + b_3 \log GDPCAP_{it} + b_4 \log GDPCAP_{jt} + b_5 \log DIST_{ij} + b_6 \log T_j + D_1 land_{ij} + D_2 Border_{ij} + D_3 Comlang_{ij} + D_4 COM_{ij} + D_5 SIM_{ij} + D_6 ASEAN_{ij} + D_7 CRE_{ij} + D_8 Div_{ij} + \varepsilon_{ijt}$$

The paper applied an augmented gravity equation to estimate the impact, including standard gravity variables and two indexes, namely the complementarity index and the similarity index to find the effect of complementarity and similarity export structure between countries. This research also include dummy variables represent the effects of regional trade arrangement and to estimate the impact of AFTA whether it causes trade creation or trade diversion. In this paper, from previous research in assessing the impact of RTA by adding the RTA dummy variable, it is suggested to use country fixed effect in order to prevent misspecified in econometric perspective because of presence of unnecessary barriers put on the parameters of the model (Matyas, 1997). This result of this research is consistent with many previous studies which estimate the determinants of bilateral trade between countries using gravity equation. The reduction of tariff was also found to have a significant effect in increasing the bilateral exports of ASEAN members. Therefore, effective implementation of the AFTA CEPT scheme to reduce or eliminate tariff barrier may be expected to boost the trade of ASEAN members. However, a greater number of products may need to be put in the CEPT inclusion list.

3. Chit, Rizov & Willenbockel (2006) has modified the basic gravity model as follow: $X = f(Y, Y^*, RP, VOL, Dist, CB, AFTA)$.

In this model, the relative price variable (*RP*) is the real exchange rate. Theoretically, the relative price variable should be the ratio of an index of export prices, for the exporting country, and an index of prices of similar goods in the importing country, expressed in the same currency. Since such a measure is not available, the real exchange rate is taken as the proxy. RER is measured by the

end-of-period nominal bilateral exchange rate, adjusted by the relative price level (CPI) of respective countries. (Chit, Rizov & Willenbockel, 2006:10-12)

The result shows that the estimated coefficient of the exporting country's income, which represents the size of exporting country, is positive and significant as expected. All dummy variables are significant and show the expected sign. However, the coefficient of the relative price variable is insignificant in all estimations. A potential explanation for this finding might be that bilateral imports among the sample East Asian countries consist, to a large extent, of non-competing imports of necessity goods such as raw material and intermediate inputs, which are price-insensitive. (Chit, Rizov & Willenbockel, 2006:22)

4. Gunawardhana (2005) made a study about the determinants and the impact of Asian currency crisis on Australia's export to East Asian countries using gravity model. He used augmented gravity model which modified the standard gravity model. The modified model is defined as follow:

$$\log X_{jt} = b_0 + b_1 \log Y_{jt} + b_2 \log YP_{jt} + b_3 \log D_{aj} + b4 \log E_{jat} + b_5 \log T_{ij} + b_6 \log c_j + b_6 IN98 + b_6 MA98 + b_6 PH98 + b_{10} SK98 + b_{11} TH98 + b_{12} LY_j 98 + b_{13} LE_{ja} 98 + \varepsilon_{ijt}$$

The result of the estimation is real GDP and per capita GDP of Asian countries have positive and significant impact to Australia's export, while real exchange rate and tariff have negative and significant effect, distance found to be negative, while creation of APEC leads to increasing in Australia export to APEC members. Crisis has negative and significant influence, expect for Australia's export to Thailand.

5. Hermansyah & Savitri (2008), made a research about the impact of AFTA to ASEAN 5 export performance using gravity model approach in the period of 1995-2006. They use gravity model in demand side and use AFTA dummy variable to capture the effect of AFTA to ASEAN 5 export performance. The model is explained as follow:

$$\text{Log}(Xjt) = b_0 + b_1 \log(GDPP)_{jt} + b_2 \log(D)_{aj} + D_1 AFTA + D_2 Trend + \varepsilon_{ijt}$$

GDPP is a multiplication of per capita GDP exporting country and per capita GDP of importing country, D is distance, AFTA is dummy for AFTA and trend is dummy to capture permanent growth of export.

The result estimation shows that GDPP has positive and significant affect to increase export performance of each ASEAN 5 country, distance has negative and significant effect, AFTA and trend dummy also has positive and significant affect to export performance of ASEAN 5 countries. Although statistically, the creation of AFTA and export performance of each ASEAN 5 countries are increasing after the implementation of AFTA but in reality the result is not optimally significant. From export data, in 2006 intra ASEAN export share was 24.9%, while in 1999 the share was 21.7. The increasing might happen not only because of AFTA but it could be due to ASEAN economics which is more competitive rather than complemented. The competition became tighter as each country focus more on non tariff barriers in order to keep their domestic product survive from intra trade competition.

6. Cadarajat & Yanfitri (2008) made a research about the impact of short distance to Indonesian provinces commodity export using gravity model approach. The study use panel data with 15 main commodities and 24 provinces in Indonesia. The partner country which are included in this study; ASEAN countries, Australia, New Zealand, Papua New Guinea, Bangladesh, Srilangka, India, Japan, South Korea and China from 1999-2006. Before estimate using gravity model, this study starts with analyzing export pattern of each province in Indonesia. The gravity model used in the estimation is as follow:

$$\log T_{ij} = b_0 + b_1 \log(Dist)_{ij} + b_2 \log(Y)_{it} + b_3 \log(M)_{jt} + b_4 \log(RER)_{jt} + \varepsilon_{ijt}$$

Where, T_{ij} is the level of commodity export from i to j, Dist is physical distance from i to j, Y is income of country i, M is import of country j from i and RER is real exchange rate. The estimation uses random effect model. The result shows that a half of Indonesian main commodity export has negative elasticity with distance. The value of distance coefficient is influenced by characteristics of commodity and condition of partner country. Commodity with heavy weight and relatively hard to be moved has high elasticity to

distance such as coal and CPO (elasticity more than 1), copper seed, nickel and tin (elasticity approaching to 1). Meanwhile, the commodity which is relatively easy to move such as machinery, telecommunication equipment, coffee and tea have small elasticity coefficient to distance. On the contrary, some main commodity such as wood products, paper, clothing and furniture is not affected by distance variable. Besides distance, export also influenced by real income from partner country with higher elasticity in primary commodity and raw material export compared to manufacture industry (textile & clothing, paper and furniture). Export also influenced by income of exporter which most commodities has positive affect to increasing income of exporter, except wood and coal. RER found insignificant to Indonesian export to Asia region, except for coffee, cocoa and tea products

Specifically for textile and textile products the result is, for textile yarn, fabrics and production; distance has negative and insignificant affect, import of country j from Indonesia has positive and significant affect, income of country i has positive and significant affect and real exchange rate has negative and insignificant affect. For clothing; distance has positive and significant affect, import of country j from country and income of country I has positive and significant affect and real exchange rate has positive and insignificant affect.

CHAPTER III
PROFILE OF TEXTILE AND TEXTILE PRODUCTS

Textile and Textile Product is one of non oil commodity that has major contribution in Indonesian foreign reserves. It becomes important because of several reasons; absorb reserves largely, provide job opportunity because of its labor intensive industry, contribute big net export and give big contribution to gross domestic product.

Table 3.1
Share of Each Industry in Gross Domestic Product, 2005-2008
(In %)

Type of Industry	2005	2006	2007	3rd quarter in 2008
Food,Beverage and Tobacco	28.58	28.46	29.79	28.15
Textile, leather & footware	12.40	12.06	10.56	11.00
Pulp and Paper	5.67	5.97	6.19	4.06
Fertilizer, Chemical and leather product	5.45	5.30	5.12	5.31
Cement and mining (non metal)	12.25	12.59	12.49	13.52
Metal, iron & steel	3.95	3.88	3.70	3.34
Machinery transport & equipments	2.96	2.77	2.58	1.68
Other goods	27.81	28.02	28.70	32.34
Total	0.93	0.95	0.85	0.79

Source: BPS, processed by Ministry of Industry 2008

From the table above, it can be seen that textile industry positioned in the third ranks of the biggest share of sector industry in GDP in 2005. But then from 2005 until 2007, the share fell to 10.56% and positioned in the fourth rank. Then in the third quarter of 2008, the share increased to value of 11%.

Labor intensive is an important issue especially for developing country such as Indonesia who has abundant in labor resources. The table below shows the labor absorption in textile and textile products industry. From 2002 until 2004, the

number of labor in textile and textile product industry increased from 1.182.212 in 2002 to 1.184.079 in 2004. But then it decreased to 1.176.183 in 2005.

Table 3.2
Labor Absorption in Textile and Textile Products Industry, 2002-2005

	2002	2003	2004	2005
Large Industry(direct)	1,182,212	1,182,871	1,184,079	1,176,183
small industry (direct)	635,210	584,786	668,372	665,337
Undirect	3,634,884	3,535,314	3,704,902	3,683,040
Total	5,452,266	5,302,971	5,557,353	5,524,560

Source: Ministry of Trade, 2006

As textile and textile products consist of four main products, the table below will describe the value and growth of labor in each sector of textile and textile product industry.

Table 3.3
Value and Growth of Labor Absorption for Textile and Textile Products in Indonesia, 2001-2007

Labors	Person ('000)							Growth (%)					
	2001	2002	2003	2004	2005	2006	2007	2002	2003	2004	2005	2006	2007
Man made	29,682	29,447	29,447	29,447	29,447	28,447	28,600	0.79	0.00	0.00	0.00	3.40	0.54
Spinning	207,871	209,426	207,764	207,764	207,764	207,764	208,800	0.75	0.79	0.00	0.00	0.00	0.50
Weaving	355,566	343,158	343,988	343,988	343,988	342,988	344,200	3.49	0.24	0.00	0.00	0.29	0.35
Garment	376,584	350,901	352,457	353,590	346,294	367,685	371,800	6.82	0.44	0.32	2.06	6.18	1.12

Source: BPS, Ministry of Industry, API

From the table above, it can be seen that the biggest number of labor absorption is in garment industry. This industry is a labor intensive since it needs large number of labors in doing garment processing. And the smallest number of labor is in man made industry. It means that this industry is more capital intensive.

As mentioned above, another importance of textile and textile products is for its export growth contribution to non oil and gas export growth. Below is the table of non oil and gas export growth, included textile and textile products.

Table 3.4
Non Oil and Gas Export Growth, 2006-2008
(in Billion US$, Change in %)

Description	2006	2007	Jan-Oct 2007	Jan-Oct 2008	Change (%)
Textile & Textile product	9,446	9,810	8,150	8,518	5.3
Electronics, electricity apparel etc	11,988	122,652	10,388	11,494	10.6
Iron, Steel, machine, automotive	3,787	4,377	3,551	5,262	48.2
Wood and wood products	3,355	3,128	2.584	2,418	-4
Leather, footwear	1,902	2,002	1,627	1,838	12.9
Copper seed	6,898	7,835	7,004	5,724	-18.3
Chemical and chemical products	4,067	5,326	4,482	5,096	13.7
Paper and pulp	3,983	4,440	3,565	4,522	26.8
Coal	6,410	7,122	5,852	8,745	49.4
Fish,Shrimp,cockle	1,642	1,723	1,408	1,645	16.8
Natural rubber and rubber products	5,529	6,248	5,066	6,796	34.1
Fat and vegetable oil	6,172	10,339	7,909	13,569	71.6
Jewelry	698	897	769	840	9.2
Coffee,tea and pepper	920	1,036	804	1,259	56.5
Cacao	855	924	751	1,034	37.7
Food and beverages	1,121	1,345	1,076	1,627	51.2
Other goods	10,809	12,801	10,856	11,735	8.1
Non oil and gas	79,589	92,012	75,850	92,255	21.6
Oil and gas	21,209	22,088	17,464	26,177	49.9
Total	100,789	114,100	93,314	118,432	26.9

Source: BPS, processed by Ministry of Industry 2008

3.1 The Development of Textile and Textile Products Industry

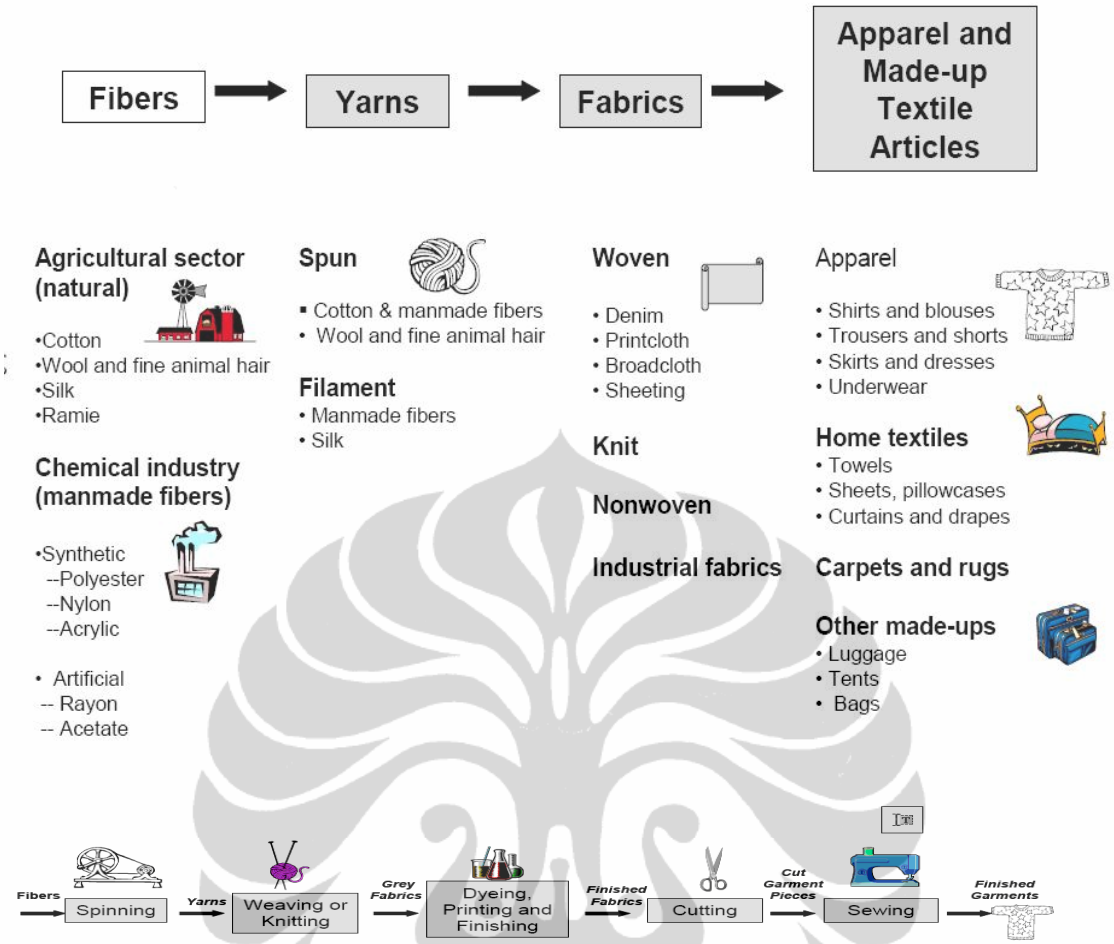
The Indonesian textile industry is an old industry. It can be seen from the weaving industry that was developed during the late-colonial period in the 1920s.

The industry was local weaving industry using hand loom as tools and was dependent almost entirely on imported yarn. In the 1960s, the industry slowly developed, with mostly old vintage power looms accounting for only 8 percent of total weaving capacity in 1962.

The economic turmoil in the early 1960s created further difficulties in the textile industry in terms of the supply of raw material and spare parts, with the result that much of its existing capacity was idle. Realizing that an adequate supply of textile is as important as adequate food supplies, the new order government gave a high priority to the development of the textile industry. The rapid increase in income resulted in a rapid increase in domestic demand. The favorable investment incentives offered at the time resulted in a rapid expansion of modern spinning and weaving industries from the early 1970s (Kamp et al, 1998). However, the growth of the modern textile industry entailed social costs in the form of displacement of the unprotected small-scale, hand loom sub-sector (Hill, 1983).

Textile and Textile Products industry consists of process chain started from raw material until final goods. In this process, supply chain consists of several steps: fiber to spin, spin to yarn, yarn to fabrics and fabrics to final goods, such as clothes and textile apparels.

The output of textile products is divided into two parts which are textile product and apparel product. Textile products consist of yarn, fabrics and man made articles such as carpet, bed, bath, kitchen linen, luggage and other goods. Meanwhile, apparel product consists of knit, garment and clothing accessories such as gloves. The figure below shows the major products in textile industry, which are fibers, yarns, fabrics and apparel, made up textile articles.



Source: United States Trade Commission, 2004

Figure 3.1 Major Products of Textile Industry

In its development, textile industry has been through modernization in its process. It can be seen in the usage of technology in textile production. It means that textile industry is become more competitive. Historically, textile industry belongs to developed country. But as the decreasing growth of textile and textile products production in developed country, it also causes decreasing in the number of labor. When a company uses more technology in term of efficiency, it means that there will be efficiency too in term of labor. It also because the wages of labor in developed countries is getting higher. It causes increasing in cost of production. In this situation, company has to find other place that has abundant of labor and absolutely has lower wages. This kind of needed is available in developing countries.

The movement of area production from developed to developing countries which has lower wages, happened since 1970s. At that time, three Asia countries namely, Hong Kong, Taiwan and South Korea become the main exporter of garment. The growth of textile and textile products industry in those countries has reached the peak in 1980s. The export supply from these countries has reached 30% of world garment export. But then the share decreased to 8% of world export supply in 2001. The decreasing happened because risen textile and textile products industry in other countries which provide lower wages. There are second generation of low wages country, such as China, India, Pakistan, Indonesia, Philippine, Thailand and other Asia countries.

Indonesia has vertical integration of textile industry in every phase of production, from the production of synthetic fibers to yarn spinning, fabric forming and finishing, and apparel manufacturing.. Although Indonesia imports cotton as raw material for the input of textile industry but Indonesia produce a large synthetic fiber manufacturing industry. Indonesia has competitive advantage in terms of labor, electricity, and fuel costs. But recently, fuel cost in Indonesia is gradually increasing since 1999. The cost of electricity also increases as government reduces subsidy for electricity. It also happens to wages of labor. There is gradually increased in minimum wage for labor in Indonesia, as the needed of consumption in Indonesia is increasing.

Indonesia has approximately 8,000 manufacturers of textiles and apparel. The locations are mostly concentrated in West Java (57%), Central Java (14%), and Jakarta (17%). The rests are spread out from East Java, Bali, Sumatera, and Yogyakarta. (Miranti, 2007:1)

In 2004, the increasing of capacity production is 4% compared to 2003. The production includes five textile and textile product sub-sector: fiber, spinning, weaving or knitting, garment and other textile and textile product. But then, in 2005 it decreased to 5.8 Million and then in 2006-2008, it increased to the value of 6.1 Million ton. Meanwhile, in the textile and textile products real production there was an increasing around 4% in 2004 compared to 2003, But then, in 2005 it decreased to 4.32 Million. In 2006-2007, it increased to 4.98 Million to but then it fell again in 2008 to 3.94 Million ton.

Furthermore, below is the table of improvement in textile and textile product industry. (Infobanknews, 2009)

Table 3.5
Textile and Textile Products Industry Performance, 2004-2008

	2004	**2005**	**2006**	**2007**	**2008**	**2007 - 2008**	**2004 – 2008**
Number of Company (Unit)	2,661	2,656	2,699	2,726	2,818	3.37	1.45
Investment (RP Billion)	132,839	132,381	135,677	137,792	141,882	2.97	-
Capacity (000 Ton)	6,021	5,855	6,023	6,094	6,23	2.23	0.88
Men Power(person)	1,092,540	1,118,734	1,190,656	1,234,250	1,284,000	4.03	4.13
Labor Absorption	28,075	26,194	71,922	43,594	49,75	14.12	35.65
Production Value (Billion Rp)	85,577	93,241	99,157	102,217	87,088	-14.8	0.9
Pproduction Volume (000 Ton)	4,361	4,32	4,484	4,987	3,942	20.95	-1.72
Export Value (US$ Thousand)	7,647,451	8,602,876	9,445,663	10,003,750	10,830,000	8.26	9.11
Import Value (US$ Thousand)	1,720,560	1,605,528	1,714,157	2,014,384	2,838,829	40.93	14.63
Surplus (US$ Thousand)	5,926,892	6,997,348	7,731,506	7,989,366	7,991,171	0.02	-
Export Volume(Ton)	1,626,485	1,794,392	1,879,173	1,890,050	1,983,050	4.92	5.14
Import Volume(Ton)	880,893	850,629	949,66	1,090,285	1,524,654	39.84	15.71
Utilization (%)	67.77	69.4	70	75.81	63.27	16.53	-1.24

Source: API, 2009

In its development, textile and textile products industry shows a decreasing in its growth. In 2005 until 2006, the growth decreased from 1.3% to 1.2% and it continues to decrease in 2007 reached the level of -3.7%. The table below will shows the growth of non oil and gas industry, including textile industry from 2005-2007 and prediction of 2008.

Table 3.6
The Growth of Non Oil and Gas Industry, 2004-2008
(in %)

Type of Industry	2004	2005	2006	2007	Forecast of 2008
Food,Beverage and Tobacco	2.75	7.21	5.05	-0.84	3.20
Textile, leather & footware	1.31	1.23	-3.68	-3.41	-2.50
Wood and wood products	-0.92	-0.66	-1.74	2.05	-0.10
Pulp and Paper	2.39	2.09	5.79	-0.22	3.90
Fertilizer, Chemical and leather product	8.77	4.48	5.69	5.18	1.00
Fertilizer, Chemical and leather product	3.81	0.53	3.40	-1.30	-1.50
Cement and mining (non metal)	-3.70	4.73	1.69	1.25	3.10
Metal, iron & steel	12.38	7.55	9.73	13.82	11.59
Machinery transport & equipments	2.61	3.62	-2.82	-3.31	-3.24
Total	5.86	5.27	5.15	4.57	4.80

Source: BPS, processed by Ministry of Industry 2008

3.2 Profile of Textile and Textile Products Industry

Based on structure and technical issue, textile and textile products industry can be divided into three vertically integrated industries: (Miranti, 2007:2)

1. Upstream industry

Upstream industry has specific characteristics such as capital intensive, high scale, small number of labors and high output of each labor in its production. This sector has several production processes such as:

a. Fiber production which consists of natural fiber, man made fiber or synthetic
b. Spinning activities which processing materials become unblended and blended yarn

At the up stream industry, fiber industries consisting of natural fiber, fabricated fiber, filament, knitting and spinning industry. Until 2007, there are 28 fiber companies with 1.150 tons capacity. Around 70% of this product is used by domestic knitting industry and the rest is exported. Currently Indonesia becomes

the seventh biggest producer of fiber in the world that supplies 10% of the demand.

In the spinning industry there were 205 companies in 2007. This industry has 2.5 ton installed capacity with 7.8 million machinery units. This machinery unit has been stagnant since 2003 because around 60% of the machinery is more than 20 years old. The old machinery causes an inability to optimally fulfill market demand both domestic and international. Almost half of the production of the knitting industry is used for domestic market and the rest is for export.

2. Midstream industry

Midstream industry is semi capital intensive, mid and modern technology and use higher number labors compared to upstream industry. This sector consists of some process:

a. Interlacing process which processing yarn become grey fabrics
b. Dyeing process
c. Finishing and printing process

Mid stream industry has almost the same condition with upstream industry. In 2008, at weaving, knitting, dying and finishing industry there were total of 1.044 companies with 1.8 ton capacity of production have been stagnant for the last 5 years. This industry is probably the worst among the textile and textile products industry as 66% of 248,957 weaving machineries are more than 20 years old and 26% are above 10 year old. Meanwhile 93% of 349 units of knitting and finishing machineries are more than 20 years old. Because of limited capability, export of this sub sector of industry is contributed by raw fabric and the main market is Europe and Middle East countries.

3. Downstream Industry

This sector has labor intensive characteristic and part of manufacturer industry. This sector consists of cutting, sewing and washing process. At the garment industry, in 2007 there were 901 garment industries with a total installed capacity of 779 thousand tons.

3.3 Investment in Textile and Textile Products in Indonesia

Indonesia is one of the largest producers of textiles and apparel in the ASEAN region. Textile production capacity in Indonesia has been running at a high-capacity utilization rate, but equipment expansions and upgrades were generally put on hold in 2000 and 2001 because of reduced foreign direct investment (FDI), high inflation, and political instability.

During 2006, foreign investment was still dominated by four countries which are India (PT. Indorama), Japan (PT. Summitmas Group), South Korea (Korea Garmen Group) and Taiwan (Taiwan Garmen Group). During the first four months of 2006, there were 40 Korean companies investing their money on textile and textile products industries in total of US$ 375 millions.

The figure of development of textile and textile products investment in Indonesia based on textile products can be seen below. From the figure, the highest investment is other products, the followed by fabric, yarn, fiber and clothing. This position is in the period of 2001-200.

Table 3.7
Textile and Textile Products Industry Investment in 2001-2007
(Billion Rp)

Investment	2001	2002	2003	2004	2005	2006	2007
Fiber	11640	11929	11929	11929	11929	12306	12956
Yarn	24777	25040	25040	25040	25040	25558	26284
Fabric	30811	31428	31636	31705	31567	32330	32720
Clothing	2808	2913	2958	2978	2975	3318	3740
Other product	60786	60790	60790	60790	60790	62135	62135
Total	130822	132100	132353	132442	132301	135647	137835

Source: API, 2008

3.4 Indonesian Textile and Textile Products Export

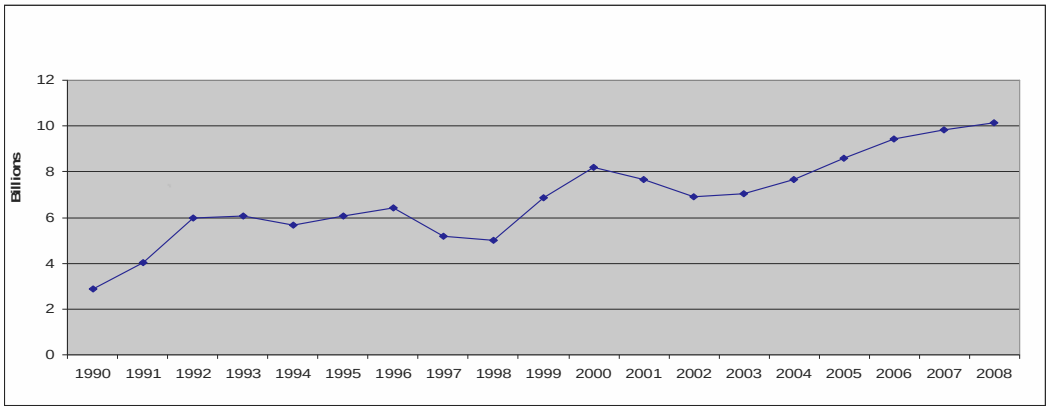
3.4.1 Indonesian Textile and Textile Products Export Performance

This research will describe all kind of textile and textile product. Based on Harmonized system (HS), textile and textile product has 14 item with 2 digits as headings, started from HS 50 to HS 63.

Table 3.8
HS Description in Textile and Textile Products

HS	Description
50	Silk
51	wool, animal hair and woven fabric
52	Cotton
53	other vegetable textile fibres and paper yarn
54	man-made filaments
55	man-made staple fibres
56	wadding, felt and non-wovens, special yarns and ropes
57	Carpets
58	special woven fabrics and trimmings
59	industrial textile fibres
60	knitted or crocheted fabrics
61	knitted or crocheted clothes
62	clothes (not knitted or crocheted)
63	other textile articles and used clothing

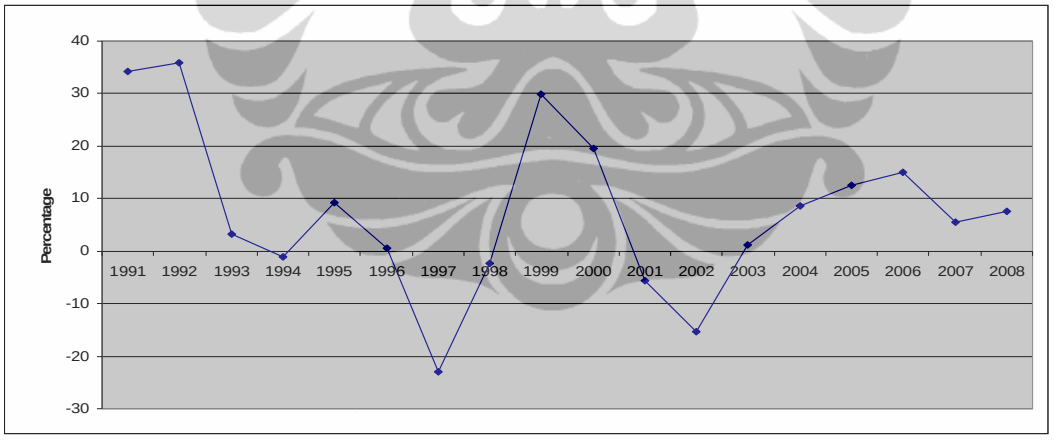
From the data prepared by BPS, as the figure below shows, it can be seen that from 1990 until 1993, Indonesia export of textile and textile product grew from 2.8 Billion US$ in 1990 to 6.1 Billion US $ in 1993, but then it fell to 5.6 Billion US$ in 1994. In 1997, it fell to 5.1 Billion US$ and fell until reached the lowest value in 1998 by about 5 Billion US$. This condition might happen related to economic crisis that hit Indonesia and some Asia countries in 1997-1998. Then export grew to 8.2 Billion US$ in 2000 but then fell again in 2001 and 2002, reached the value of 7.1 Billion US$ in 2002. Started from 2003 until 2008, export grew rapidly to 10.14 Billion US$ in 2008.



Source: BPS, 2009 (processed)

Figure 3.2 Indonesian Textile and Textile Products Export to the World, 1990-2008

From the graph below, it can also be seen the growth of Indonesian textile and textile product export from 1990-2008. The graph shows that there are some periods where the growth was in a negative sign. It happened in 1993, 1994, 1997 and 2002. The rest period has positive growth.



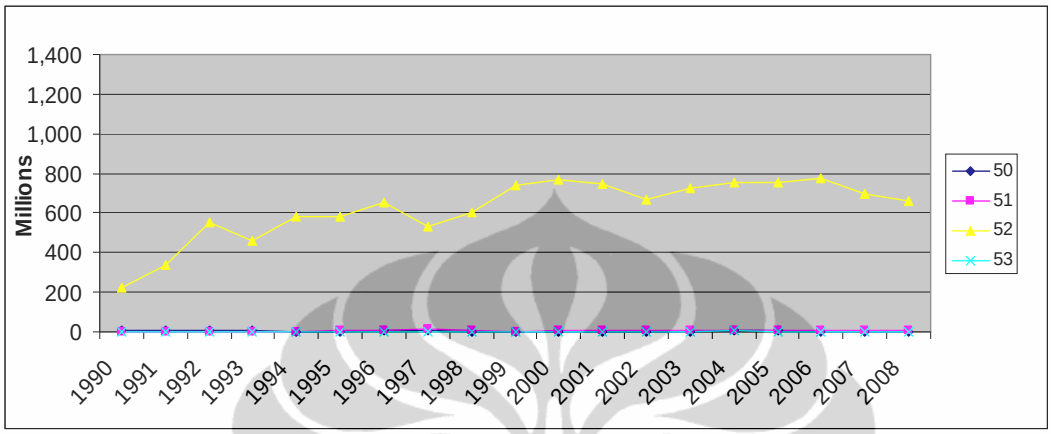
Source: BPS, 2009

Figure 3.3 Growth of Indonesian Textile and Textile Products Export to the World, 1990-2008

Furthermore, below is the explanation of Indonesian export performance of textile and textile product based on textile and textile products category:

1. Fibers

Fibers consist of silk, wool, cotton and man made fiber. Indonesian export of fibers product in 1990 to 2008 is describe as follow:



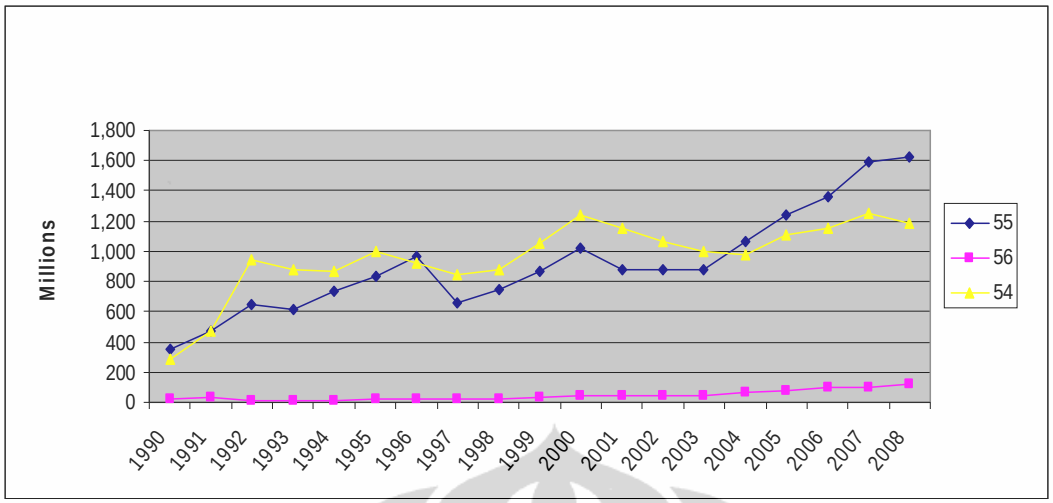
Source: BPS, 2009 (Processed)

Figure 3.4 Export of HS 50-53 to the World, 1990-2008

From the graph above, it can be seen that HS 50 (silk), 51(wool,animal hair and woven fabric) and 53 (other vegetable textile fibres and paper yarn) has lower value of export compared to HS 52 (cotton). The movement of HS 52 was up and down. Started from 2004, the movement shows increasing trend but then in 2008 the value is decreased compared to 2007. HS 52 reached the highest value in 2006 and also has the lowest value in 1997. Started from 2002, the movement shows increasing line but then from 2006 until 2008, the value continue to decline.

2. Yarns

Yarn consists of yarn made from silk, wool, cotton, filament, dan staple fiber. Based on harmonized system, yarn product included in HS 54 (man made filament), HS 55 (man-made staple fibres) and 56 (wadding, felt and non-wovens, special yarns and ropes).



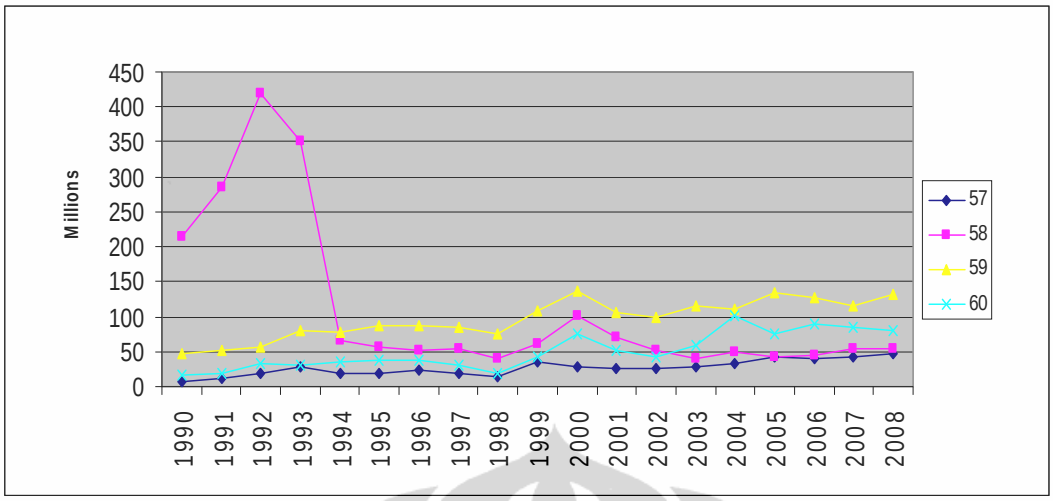
Source: BPS, 2009 (processed)

Figure 3.5 Export of HS 54-56 to the World, 1990-2008

From the graph above, it can be seen that HS 54 and 55 has higher value of export compared to HS 56. Since the period of 1990 the value of HS 54 and 55 is continue to increase. From early 1990s until 2003, HS 54 has higher export value compared to HS 55 and HS 56, but then started from 2004, export value of HS 55 is higher than HS 54, while the movement of HS 55 continue to climb up, the movement of HS 54 stay stable and increase but not as much as HS 55..Meanwhile, HS 56 has relatively stable growth of value since 1990 to 2008.

3. Fabrics

Fabrics consists of woven (silk, wool, cotton, filament, staple), felt, non-woven, woven file fabric, terry towelling fabric, gauze, tulle and others net fabric, lace, narrow woven fabric, woven badges and similar, braids in the piece, woven fabric of metal thread, embroidery, quilted textile product, impregnated, coated covered or laminated textile fabric, knitted fabric.



Source: BPS, 2009 (processed)

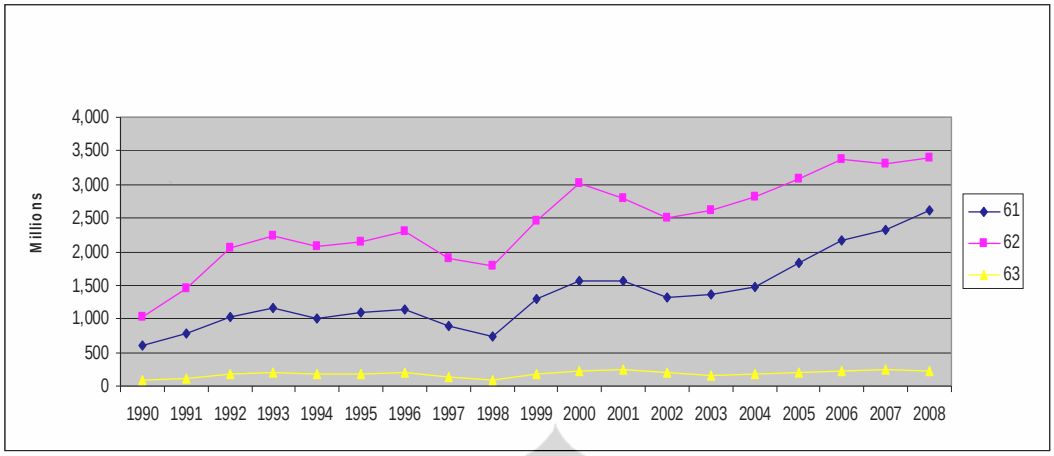
Figure 3.6 Export of HS 57-60 to the World, 1990-2008

Based on harmonized system, fabrics product consists of HS 57 (carpets), 58(special woven fabrics and trimmings), 59 (industrial textile fibres) and 60 (knitted or crocheted fabrics).

From the graph above, it can be seen that HS 58 has more fluctuate movement of export value. From 1990 to 1992, it has increasing value, but then it started to decrease from 1993 and reached the lowest level in 1998. Then it started to increase in 2000 and continue until 2008 although in relatively small value. At the beginning of 90s, HS 58 dominated and reached the highest value in 1992, but then in 1994 it decreased while HS 59 started to increased, so started from 1995 until 2008 the value of HS 59 is higher compared to HS 58, HS 57 and HS 60. On the contrary, HS 57 continue to be the last position with the lowest value from 1990-2008 compared to other HS

4. Garment and Other Textile Products

Garments consist of knitted and non knitted clothes. It included to HS 61 - 63 in harmonized system, HS 61 (knitted or crocheted clothes), 62 (clothes (not knitted or crocheted) and 63 (other textile articles and used clothing)

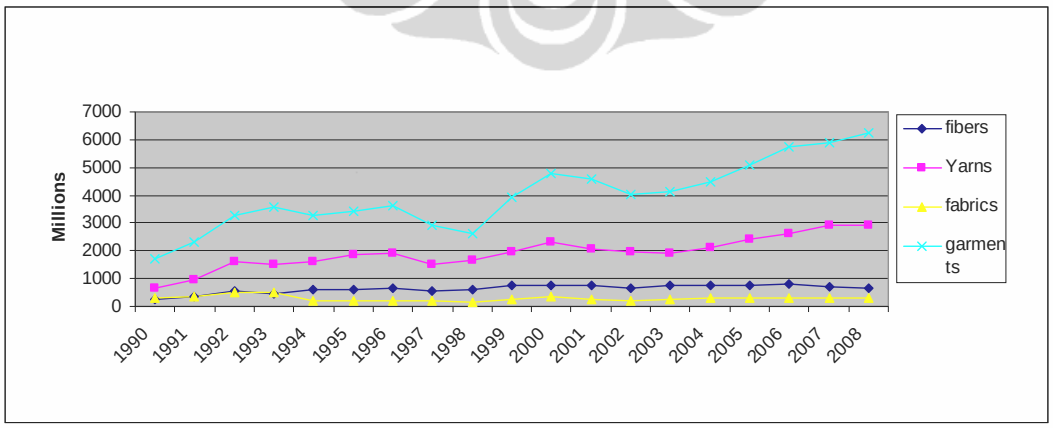


Source: BPS, 2009

Figure 3.7 Export of HS 61-63 to the World, 1990-2008

From the graph above, it can be seen that HS 61 and 62 has increasing movement of export value from 1990 to 2008, while HS 63 has more stable movement. HS 61 and 62 reached the highest level in 2008 and the lowest value in 1998. The movement pattern of HS 61 and 62 is almost the same. The difference was in 2006, when HS 62 experienced a decreasing value in 2007,but then up again in 2008, while HS 61 continue to increase from 2006-2008.

After analyzing each product category below is the graph of all textile and textile product export value in 1990-2008.

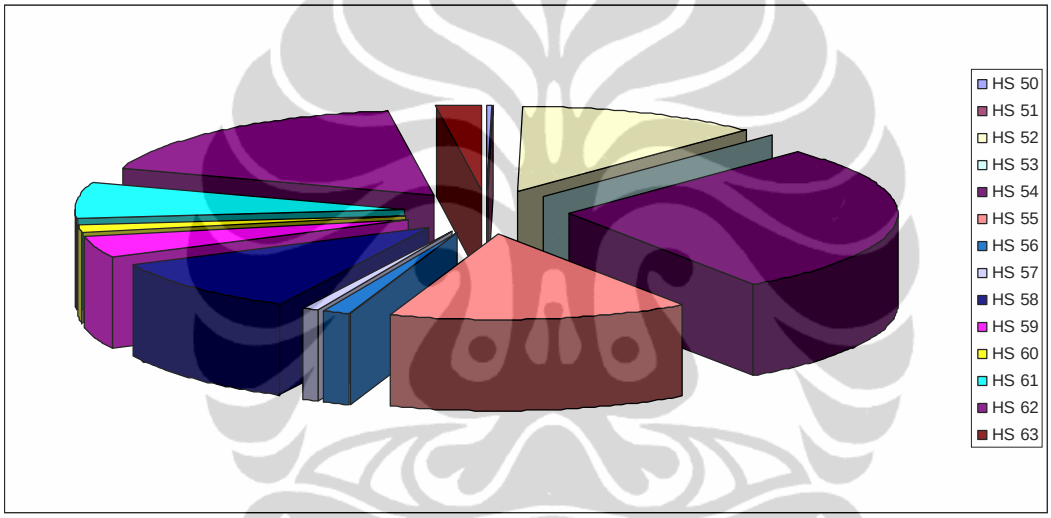


Source: BPS, 2009

Figure 3.8 Export of Fibers, Yarns, Fabrics and Garments to the World, 1990-2008

From the graph above, it can be seen that garment products has the highest export value compared to three others product. Yarn has the second position, followed by fibers and fabrics in the last position. All of these products have increasing movement in its export value from 1990 to 2008. In 1998, most products reached the lowest level, but then started from 1999 it continues to increase, but then in 2001, 2007 and 2008 there are also decreasing movement.

Every country has its characteristics that can influence the demand of textile and textile products. Below is the share of each HS in Indonesian textile and textile products export to the world.



Source: BPS, 2009

Table 3.9 HS Composition of Indonesian Textile and Textile Products Export to the World, 1990-2008

In the figure above, it can be seen that the composition is HS 62 (36%), 61 (20%) , HS 54 (14%), HS 55 (13%), HS 52 (9%), HS 63 (3%), HS 58 (2%), HS 59 (1%), HS 60 (1%), HS 56 (1%), HS 57 (0.4%), HS 51 (0.07%), HS 50 (0.05%) and HS 51 (0.03%).

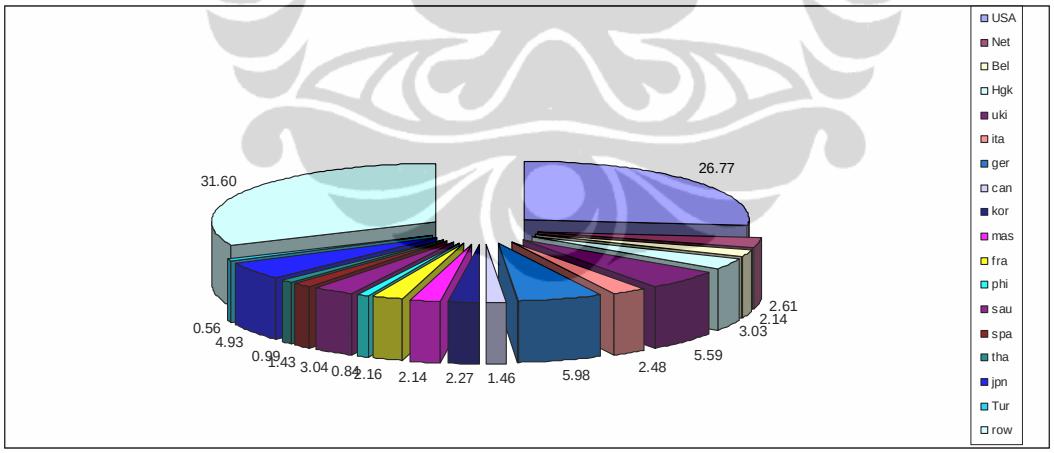
The biggest share is HS 62 (clothes not knitted or crocheted) and the smallest is HS 51 (wool, animal hair and woven fabrics). As mentioned before that HS 62 is a part of downstream industry which has specific characteristics such as labor intensive because it absorbs large number of labors. Meanwhile, HS

51 is a part of upstream industry which is more capital intensive. This composition can explicitly explained that in textile and textile products industry, Indonesia still depend much on its abundant labor force rather than capital. But there are things that have to be concerned is the increasing of labor wages in Indonesia and other internal problems that can decrease competitiveness of Indonesian labor compared to other countries, especially Asia countries which have lower wages.

3.4.2 Main Destination of Indonesian Textile and Textile Products Export

Based on Indonesian textile and textile products export data, in 2000-2008 there are twelve main destination countries are USA, Japan, Germany, UK, UEA, South Korea, Malaysia, Italy, Belgium, Turkey, Netherlands, Saudi Arabic, Hong Kong, Singapore, China, France, Brazil, Canada, Spain and Thailand. In this research, 17 countries will be taken as object of observation.

In object of observation, the share of main destination of Indonesian textile and textile products export can be analyzed as the figure below showed:



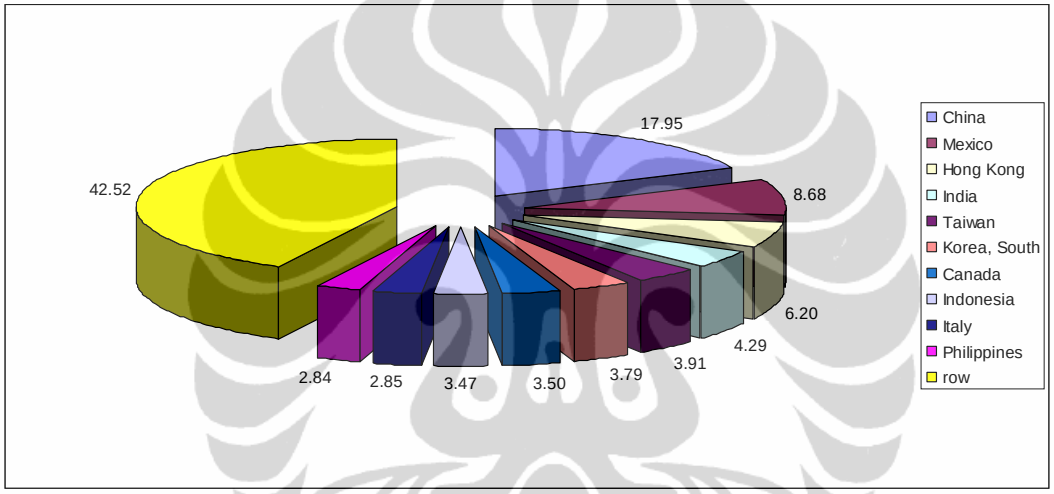
Source: BPS, 2009

Figure 3.10 Main Destinations of Indonesian Textile and Textile Products Export, 1990-2008

From the figure above, it can be seen that the three biggest share of Indonesian textile and textile products export in the period of 1990-2008 are USA (26.77%), Germany (5.98%) and UK (5.59). Meanwhile, the three smallest shares

are Thailand (0.99), Philipine (0.84) and Turkey (0.56). From the whole share, it can be seen that the biggest share of Indonesian textile and textile products export still positioned by USA and European countries. On the contrary, Asia especially South East Asia has small share.

Meanwhile, since USA is the biggest share of Indonesian textile and textile products export, it also important to know Indonesia's position in USA market. Indonesia has potential position in share of importers of textile and textile products in USA. This fact can be shown in the figure as follow:



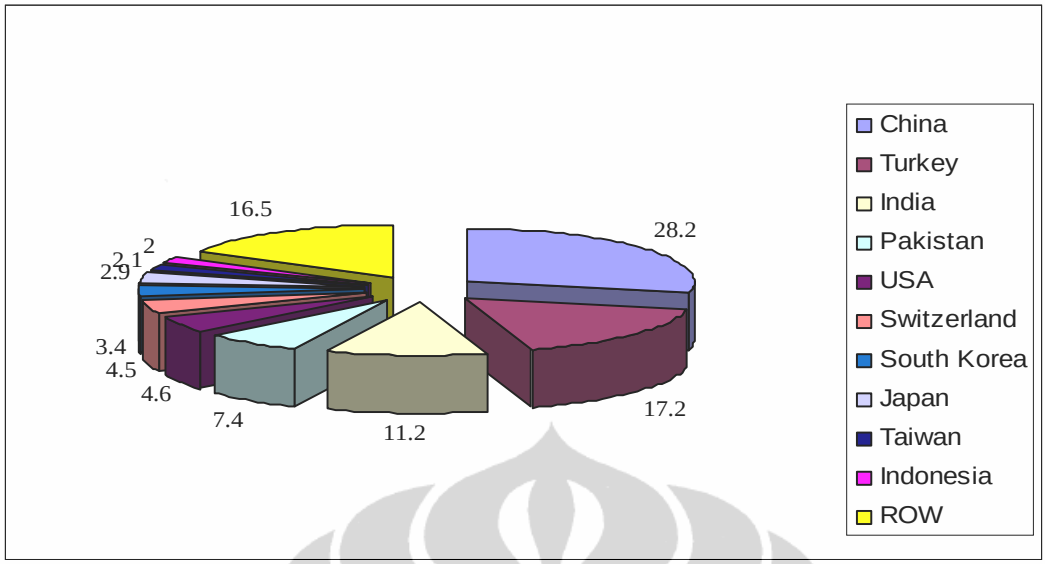
Source: otexa.ita.doc.gov, 2009 (processed)

Figure 3.11 Importer Countries' Share in US Market, 1990-2008

From the figure above, it shown that Indonesia positioned in the eight rank (3.47%) in US market (US$ value). The biggest shares in US market are China (17.95%), Mexico (8.68%) and Hong Kong (6.20%). Other ASEAN country which positioned in top ten importer of US market is Philippine in ninth rank (2.84%). This facts shows that Philippine has become one of Indonesia's competitor from ASEAN region.

The second main destination of Indonesian textile and textile products is EU, since Germany and UK positioned in second and third rank of Indonesian main destination for textile and textile products.

Below is the figure of major textile importer in EU market in 2005 – 2008:

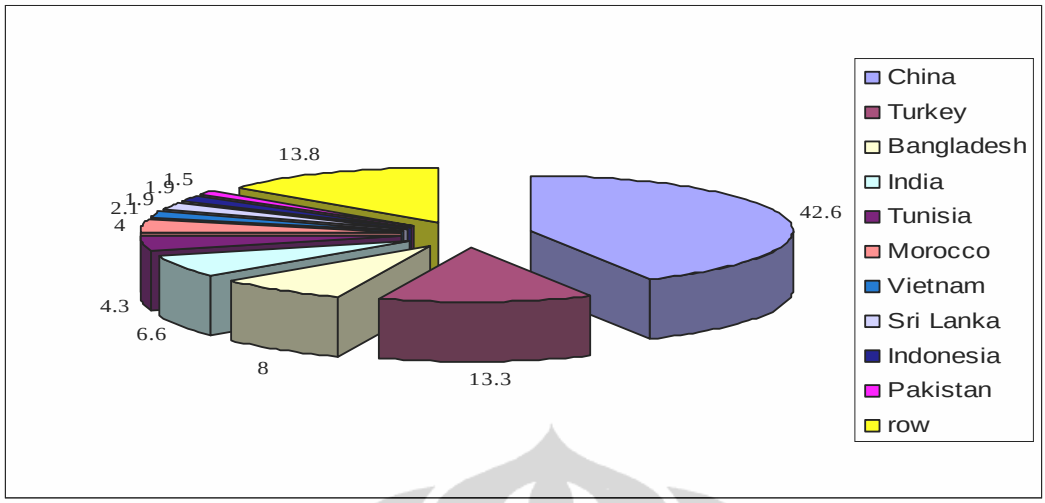


Source: Eurostat, 2009 (processed)

Figure 3.12 Major Importer of Textile in EU Market, 2005-2008

The figure above shows that Indonesia is in the tenth position (2%) among importer of textile in EU market. Meanwhile, China (28.2%), Turkey (17.2%) and India (11.2%) are the three largest supplier of textile in EU. The growth of Indonesian textile export to EU in 2005-2008 is 2%. China still has the fastest growth with 37.5%, while Turkey has relatively slow growth 2.7% and India has 9.2% growth in its textile import to EU.

In clothing market, from the figure below, Indonesia is in the ninth rank with only 1.5% share. China and Turkey still dominated in first and second ranks with 42.6% and 13.3%. The third major importer of clothing is Bangladesh with 8% shares. The growth of Indonesian clothing import to EU is -2%. It shows that Indonesia has decreasing value of clothing import to EU from 2005 until 2008. China still has fastest growth with 49.2%, while Turkey has decreasing growth -2.7%.



Source: Eurostat (processed)

Figure 3.13 Major Importer of Clothing in EU Market, 2005-2008

3.4.3 World Major Exporter and Importer of Textile and Textile Products

Major textile and textile products exporter are dominated by Asia countries, especially developing country. Below is the table that will show major exporter countries of textile and textile products in the world.

Table 3.9
Major Exporter of Textile and Textile Products to World Market, 2005
(Million US$)

Country	Export
China	53.28
Korea	15.24
Taiwan	12.29
India	11.73
Turkey	10.60
Hong Kong	10.31
Indonesia	7.80
Pakistan	6.73
Bangladesh	5.53
Thailand	5.49
Malaysia	3.11
Sri Langka	2.75
Philipine	2.68

Source: Ministry of Trade (2006)

From the table above, Indonesia positioned in the sixth rank among exporter of textile and textile products. In 2005, Indonesia has 7,803 Million US$ textile and textile products export with share of textile and textile products compared to other non oil and gas export was 14%.

Meanwhile, there are a number of major importer of textile and textile products which are potential destination for exporter countries to market its textile and textile products.

Table 3.10
Major Importer of Textile and Textile Products in the World, 2005
(Million US$)

Country	Import Value
EU	68.75
United States	21.01
China	15.63
Hong Kong	14.38
Mexico	6.25
Japan	5.63
Turkey	4.44
Canada	4.38
Korea	3.82
Vietnam	3.81
Rumania	3.75
UEA	2.00
Russia	1.94
Australia	1.91
Thailand	1.88

Source: Ministry of Trade (2006)

The table shows that the largest market for textile and textile products is EU. Followed by USA and China positioned in the second and third ranks. From the previous table of major exporter of textile and textile products, China is the largest exporter and in this table it is found that China is the third largest importer of textile and textile products. This fact shows that China has big role in both supply and demand side of textile and textile products in the world market.

CHAPTER IV
TEXTILE AND TEXTILE PRODUCTS IN THE FRAMEWORK OF AFTA

4.1 ASEAN Free Trade Area (AFTA)

As a regional trade agreement among ASEAN countries, AFTA has three main objectives; the first is to stimulate intra and extra regional trade and to improve the investment climate and enhancing the competitiveness of industrial performance of its member states. The second is to attract the flows of foreign direct investment. And the third is to provide a substantive background on the global and regional trends and issues concerning the rapidly changing international economic environment as well as highlight the increasing international economic interdependence.

As a part of world market, ASEAN countries are doing export and import activities with other countries outside ASEAN. ASEAN export and import performance with countries outside the region is relatively higher than intra export and import. This condition can be showed by the table below.

Table 4.1
Intra-Extra ASEAN Export and Intra-Extra ASEAN Import, 2008
(in US$ Million, share in %)

Country	Intra ASEAN Export		Extra ASEAN Export		Intra ASEAN import		Extra ASEAN import	
	Value	Share to total export	Value	Share to total export	Value	Share to total import	Value	Share to total import
Brunei Darussalam	1972.9	22.5	6781.2	77.5	1571.4	50.6	1534.5	49.4
Cambodia	310.6	7.1	4047.9	92.9	1599.3	36.2	2817.7	63.8
Indonesia	27170.8	19.8	109850	80.2	40991.7	31.7	88205.5	68.3
Lao PDR	724.4	87.5	103.3	12.5	1490.9	82.7	312.4	17.3
Malaysia	50401.4	25.9	144095	74.1	34765.3	21	109.523.5	79
Myanmar	3853.4	58.2	2767.2	41.8	1728.2	45.5	2066.7	54.5
The Philippine	7081.7	14.4	41943.7	85.6	14316.7	25.3	42328.9	74.7
Singapore	101477.3	42	139927	58	69878.1	30.3	160882.3	69.7
Thailand	39487	22.6	135480	77.4	29888.2	16.8	147679.3	83.2
Vietnam	10017.8	16.2	51760.1	83.8	19476.8	24.5	60102.4	75.5
Total	242497.3	27.6	636755	72.4	215707	25.9	505929.7	74.1

Source: aseansec.org

In the table above, it can be seen that the highest intra ASEAN exporter is Singapore, with share to its total export is 42%. Malaysia, Thailand and Indonesia are in the second, third and fourth position. Other ASEAN countries such as Vietnam, Philippine, Myanmar, Brunei Darussalam, Lao PDR and Cambodia are relatively has low intra ASEAN export.

If the value of intra ASEAN export and extra ASEAN export were compared, most countries have higher extra ASEAN export value, except Lao PDR and Myanmar. It shows that these countries have relatively high dependency on their export activity to ASEAN countries as its main destination.

On the intra ASEAN import, the highest position is Singapore followed by Indonesia, Malaysia and Thailand, while, other countries such as Lao PDR, Brunei Darussalam and Cambodia are in the last position. Compared to extra ASEAN import, most countries have higher import value with extra ASEAN, except Brunei Darussalam and Lao PDR.

Generally, total ASEAN export with extra ASEAN countries is higher than intra ASEAN, its share is 72.4% compared to intra ASEAN that only has 26.4% share. The extra ASEAN import also has higher share compared to intra ASEAN import. This fact shows that at the total export and import activity, intra ASEAN export and import is still in the lower share. It also shows that most ASEAN countries are depending themselves much on other countries outside ASEAN.

4.2 Textile and Textile Products in ASEAN

Some of ASEAN countries, including Indonesia, Philippine and Thailand are among the top ten exporters of textile and textile products in world market. Textile and textile products also play an important role in Cambodia, the Lao PDR, Myanmar and Vietnam because it contributes large proportion to export earnings and domestic employment.

To know the position of ASEAN and each ASEAN country in global market, below is the table of ASEAN share in US market. US taken as a sample, with consideration that large amount of ASEAN textile and textile products is exported to US market.

Table 4.2
US General Import in Textile and Apparel, 2007-2008

No	Country	2006	2007	YTD_Apr/2007	RANK	% SHARE to World	% SHARE to ASEAN	YTD_Apr/2008	RANK	% SHARE to World	% SHARE to ASEAN	% CHANGE
	World	**93,278,703,277**	**96,409,131,163**	**29,431,722,856**		**100.00**		**28,660,598,645**		**100.00**		**-2.62**
	_ASEAN	**14,672,571,521**	**16,043,518,389**	**5,041,615,697**	**2**	**17.13**	**100.00**	**5,304,763,907**	**2**	**18.51**	**100.00**	**5.22**
1	Vietnam	3,396,087,943	4,557,943,802	1,244,065,045	5	4.23	24.68	1,573,222,090	4	5.49	29.66	26.46
2	Indonesia	3,901,508,780	4,206,135,369	1,443,775,127	4	4.91	28.64	1,449,501,092	5	5.06	27.32	0.40
3	Cambodia	2,150,791,435	2,435,449,880	781,011,700	9	2.65	15.49	805,249,358	8	2.81	15.18	3.10
4	Thailand	2,124,143,109	2,059,185,328	666,752,502	11	2.27	13.22	679,665,328	10	2.37	12.81	1.94
5	Philippines	2,085,129,431	1,793,949,495	600,974,161	13	2.04	11.92	513,738,523	14	1.79	9.68	-14.52
6	Malaysia	739,348,668	720,047,872	218,032,786	27	0.74	4.32	208,171,620	27	0.73	3.92	-4.52
7	Singapore	147,792,299	153,676,067	44,073,973	44	0.15	0.87	40,079,414	46	0.14	0.76	-9.06
8	Brunei	119,834,047	106,160,489	38,477,176	49	0.13	0.76	26,269,547	52	0.09	0.50	-31.73
9	Laos	7,935,809	10,970,087	4,453,227	90	0.02	0.09	8,866,935	69	0.03	0.17	99.11
	_C,H,K,T	33,123,089,462	37,135,872,028	10,308,265,176	1	35.02		9,960,231,292	1	34.75		-3.38
	_ASEAN	**14,672,571,521**	**16,043,518,389**	**5,041,615,697**	**2**	**17.13**		**5,304,763,907**	**2**	**18.51**		**5.22**
	_OECD	10,109,846,435	9,366,337,740	3,033,105,960	3	10.31		2,675,100,252	3	9.33		-11.80
	_CBI	8,992,726,223	8,456,824,149	2,658,586,553	4	9.03		2,552,603,112	4	8.91		-3.99
	_CAFTA	8,466,262,921	7,948,983,271	2,488,739,117	5	8.46		2,436,296,369	5	8.50		-2.11
	_EU15	4,158,892,417	4,339,079,632	1,325,505,216	7	4.50		1,275,495,363	6	4.45		-3.77
	_HK,K,T	6,055,467,186	4,813,877,695	1,373,740,130	6	4.67		1,261,713,852	7	4.40		-8.15
	_EU12	4,083,621,585	4,242,402,684	1,293,118,280	8	4.39		1,248,329,016	8	4.36		-3.46
	_ANDEAN (A	1,462,654,873	1,297,457,106	431,828,944	9	1.47		418,493,893	9	1.46		-3.09
	_SUB-SAHAR	1,315,454,692	1,316,250,897	417,719,250	10	1.42		342,539,656	10	1.20		-18.00

Source: OTEXA, quoted from aseansec.org

In the table above, ASEAN has 17.13% share in 2007 and increased to 18.51% share in 2008. In 2007, Indonesia positioned in the fourth rank of US import and Vietnam in the next position. But in 2008, Indonesia goes down to fifth position, while Vietnam goes up to fourth position. This condition might happen because although Indonesia has positive growth in 2008 but the growth is much lower than Vietnam's growth. Indonesia only grow 0.4%, while Vietnam grow at 26.46%

Compared to other trade bloc, ASEAN positioned in the second rank with 17.13%, the first rank is positioned by China, Hong Kong, Canada and Turkey with 35.02% shares in US market.

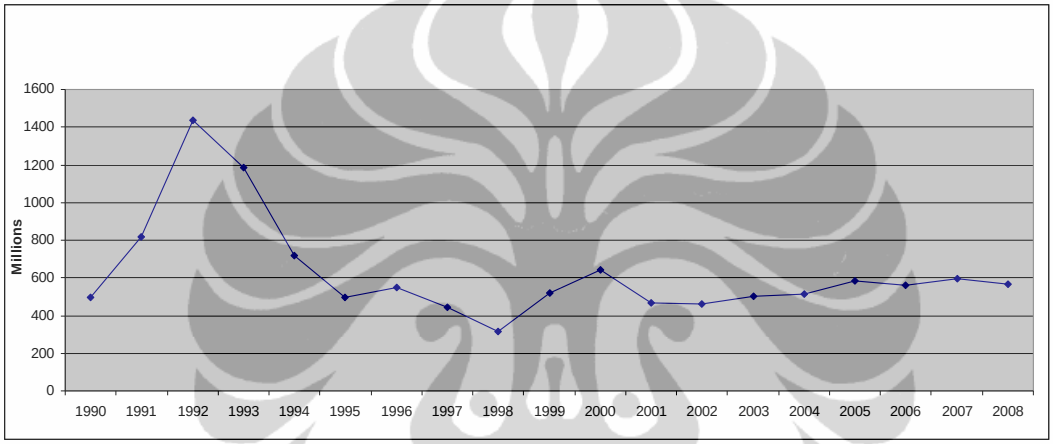
The performance of the ASEAN textile industries will depend on the readiness of the ASEAN industry to meet the demand. This can be seen in the United States market where until April 2008, although the value of U.S. imports fell 2.6% (yoy), but only the growth of ASEAN exports to the United States rose 5.22%, while all regions such as NAFTA, OECD, CBI China even decreased.

4.2.1 Indonesian Textile and Textile Products Export to ASEAN Countries

ASEAN is a big market since it has 576,6 Million population and total GDP that reached almost 1 Billion US$. But unfortunately, this condition is not

supported by the unbalanced per capita gross domestic products among its member. For instance, Singapore has high 150 times per capita gross domestic product compared to Myanmar. This condition causes problems in achieving higher intra trade among ASEAN countries and cooperating in the supply chain for the sake of ASEAN economic integration in the long run.

Indonesia as one of textile and textile products exporter considers ASEAN as potential market. Below is the movement of Indonesian textile and textile product export to ASEAN countries.

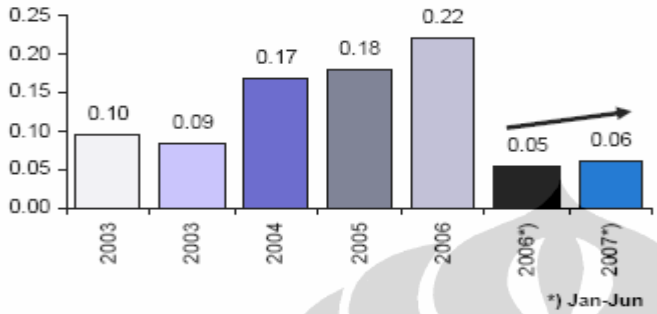


Source: BPS, 2009

Figure 4.1 Indonesian Textile and Textile Products Export to ASEAN, 1990-2008

The figure shows that in early 90s, Indonesian textile and textile products export to ASEAN 5 countries has reached the highest value. In 1990 until 1992, Indonesian textile and textile products export continue to increase and reached the highest value in 1992. But then, started from 1993, it began to go down until 1995. In 1996, it started to increased but then in 1997 it fell and reached the lowest level in 1998. It was the period of economic crisis that hit some ASEAN countries included Indonesia. Then in 1999, it began to increase until 2000, but then fell again in 2001 and started from 2002 until 2005 it increased. In 2006, Indonesian textile and textile products export to ASEAN is decreased compared to 2005, but then up again in 2007 and fell a bit in 2008.

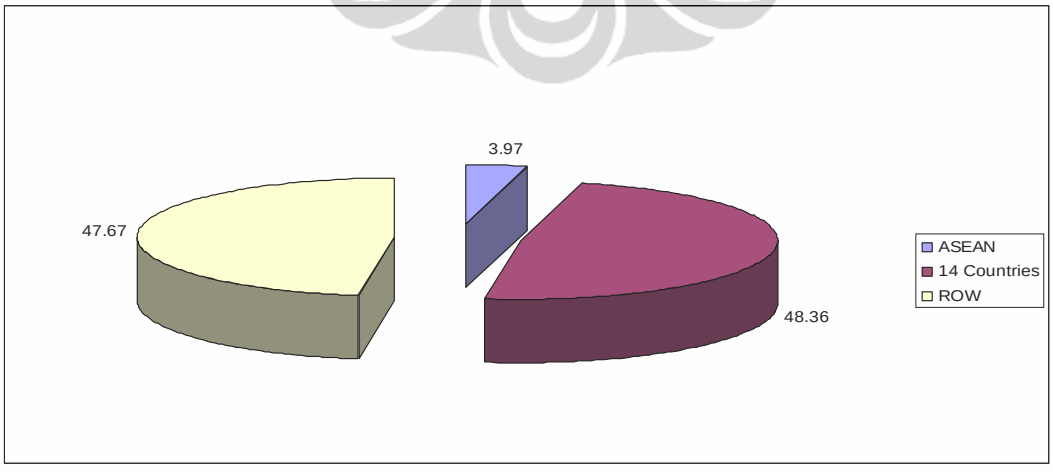
Beside experienced an increasing in Indonesian textile and textile products export to ASEAN, import of textile product from ASEAN also increased. In 2007, the value is increased although in relatively in small changes.



Source: API, 2007

Figure 4.2
Textile and Textile Products Import from ASEAN, 2003-2007
(Billion US$)

Since this thesis is focusing on three ASEAN member countries, Malaysia, Thailand and Philippine, below is the comparison of Indonesian textile and textile products export to ASEAN 3, other destination countries (14 countries) and rest of the world.



Source: BPS, 2009 (processed)

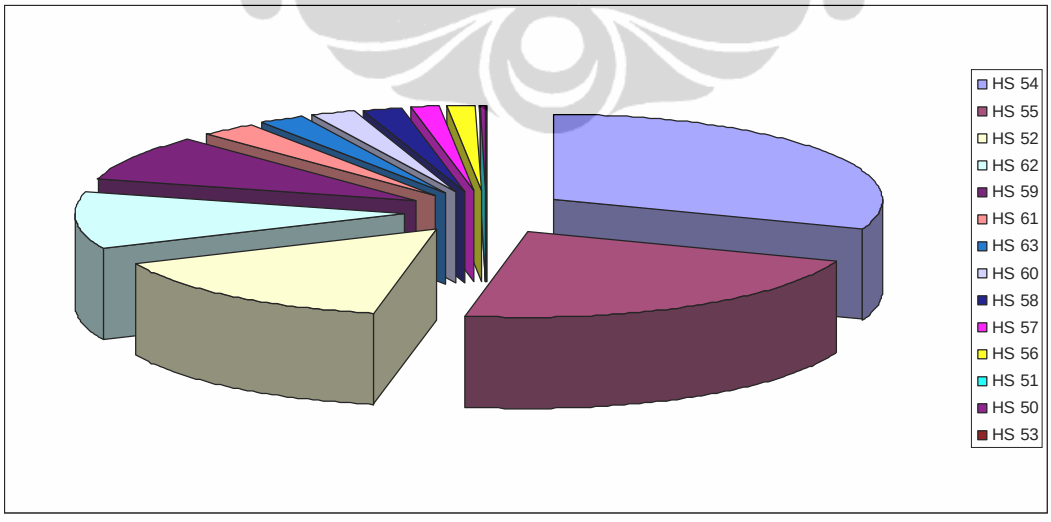
Figure 4.3 Share of Importers in Indonesian Textile and Textile Products, 1990-2008

The figure above shows that ASEAN (Malaysia, Thailand and Philipine) has only 4% compared to other fourteen object countries and rest of the world. Probably, if Singapore is included the share will be higher, but since this thesis is focusing only these three countries, so the share of Indonesian textile and textile products export to ASEAN 3 is the smallest share.

The figure also shows that other fourteen object countries has quite large share (48%). This value is as much as share of rest of the world share (minus ASEAN 3).

4.2.2 HS Proportion of Indonesian Textile and Textile Products Export to ASEAN Countries

ASEAN countries have different characteristics compared to other textile export main destination countries such as USA and EU. It is mentioned before that some ASEAN countries has competitiveness in garment industry, so that the possibility of high intra trade in garment industry is relatively low. To know about the HS proportion in Indonesian textile and textile products export to ASEAN market, the figure below will show the proportion.



Source: BPS, 2009 (processed)

Figure 4.4 HS Composition of Indonesian Textile and Textile Products Export to ASEAN Countries, 1990-2008

From the figure above, it can be seen that the biggest share of HS proportion in Indonesian textile and textile products export to ASEAN countries is HS 54 (32%), HS 55 (23%) and HS 52 (15%). These textile products are included to upstream industry which is more capital and technology intensive. This condition is different with Indonesian textile and textile products export to USA and EU which has garment products as the biggest share.

4.2.3 Intra ASEAN Export and Intra ASEAN Import on Textile and Textile products

One of the objectives of AFTA is to improve intra ASEAN trade through export and import performance of each ASEAN countries. Related to textile and textile products, below is the table of intra and extra export and import of HS 50-HS 63.

Table 4.3
Intra and Extra ASEAN Export and Import in Textile and Textile Products, 2008
(in US$ Million)

HS	Intra ASEAN			Extra ASEAN		
	Export	Import	Total	Export	Import	Total
50	28.2	7.8	36	45	104.4	149.4
51	11.9	15.8	27.7	108.4	244.6	353
52	446.4	362.6	809	1163	4249.4	5412.4
53	3.6	3.5	7.1	59.2	78.6	137.8
54	598	432.2	1030.2	2090.9	1606	3696.9
55	573.6	523.9	1097.5	2561.6	2456.8	5018.4
56	240.7	152	392.7	476.8	573.1	1049.9
57	58.3	35.9	94.2	231.2	138.9	370.1
58	114.4	85.2	199.6	261.1	713.1	974.2
59	162.9	88.8	251.7	331.2	958.9	1290.1
60	483.2	299.5	782.7	200.7	2566.3	2767
61	380.6	641.5	1022.1	13064.7	876.5	13941.2
62	429.1	248.3	677.4	10480.2	1175.5	11655.7
63	234.4	139.9	374.3	901.5	508.8	1410.3

Source: ASEAN stats, 2009

In the table above, the highest value of intra ASEAN export is HS 54, followed by HS 55 and HS 60. On the opposite, HS 53, HS 51 and HS 50 have the lowest value of intra ASEAN export. Meanwhile, in intra ASEAN import the highest value is 61, HS 55 and HS 54. The lowest import value is HS 53, HS 50 and HS 51. In general, it can be seen that HS 54 and HS 55 has high value of ASEAN intra trade. HS 54 and HS 55 are included to fiber and yarn products. On the contrary, HS 50 and HS 53 have the lowest value of ASEAN intra trade.

In extra ASEAN export, the highest value is HS 61, HS 62 and HS 55, while the lowest value is HS 50, HS 53 and HS 51. In extra ASEAN import, the highest value is HS 52, HS 60 and HS 55, while, the lowest value is HS 53, HS 50 and HS 57. In extra ASEAN export, HS 61 and HS 62 dominate the export activity, while this kind of product is not dominated in intra ASEAN both export and import. It is because these products are included to garment industry. Most ASEAN countries produces garment which has labor intensive approach, so that the value of intra trade in garment is relatively low.

4.3 ASEAN Free Trade Area (AFTA) and Textile and Textile Products

In the last 5 years, intra ASEAN cooperation become very important for Indonesia. It is because Indonesian export to ASEAN market grew by an average 5.5% per year. This growth is felt mainly by the textile industry, where industrial textile fabrics in Indonesia supply the needs of garment industry in Vietnam and Cambodia.

In ASEAN textiles and apparel sectors, governments and the private sector act in coordinately to reduce trade barriers and investment and to facilitate outward processing arrangements within the region. The improvement in ASEAN textile and apparels sector are such as, reduction of CEPT tariffs on textile and apparel and related inputs to zero, implementation of a customs green lane for imported textile and related products, and the easing of the investment approval processes are essential if the region is to capitalize on its competitive strengths. Moreover, ASEAN members must look at the whole Asian region as partners in trade and investment in seeking to ASEAN competitiveness at the global level. This implies that ASEAN plus agreements be extended to liberalization of trade

and investment in textiles and apparel on a priority basis. Inclusion of SAARC and the PRC in an ASEAN-based textile community (as well as Japan and Korea) would help the industry to strive under difficult conditions. (James, 2008:29)

In the framework of AFTA, there are particular schedule in order to reduce trade barriers in ASEAN market. The first issue is the reduction or elimination of tariff based on CEPT. The implementing body who coordinates this issue is committee on the implementation of the CEPT scheme for AFTA (CCCA). The timeline of tariff elimination fro ASEAN 6 is in January 2007, while for other members in January 2012.

Cooperation among the ASEAN countries has been initiated through the CEPT-AFTA. In this condition, ASEAN countries can cooperate in order to capture opportunities in textile market, both in regional and world market. ASEAN, through the ASEAN Federation for Textile Industry (AFTEX), has been actively coordinate and pull through cooperation. Regular meeting was held in order to discuss the conditions of industrial development and world textile trade, and establish measures to strengthen cooperation in the framework of ASEAN integration of textile industry in order to seize opportunities in order to win the global competition.

Beside the elimination of tariff, there will be also elimination of non tariff barriers. NTBs is much complex than tariff barriers, so that it needs three packages to completely eliminate NTBs.

The first package is in January 1st 2008 for ASEAN 5, except for Philippine in January 1st 2010 and other members January 1st 2013. The second package is in January 1st 2009 for ASEAN 5, except for Philippine in January 1st 2011 and other members will be in January 1st 2014. The third package will be in January 1st 2010 for ASEAN 5, January 1st 2012 for Philippine and January 1st 2015 for the other members.

Besides tariff and non tariff measures, there are also other measures which are going to be coordinated under AFTA. The other measures such as rules of origin, customs procedures, standards and conformance, logistics services, outsourcing and industrial complementation, ASEAN integration system of preferences, investment, intellectual property rights, movement of business person

skilled labor etc. Each issue has timeline and will be coordinated under the implementing body.

In textile and textile products sector, most ASEAN countries have been competitive producers of labor-intensive garments for the extra regional markets. This situation causes the low reliance of regional textile and textile products producers on tariff preferences on intraregional trade available under the Common Effective Preferential Tariff (CEPT) Agreement of the ASEAN Free Trade Area (AFTA). Other factors contributing to that low reliance include the relatively high transaction costs in obtaining tariff concessions and the low margin of tariff preferences between the AFTA/CEPT and the MFN rates (Wattanapruttipaisan, 2005:19).

As the result of this condition, intra ASEAN trade for textile and textile products has been very modest. In 2001, intra ASEAN export of textile and textile products were US$2.3 Billion in value or about 9.3% of global export of textile and textile products contributed by ASEAN. Furthermore, the intra trade not change significantly since the implementation of CEPT, for example in the value of intra ASEAN export of textile and textile products in 2001 was 0.4% of total merchandise export earnings, while in 2004 it only 0.6. It means that the changes is only a little.(Wattanapruttipaisan, 2005:19)

In its latest performance, the intra ASEAN textile still not as big as extra trade with outside ASEAN countries. The intra ASEAN textile trade was US$300 Million and the growth ranges between 19% and 27% from 2003 to 2007. Among ASEAN countries, Malaysia and Thailand are major players in intra ASEAN textile trade with the significant growth, while Indonesia starts left behind. (Setiaharja, 2009)

Since most of ASEAN countries have competitiveness in garment industry, there are high dependency of ASEAN producer on imported cotton, yarns, and fabrics. In 2003, for example, imports of cotton (HS52), manmade fibers and filament (HS 54 and 55), and knitted fabrics (HS 60) were worth US$1.2 billion. About three quarters of this amount were imported by four countries, Indonesia, Malaysia, Singapore, and Thailand. Cotton spinning (and other preparations of

yarns), including fabric weaving, knitting, and finishing (including dying) are highly capital intensive and technologically sophisticated.

In the context of AFTA, textile and textile products have been included in priority sector that already been eliminated in term of tariff barriers among ASEAN countries. In the long run, ASEAN is planned to be integrated in ASEAN economic community. So does the textile and textile products.

4.4 ASEAN Integration in Textile and Textile Products

As one of the commodities that have been a contributor for export in some ASEAN countries, ASEAN also has include textiles and apparel as one of its 12 priority sectors for purposes of establishing an ASEAN Economic Community by 2015. The objective of ASEAN economic community is the creation of a single market for trade in goods and services and also capital mobility.

Each ASEAN Member Country has strengths and weaknesses in each area of the textile and apparel supply chain. Some member countries have cost competitive for making up operations while others compete in yarn production and fabric dying and finishing. Still others specialize in logistics, design and marketing. Producer, who employs regional rather than only local labor, will be in a better position to defend and advance their market positions in the post-quota era. Government and producers strive to maintain their position in the world market especially after the elimination of quota. Considering at this condition, ASEAN must integrate its supply chain in this priority sector. Textile and textile products are included to priority sector for accelerated integration during ASEAN leader summit meeting in October 2003. The integration in textile and textile products in ASEAN as base production will strengthen ASEAN's competitive advantages.

Textile exports from ASEAN countries continue to grow despite the global economic slowdown in 2008. Between January and March, the United States' total imports of textile products fell by U,S.$2.62 billion (Rp 24.4 trillion), but the country's imports from ASEAN countries rose to $5.3 billion this year from $5.04 billion last year. (Jakarta Post, 2008)

Considering the potential of improving textile and textile products in ASEAN market, ASEAN has established The ASEAN federation of textile industries (AFTEX) in 1977. AFTEX is a grouping of textile and garment association of ASEAN countries. Since its establishment, AFTEX members has been done regular meeting in order to discuss policies and ASEAN projects that related to this industry. AFTEX has three main objectives; advocating a common position on international trade policies, promoting intra ASEAN trade, promoting ASEAN textile in international market. (SourceASEAN, 02.11.2009)

In the future, ASEAN textile producer commits to create a blueprint for a regional global production hub to compete with the biggest textile and textile products producer such as China and India. The blueprint is under the umbrella of AFTEX which is planned to be finished at the end of July 2008. (aseanaffairs.com, 23.07.2008)

It is an attractive option to have ASEAN network of integrated textile and textile products supply baseline in ASEAN region. However, the potential for greater supply networking in the region has to be considered against current constraints and issues in ASEAN complementarities in textile and textile products sector development and integration.

To be a competitive and major player in textile global market, ASEAN need to have deeper integration in supply chain of textile and textile products among ASEAN countries. The process is started by scheduling faster removal of tariff and non tariff barriers on priority sector goods and services, by 2007 in ASEAN-6 and 2012 in ASEAN-4. The Other stimuli to accelerated integration include simplified customs (clearance) procedures and harmonized standards and technical regulations. (Wattanapruttipaisan, 2005:19)

The process of integration in ASEAN is a long way to go but planned to be achieved in 2020 as ASEAN economic community established. It will need intensive preparation starts from the availability of a skilled and technologically experienced workforce, of affordable and adequate power and water supplies, of an efficient and interlinked transport and communications infrastructure, and of speedy and inexpensive trans border clearance within ASEAN. Besides that there are also issue related with relocation of production which is going to be very

complex. When supply chain is integrated, it will give efficiency, such as short turnover periods and speedy time to market, whether for intermediate or final products, are a major determinant of competitiveness in the textile and textile products sector, among others.

In order to achieve the integration of textile and apparels sector, ASEAN has made roadmap for this integration. The objectives of this initiative are: (aseansec.org)

1. Strengthen regional integration on through liberalization and facilitation measures in the area of trade in goods, services and investments; and
2. Promote private sector participation.

In achieving regional integration, the proposed measures include specific measures that are of direct relevance to the textiles and apparel sector, as well as common measures that cut across all priority integration sectors. The integration approaches are focused on: (aseansec.org)

1. Combining the economic strengths of ASEAN member countries for regional advantage;
2. Facilitate and promote intra-ASEAN trade and investments;
3. Improve the condition to attract and retain manufacturing and other economic activities within the region;
4. Promote outsourcing program within ASEAN; and
5. Promote the development of "Made in ASEAN" products and services.

In the context of textile and apparels integration, there are some issues related with intra ASEAN textile trade that need to be addressed: (Setiaharja, 2009)

1. Reducing lead times

In today lead times, it has more competitive benchmark for shipping and order for about 45-60 days. The shortest lead times is approaching 28 to 35 days. But since most ASEAN manufacturers ship from China or other location ASEAN country, this short time is posing challenges to manufacturers located in ASEAN.

2. Improving manufacturing capabilities

It is important to improve product capability for textile and apparels manufacturers especially in ASEAN because the rapid growth of ASEAN market

which create higher quality and faster demand. Most retailers offer new products in a shorter time, leading to the need of faster production of smaller orders.

To fulfill the market, ASEAN manufacturers should enhance its capability in garment and finishing also garment preproduction to ensure that the products can meet market requirements.

3. Reducing cost

In a production, besides producing quality goods it is important to keep low cost. In order to reduce cost, ASEAN tries to build vertical integration in supply of textile and textile products for ASEAN market.

CHAPTER V
RESEARCH METHODOLOGY

5.1 Model Specification

T**he trade model employed in th**is thesis **is a combination of the** standard gravity model and **export demand model.** Gravity model is chosen as the model of this thesis with consideration that this thesis will try to analyze the effect of size of country (mass) which explained by GDP & population and also distance as the resistance factor to Indonesian textile and textile products export. The gravity model is also can be used to estimate the impact of policy such as regional trading group.

The standard gravity model has GDP of exporter and importer country, population or per capita GDP of exporter and importer country and distance as independent variables. In the extension model, price factor (relative price) and some dummy variable can be included to capture more factors that influence trade.

The dependent of this model is different with standard gravity model which use trade flow as dependent variable. This thesis will use export of Indonesia to destination country as dependent variables. The usage of export as dependent variable might be called the generalized gravity model. The generaliz**ed gravity model differs from the standard gravity model in two important respects. First, the dependent variable is not bilateral trade (the product of the exports of two trading countries) but exports from one country to another. Secondly, because the dependent variable is exports, not bilateral trade, a variable representing relative competitiveness between the two countries can be included as an explanatory variable**, showed by relative price or relative exchange rate**.** The use of the generalized gravity model helps to overcome potential misspecification problems which may arise as a result of applying a pure basic gravity model to analyze the trade patterns of emerging economies.

The variables in the model are inspired from various model sourced from previous research. One of the previous models is explained by Gunawardhana (2005). He made a study about export from Australia to a number of East Asia countries during the Asia economic crisis. The study used pooled data in the estimation of export model. In Gunawardhana's model, GDP and per capita GDP of country j act as independent variables without using GDP and per capita GDP

of home country. It means that he used demand approach because GDP of country j reflects economic size of importing country (j) and per capita GDP of country j reflects income level of importing country. Both variables expected to have positive relation with export performance. So, when there are increasing in GDP of country j it will also increase the export of country i to country j and also an increasing in per capita GDP of country j will increase export of country i to country j.

The variable to capture the size market is population. In some study such as done by Hilbun, population is used as the proxy to measure country size effect to trade.

Other research explains about the extended of gravity model is done by Chit, Rizov & Willenbockel (2006). In the model, they modified the basic gravity model by included price factor as independent variables.

After analyzing determinants factor of Indonesian export, the effect of AFTA to Indonesian export will be analyzed. The previous research that has gravity model in its analysis is presented by Hapsari and Mangunsong, (2006), Cadarajat & Yanfitri (2008) and other study which try to analyze the impact of trade agreement as government policy to trade or export activities of a country

Based on previous research that has been explained in second chapter, this thesis will try to modify the models above. There will be some variables that are fitted to be used in this research and some others that is not fit and has to be omitted. This research has export of Indonesia to country j as the dependent variables. The dependent variables will be supported by some independent variables which act as explanatory variables. In this thesis, the independent variables are; GDP of country j, population of country j, distance of country i to j, real exchange rate, AFTA and crisis dummy in 1997-1998. These variables are chosen with consideration that this thesis will try to generalize the gravity model instead of using pure standard gravity model.

In this thesis, real exchange rate chosen as the proxy for relative price. Based on research by Chit, Rizov & Willenbockel (2006), real exchange rate was used instead of relative price because of difficulties in finding data to support measurement of relative price. With this consideration, this thesis will try to minimize difficulties by directly chosen real exchange rate to represents price variable.

In gravity model, distance acts as resistance factor that can reduce trade. Although from some researches it has been proved that based on econometric approach distance has insignificant role expected to have negative influence, but the existence of distance still needed to reflects geography barriers in trade based on gravity model. Another variables related to geography which will support the distance variable is remoteness. But in this thesis, remoteness is omitted because it tendency of causing multicollinearity. In multicollinearity test, when remoteness plug into the model the coefficient is higher than 0.8, it means that there is multicollinearity problems. Considering to problems that might be caused by multicollinearity, then remoteness is omitted from the model.

This thesis also not use tariff as independent variable because this thesis focus at the commodity, textile and textile products in whole value. This thesis has two dummy variables, AFTA dummy and economic crisis dummy. Some dummy variables applied in previous model as identified by Hapsari and Mangunsong (2006) will be omitted such as, common language, borders, island and similarity index, trade creation and trade diversion. Dummy variables, namely common language represents information cost, border and island represent transportation cost. In this research, transportation cost is represented by distance. Meanwhile, the reason why trade creation and trade diversion dummy are not included is because this thesis focused more on export activities of Indonesia to its partner country, especially ASEAN countries.

In this chapter, all questions that arise in problem identification will try to be answered. And the objectives of the study will be reached by implementing certain methods. First, gravity model will be used to estimate determinant factors of Indonesian export activities. Second, the effect of RTA will be analyzed by explaining export pattern pre and post creation of AFTA and export pattern between Indonesia and main destination export countries (outside ASEAN) in textile and textile products.

In detail, below is the model equation in this research:

$$logX_{ijt} = b_0 + b_1 logGDP_{jt} + b_2 logPOP_{jt} + b_3 logDIST_{ijt} + b_4 RER_{ijt} + D_1 AFTA + D_2 Cri + \varepsilon_{ijt}$$

Where :

X_{ijt} : Export of Indonesia to country j in time t (US$)

GDP_{jt} : Nominal GDP of country j in time t (Billion US$)

POP_{jt} : Population of country j in time t (Billion Person)

$DIST_{ij}$: Distance from country i to country j

RER_{ij} : Real exchange rate of country i to j in time t

AFTA : Dummy for country j in AFTA

Cri : Dummy for economic crisis (1997-1998)

ε_t : Error term

To analyze the data, panel data analysis will be used to estimate the model using E views program. In the estimation, the expected sign of the variables are based on the consideration of each variable. The expected sign of coefficient in the model estimation are:

1. GDP of country j

GDP of country j represents the demand side. GDP of the importer country reflects potential demand for imports. GDP_j is expected to be positive.

2. Population of country j

Population of country j acts as proxy of the consumer market of country j. It is assumed that the bigger the consumer market in country j will tend to higher demand from country j to imported goods. Population is expected to be positive.

3. Distance

In gravity model, distance is a resistance factor and has a negative impact on volume of trade. As the distance between the exporting and importing countries becomes larger, exports will fall. The distance is a factor, which is used as a proxy to shows the impact of transport costs and other transaction costs to trade.

4. Real Exchange Rate

Real exchange rate can be a proxy of relative price which shows competitiveness of product from country i in importing country (j). (Chit, Rizov, Willenbockel, 2006:11)

Real exchange rate is expected to be positive in term of RP/US$, as the depreciation of Rupiah will lead to an increase in value of export.

5. AFTA Dummy

AFTA is the RTA membership dummy. AFTA dummy indicates whether the partner country is a member of AFTA or not. The value is one if partner country is joining AFTA and zero if otherwise.

6. Crisis Dummy

Dummy crisis explained economic crisis that happened in Indonesia and some Asian countries in 1997- 1998. Crisis dummy expected to be negative as the crisis will influence demand of countries that had economic crisis. The value is one if the year is in 1997-1998 and zero if otherwise.

5.2 Data Source

This study uses pooled data in the estimation of the Indonesian export model. Annual data is taken for the period of 1990 to 2008, T=19 are used for Indonesian textile and textile products export to ASEAN six countries minus Singapore and Brunei Darussalam (Malaysia, Thailand, Philippine) and also 14 main destination for textile products, N=14. So, the observation will be 323 observations for each variable in the model.

The data for this study are taken from various sources, such as BPS, IMF, otexa and eia website. In this study, one of the objectives is to analyze determinant factors of Indonesian textile and textile product export to ASEAN countries and 14 main export destinations. The data needed for this study are GDP, population, distance, and real exchange rate. In detail, below is the explanation of the data measurement and data source:

1. Gross Domestic Product

   Gross domestic product used in this study is in term of current price called nominal gross domestic product. The data of nominal GDP in US$ is available in IMF.

2. Population

   Population data is available in world economic outlook in IMF sites. The data is available for all countries.

3. Distance

   Distance used in the study is the distance between capital city in country i and j measured in kilo meters. (km) multiplied with price of fuel (nominal cents per gallon). The data is taken from www.indo.com/distance, while, the data of fuel price is taken from www.eia.doe.gov.

4. Real Exchange Rate

   Real exchange rate is measured by the end-of-period nominal bilateral exchange rate, adjusted by the relative price level. The relative price level used is consumer price index in respective countries or country j. The data of NER and CPI is taken from IFS, then real exchange rate will be calculated manually using those data.

5.3 Estimation Method

Wooldridge (2002) defines panel data as a set of data formed by repeated observation of the same cross-sectional units over time. Panel data allow better analysis of dynamic adjustments. The use of panel data has provided many benefits in the statistical and economic theory. Nazrul Islam (1995) and Poirson helene (2000) states that research in the use of panel data can reveal this' country effect 'mistakes and avoid omission variable (omitted variable bias) rather than if we use latitude data slice (cross section). In addition, the uses of panel data enable us to capture the characteristics between individuals and time that could be different.(Syahrial, 2008:1-2)

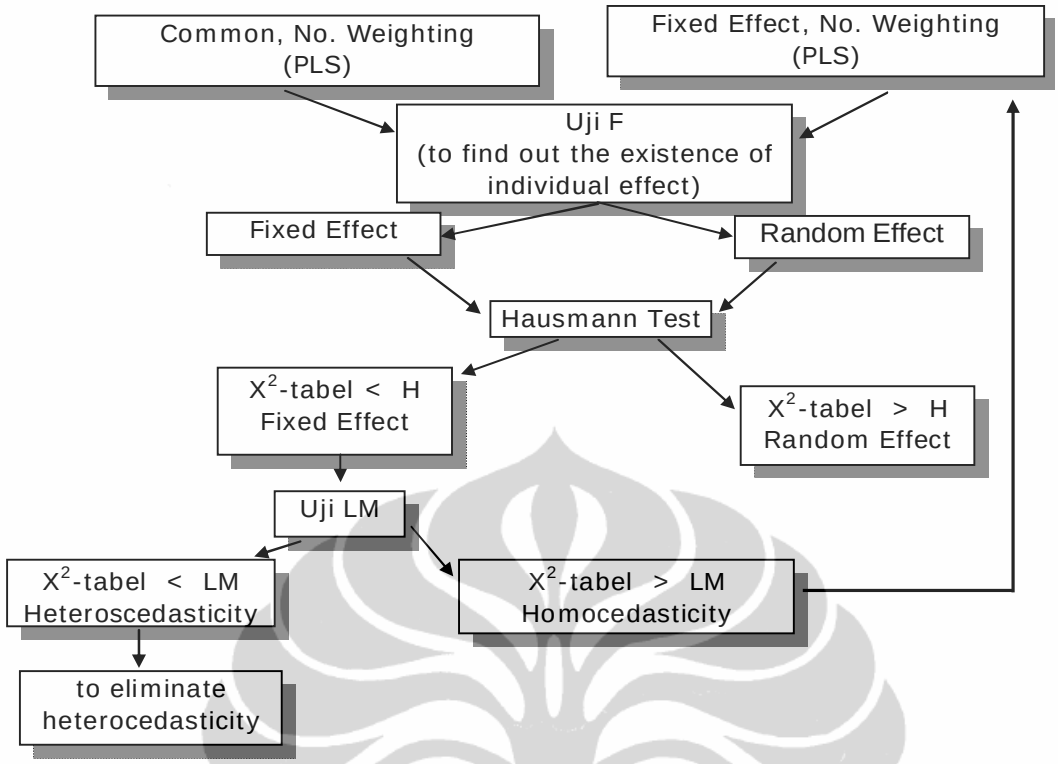
In estimation using panel data, first of all it has to be analyzed whether this model has an individual effect or not. If it does not have individual effect it means that the chosen model is pooled least square. On the contrary if there is individual effect, fixed effect model or random effect model has to be chosen.

The next step is Haussman test, this test is implemented to know what model should be chosen for this model. If the value of X^2 table is higher than chi square statistics it means that random effect model has to be chosen and when X^2 table is smaller than chi square statistics it means that fixed effect model is chosen.

In random effect model, it is assumed that individual error component is not correlated each other and there is no autocorrelation either cross section nor time series (Pindyck and Rubenfield 1998). Cross section and time series is assumed to be normally distributed with unloosen degree of freedom. Random effect can be estimated by generalized leas square which will result the best linier unbiased estimation (BLUE) in the parameter. So that there will be no violation in classical assumption such as autocorrelation, multicollinearity and heteroscedasticity.

On the contrary, fixed effect model is not free from the violation of classical assumption. So that, when fixed effect model is chosen as the best model, it has to be continued by doing langrange multiplier test to know whether there is heteroscdeasticity or homoscedasticity structure. In langrange multiplier test, when X^2 table is smaller than LM statistics it means that there is heteroscedasticity and otherwise.

Meanwhile, to test multicollinearity, it can be done by checking coefficient correlation matrix and find out whether there is coefficient that has value more than 0.8. If there is coefficient correlation matrix value more than 0.8 it means that there is multicollinearity and otherwise. The value of 0.8 shows the strong relation of multicollinearity. In fixed effect model, it is not needed to test the existence of autocorrelation problem because this violation is mostly happen in time series data.



Source: Jeffrey M Wooldridge in Econometric Analysis of Cross Section and Panel Data

Figure 5 Flow Chart of Panel Data Estimation Model

CHAPTER VI
RESULT AND ANALYSIS

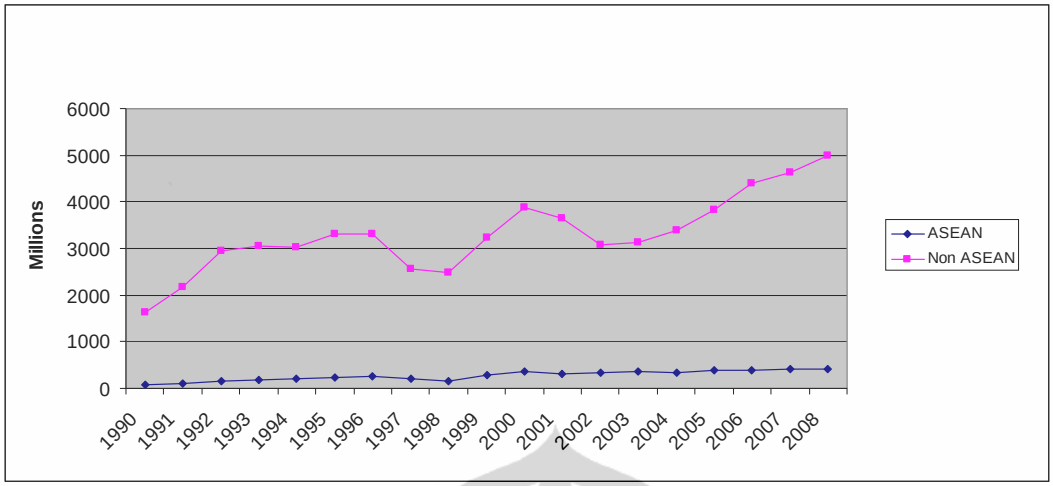
In the first chapter, it is mentioned that this research has three objectives which will be answered by implementing econometric and descriptive analysis. First part of this chapter will discuss about analysis of Indonesian textile and textile products export to ASEAN and non ASEAN countries.

6.1 Analysis Of Indonesian Textile And Textile Products Export To ASEAN And Outside ASEAN Countries

The second objective of this research is to analyze whether there is influence of the creation of AFTA as the free trade agreement in ASEAN to Indonesian textile and textile products export to partner country. From the econometric methods, the result is AFTA has positive relation and influence significantly to Indonesian textile and textile products export.

From the export data, Indonesian textile and textile products export to ASEAN countries pre and post creation of AFTA and the comparison of export to ASEAN countries and outside ASEAN can be analyzed to support the result of econometric method.

Below is the figure of the movement of Indonesian textile and textile products export to ASEAN countries and outside ASEAN. From this figure, it can be analyzed the movement of Indonesian export to certain destination and find the movement in certain period, in this case pre and post creation of AFTA. It is also can be found the movement in economic crisis period that hit Indonesia and some ASEAN countries in 1997-1998.



Source: BPS, 2009

Figure 6.1 Indonesian Textile and Textile Products Export to ASEAN and Non ASEAN Countries, 1990-2008

First, it is needed to analyze the movement of Indonesian textile and textile products to ASEAN countries (Thailand, Malaysia and Philipine). In the figure, it can be seen that from 1990 until 1996, the export has increased significantly. But, in 1997 when the economic crisis started hit some ASEAN countries included Indonesia, the export value also started to decline and it keep decreasing until 1998 reached the lowest level. Then, it start to increase in 1999 and 2000, fell a bit in 2001. From 2002 until 2006, the movement is up and down, but then increased again in 2007 and 2008.

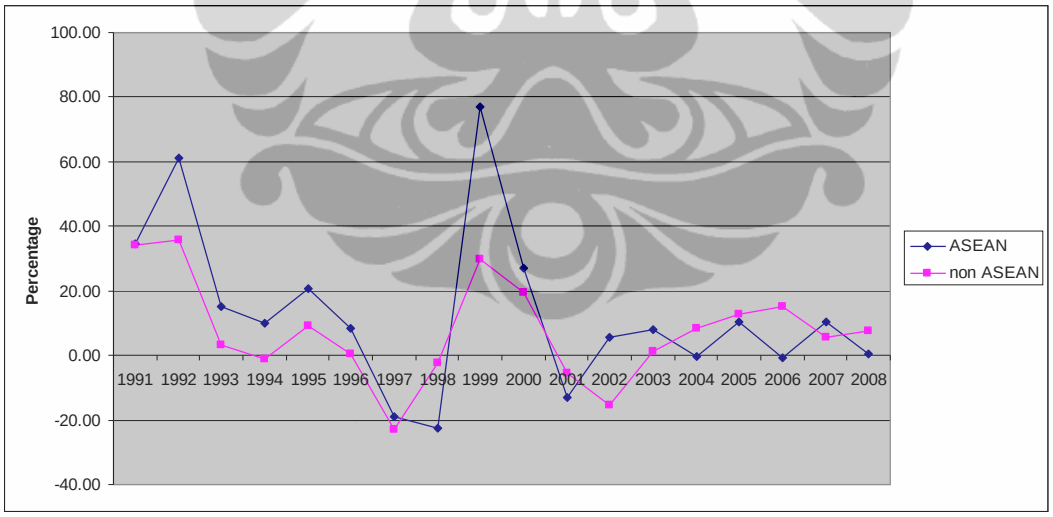
From the figure, it can be seen that in 1990 until 1996, the export increased to ASEAN countries. The creation of AFTA was in 1992 and started to be implemented in 1993. So, in its pre and early creation of AFTA the Indonesian textile and textile products export shows an increasing movement. Since the elimination of barriers in AFTA is based on CEPT scheme has certain schedule of tariff reducing for each product category. So, the effect of barriers elimination in AFTA is not completely can be seen in the export value right after AFTA implementation in 1993. The process will continue until the full elimination of barriers among ASEAN countries.

Next, it is important to analyze the export of Indonesian textile and textile products to other countries outside ASEAN. The export movement to destination

country outside ASEAN also shows increasing movement. From 1990 until 1996, there was positive movement. But the same as export to ASEAN countries, when economic crisis hit in 1997 and 1998, export decreased and started to climb again in 1999. From 1999-2003, the movement was up and down. Then, in 2004 -2008 the movement kept increasing and reached the highest level in 2008.

After analyzing each movement of Indonesian textile and textile products export to ASEAN countries and outside ASEAN region. From the figure above, it can be seen that comparison of the movement of Indonesian textile and textile products export to non ASEAN countries and ASEAN countries, shows that the Indonesian textile and textile products export to ASEAN countries has lower movement. It is because the proportion of Indonesian textile and textile products export to non ASEAN countries is much bigger than to ASEAN countries.

To have deeper analysis about the Indonesian textile and textile products export to ASEAN and non ASEAN countries, it can also be seen from the export growth as the figure below shows.



Source: BPS, 2009

Figure 6.2 Growth of Indonesian Textile and Textile products Export to ASEAN and Non ASEAN Countries, 1990-2008

From the growth of Indonesian textile and textile products export to ASEAN countries, it can be seen that in 1991 and 1992, the growth was 34% and 61%, but then in 1993 the growth decreased to 14% and moved down to 10% in 1994. In

1995, the growth increased to 20%. Started from 1996 to 1998, the growth decreased and even reached the minus growth in 1998. Then, in 1999 it started to climb up reached 77% growth. In 2001, 2004 and 2006 Indonesian textile and textile products export to ASEAN experienced minus growth. But then in 2007 and 2008, it has positive growth although it is not as high as in the early 1990s.

Meanwhile, the growth of Indonesian textile and textile products to non ASEAN countries also has almost similar pattern of growth, but there is also differences. In 1991, the growth also 34.2% almost the same as growth to ASEAN countries, and then, in 1992 growth reached 36%. In 1993 and 1994, it decreased until down to -1.1%. Then, in 1995 it up but then fell again in 1996-1998, reached -22.9% growth in 1997. In 1999, it had positive growth 29.8% but in 2001 and 2002, it experienced negative growth. But then in 2003 until 2008 it has positive growth 5.5% in 2007 and 7.5% in 2008.

The Indonesian textile and textile products export growth to ASEAN and non ASEAN countries are relatively has almost similar pattern, in 1993 and 1994 when growth to both destinations have experienced negative growth, it might happened because lessen Indonesian competitiveness and slowdown investment in this sector. This condition also might be influenced by the uncertainty related to the result of Uruguay round negotiation which eliminated quota system in textile sector. In 1995, growths are increased although in 1996 the growth was not as high as in 1995. This positive growth might be related to result of the first stage of liberalization under agreement on textile and textile products that caused an improvement in market access. (James, Ray & Minor 2002:7). In 1997 and 1998, when economic crisis hit, growth also decreased to minus level. In 1999 and 2000, the growth recovered, but then in 2001 it fell again. This might happened due to world economy slowdown. Generally the slowdown of growth in period after 1990s might happen because of several causes: (James, Ray & Minor 2002:9)

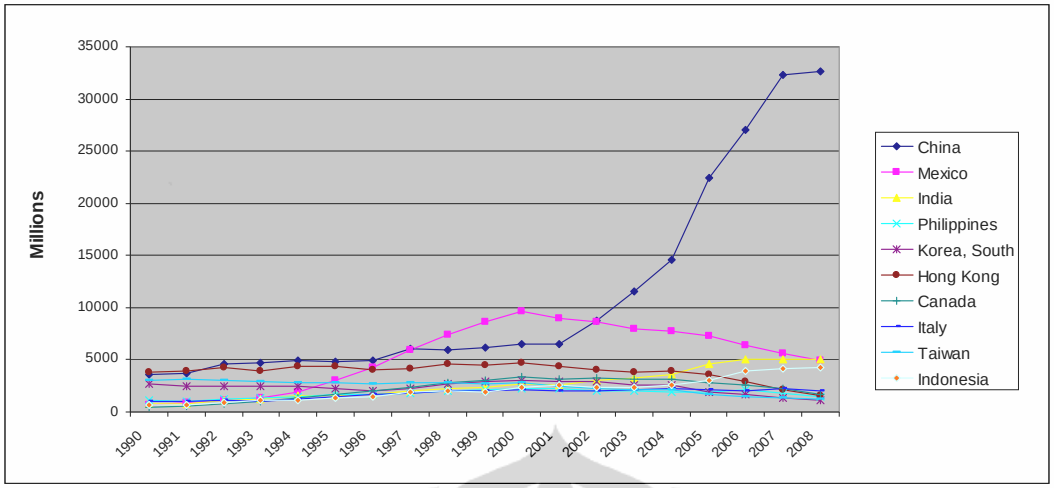
1. Private investment in these sectors began to slow down in 1992 and 1993 evidenced by reduced imports of textile machinery and its increasing vintage
2. The creation of the North American Free Trade Agreement (NAFTA) led to strong trade diversion in textiles and apparel away from East Asia and towards NAFTA members;

3. The promised liberalization under the Uruguay Round Agreement in the WTO was slow to materialize.

Although, the comparison between export pattern of Indonesian textile and textile products export has almost similar pattern according to the export movement and growth of Indonesian export to ASEAN and non ASEAN countries. But actually, there should be difference which is influenced by the elimination of quota system in textile and textile products export. Before 1995, Indonesian textile and textile products export to developed countries (non ASEAN) are limited based on quota system. So, Indonesian textile and textile products export from 1990-1995 is completely influenced by quota. On the contrary, Indonesian export to ASEAN countries is not influenced by quota system. So, the changing in Indonesian textile and textile products export to ASEAN countries will be influenced much by intra trade condition between Indonesian and ASEAN countries. The important thing is the creation of AFTA will influence the movement and growth of Indonesian textile and textile products export to ASEAN countries.

To analyze the export pattern of Indonesia to non ASEAN countries, a country as a sample will be taken to represent the biggest market in textile and textile products, in this case US market has dominate the Indonesian textile and textile products export.

Below is the export movement of Indonesia and other importer country in US market.

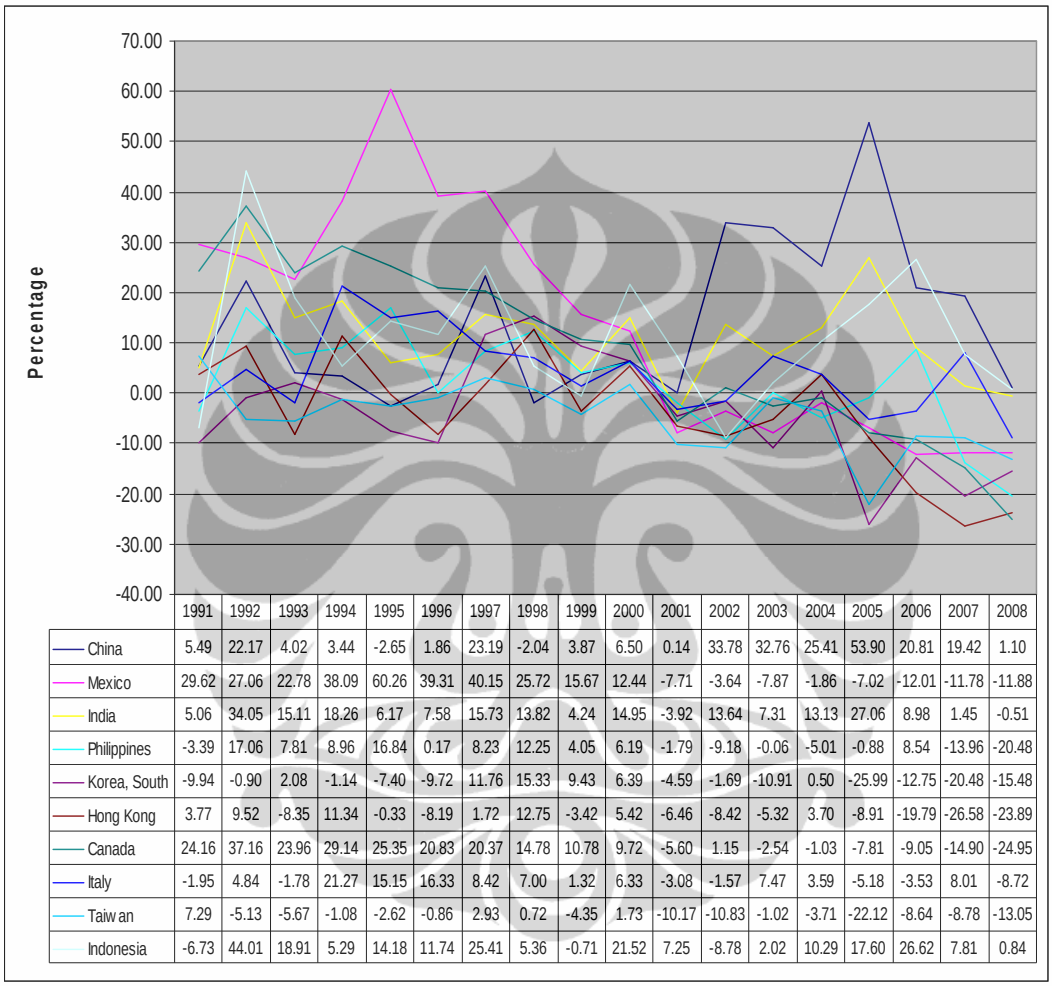


Source: otexa.ita.doc.gov (14.11.2009)

Figure 6.3 Ten Importers of Textile and Textile products in US Market, 1990-2008

In the figure above, it can be seen that the export value movement of ten importer countries in US market. From ten countries, China has the highest increasing movement especially started from 2002 until 2007. Actually in early 1990 and 1991, Hong Kong has higher export value compared to other countries, but then started from 1992 China has succeeded in taking the first rank as the highest importer in USA market. Meanwhile, Mexico also has increasing movement especially in 1995 after the creation of NAFTA. But then, Mexico's export started to decrease in 2007 and 2008. Meanwhile, Hong Kong's growth was not as high as China and it even started to decrease from 2003 until 2008. The other country, such as India has increasing movement from 1990 until 2007 but it decrease in 2001 and 2008. Meanwhile, Canada as the other NAFTA members beside Mexico also has increasing export movement, but then in 2001, 2003 and 2005 until 2008 Canada experienced decreasing value of export to US market. South Korea has decreasing movement since 1990 until 2008, it only has increasing export value in 2000. Another ASEAN members in ten major suppliers in US market is Philippine. Philippine experienced up and down movement, in 1991, 2001-2008 it has decreasing movement and the rest is increasing movement. Taiwan only has increasing movement in 1990, but the other period until 2008, it experienced decreasing movement. Italy has decreasing movement in 1991, 1993,

2001, 2002, 2005-2006 and 2008. The last, Indonesia has decreasing movement in 1991, 1999 and 2002 and the rest year it experienced increasing movement. To see clearly about the export movement of these 10 countries, below is the figure and table of each country's export growth.

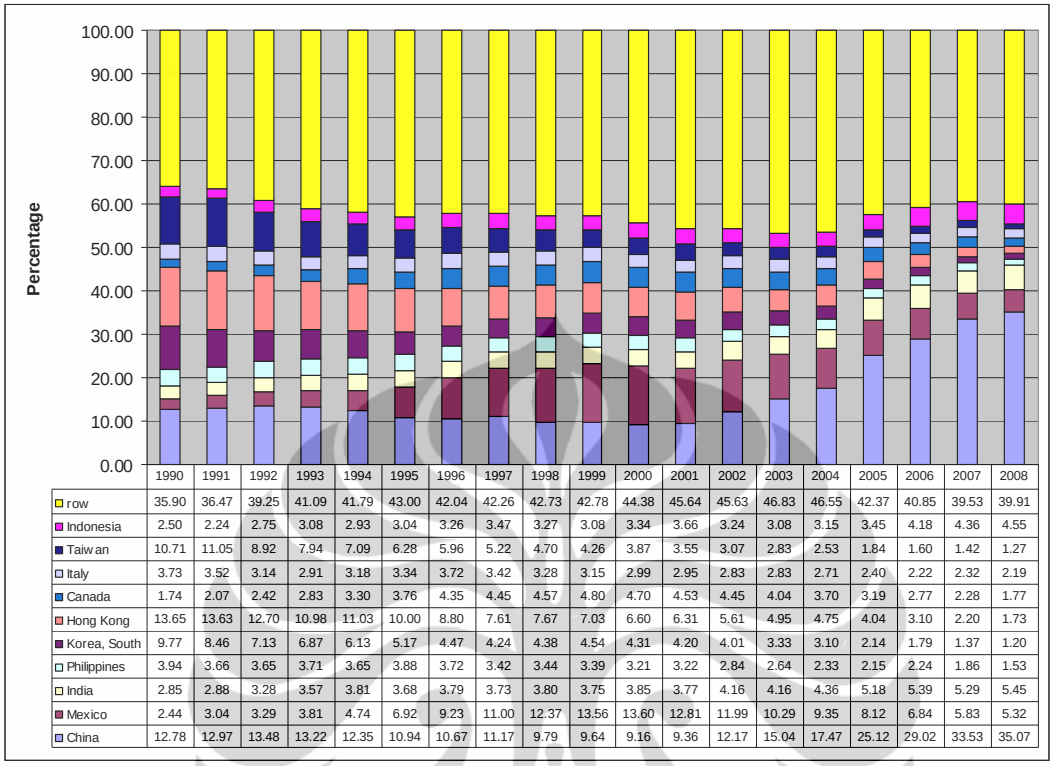


	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
China	5.49	22.17	4.02	3.44	-2.65	1.86	23.19	-2.04	3.87	6.50	0.14	33.78	32.76	25.41	53.90	20.81	19.42	1.10
Mexico	29.62	27.06	22.78	38.09	60.26	39.31	40.15	25.72	15.67	12.44	-7.71	-3.64	-7.87	-1.86	-7.02	-12.01	-11.78	-11.88
India	5.06	34.05	15.11	18.26	6.17	7.58	15.73	13.82	4.24	14.95	-3.92	13.64	7.31	13.13	27.06	8.98	1.45	-0.51
Philippines	-3.39	17.06	7.81	8.96	16.84	0.17	8.23	12.25	4.05	6.19	-1.79	-9.18	-0.06	-5.01	-0.88	8.54	-13.96	-20.48
Korea, South	-9.94	-0.90	2.08	-1.14	-7.40	-9.72	11.76	15.33	9.43	6.39	-4.59	-1.69	-10.91	0.50	-25.99	-12.75	-20.48	-15.48
Hong Kong	3.77	9.52	-8.35	11.34	-0.33	-8.19	1.72	12.75	-3.42	5.42	-6.46	-8.42	-5.32	3.70	-8.91	-19.79	-26.58	-23.89
Canada	24.16	37.16	23.96	29.14	25.35	20.83	20.37	14.78	10.78	9.72	-5.60	1.15	-2.54	-1.03	-7.81	-9.05	-14.90	-24.95
Italy	-1.95	4.84	-1.78	21.27	15.15	16.33	8.42	7.00	1.32	6.33	-3.08	-1.57	7.47	3.59	-5.18	-3.53	8.01	-8.72
Taiwan	7.29	-5.13	-5.67	-1.08	-2.62	-0.86	2.93	0.72	-4.35	1.73	-10.17	-10.83	-1.02	-3.71	-22.12	-8.64	-8.78	-13.05
Indonesia	-6.73	44.01	18.91	5.29	14.18	11.74	25.41	5.36	-0.71	21.52	7.25	-8.78	2.02	10.29	17.60	26.62	7.81	0.84

Source: otexa.ita.doc.gov (14.11.2009)

Figure 6.4 Growth of Importers in US Market, 1990-2008

Besides export movement and growth, it is also important to analyze each country's export proportion in US market. By having this analysis, it can be seen each country's position in period of 1990-2008 and also each country's changes in position compared to other competitors. In detail, Indonesia's position in the period of 1990-2008 in US market can be analyzed whether it has improvement or otherwise.



	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
row	35.90	36.47	39.25	41.09	41.79	43.00	42.04	42.26	42.73	42.78	44.38	45.64	45.63	46.83	46.55	42.37	40.85	39.53	39.91
Indonesia	2.50	2.24	2.75	3.08	2.93	3.04	3.26	3.47	3.27	3.08	3.34	3.66	3.24	3.08	3.15	3.45	4.18	4.36	4.55
Taiwan	10.71	11.05	8.92	7.94	7.09	6.28	5.96	5.22	4.70	4.26	3.87	3.55	3.07	2.83	2.53	1.84	1.60	1.42	1.27
Italy	3.73	3.52	3.14	2.91	3.18	3.34	3.72	3.42	3.28	3.15	2.99	2.95	2.83	2.83	2.71	2.40	2.22	2.32	2.19
Canada	1.74	2.07	2.42	2.83	3.30	3.76	4.35	4.45	4.57	4.80	4.70	4.53	4.45	4.04	3.70	3.19	2.77	2.28	1.77
Hong Kong	13.65	13.63	12.70	10.98	11.03	10.00	8.80	7.61	7.67	7.03	6.60	6.31	5.61	4.95	4.75	4.04	3.10	2.20	1.73
Korea, South	9.77	8.46	7.13	6.87	6.13	5.17	4.47	4.24	4.38	4.54	4.31	4.20	4.01	3.33	3.10	2.14	1.79	1.37	1.20
Philippines	3.94	3.66	3.65	3.71	3.65	3.88	3.72	3.42	3.44	3.39	3.21	3.22	2.84	2.64	2.33	2.15	2.24	1.86	1.53
India	2.85	2.88	3.28	3.57	3.81	3.68	3.79	3.73	3.80	3.75	3.85	3.77	4.16	4.16	4.36	5.18	5.39	5.29	5.45
Mexico	2.44	3.04	3.29	3.81	4.74	6.92	9.23	11.00	12.37	13.56	13.60	12.81	11.99	10.29	9.35	8.12	6.84	5.83	5.32
China	12.78	12.97	13.48	13.22	12.35	10.94	10.67	11.17	9.79	9.64	9.16	9.36	12.17	15.04	17.47	25.12	29.02	33.53	35.07

Source: otexa.ita.doc.gov (14.11.2009)

Figure 6.5 Share of Importer Countries in US Market, 1990-2008

In the figure above, in 1990-1991 Hong Kong positioned in the first rank followed by China, Taiwan, South Korea, Philippine and Italy. In 1990, the last ranks were Mexico, India, Indonesia and Canada. In 1991, the position has a bit changes, India and Indonesia up to seventh and eight rank, while Mexico down to ninth position and Canada stay in the last position.

In 1992-1997, China positioned in the first rank followed by Hong Kong, Taiwan and South Korea. In 1992, the fifth to last ranks were positioned by Philippine, Mexico, India, Italy, Indonesia and Canada. In 1993, Mexico goes up to fifth rank and Indonesia to eight ranks. In 1994, the position almost the same with 1993, but Indonesia fell to the last rank. In 1995, Philippine goes up to fifth position, Italy and Indonesia to eight and ninth position. In 1996 and 1997, each country was positioned in the same rank. In 1998, the position also has almost the same rank, but China fell to second rank, the first rank positioned by Mexico and

Indonesia fell to last position. In 1999 the position of each country is similar with in 1998. In 2000, Canada up to forth position and Indonesian also up to eight ranks, while Taiwan fell to sixth position. In 2001, the position almost the same, but Indonesia up to seventh rank, while Taiwan fell to eight rank. In 2002, China back to first rank and Mexico down to second rank. The other countries have the same rank with 2001. In 2003, India and Canada were changing in position, India up to fourth, while Canada down to fifth rank. Italy and Philippine also experienced the same condition, Italy up to ninth and Philippine to the last rank. The other countries have the same rank as in 2002. In 2004, the position of all countries was the same with 2003. In 2005, India, Indonesia and Philippine up to third, fifth and seventh position, while, Hong Kong, Canada, South Korea, Taiwan down to fourth, sixth, ninth and tenth rank. In 2006, the position almost the same, except Indonesia that experienced goes up to fourth rank replacing Hong Kong that down to fifth rank. In 2007, Hong Kong, Philippine and South Korea were down to seventh, eight and tenth rank, while Italy and Taiwan experienced up to better position compared to their position in 2006. In 2008, India and Mexico has switch in position, India up to second, while Mexico down to third rank. Indonesia stays in the fourth rank, followed by Italy, Canada, Hong Kong, Philippine, Taiwan and South Korea.

Further analysis about the export movement of Indonesia to US market can be related to the quota system elimination started in 1995 that completely eliminated in 2005. This process has fourth stages, below is the table of minimum standard of quota that must be removed in each stage

Table 6.1
Minimum Percentage of Volume of a Country's Imports in 1990 (on which quota must be removed)

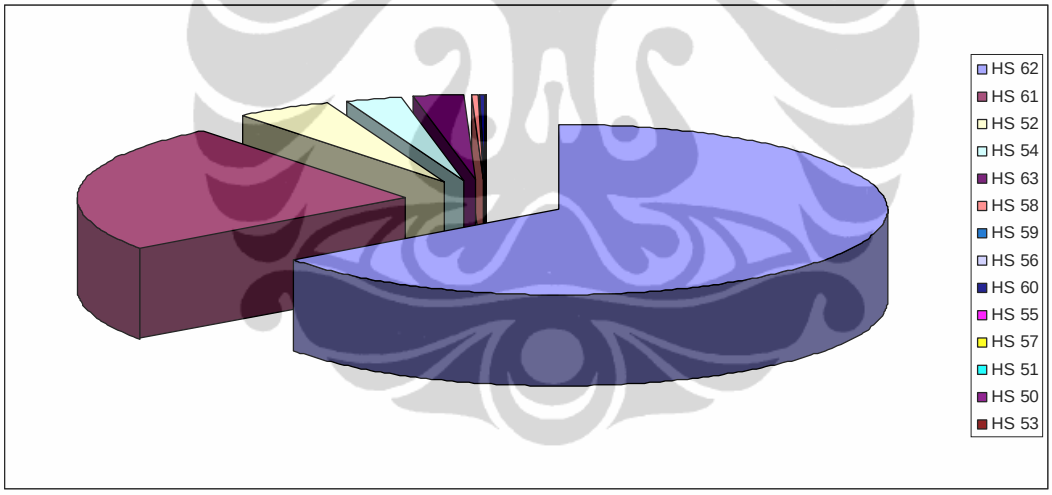
Starting date	% of country's 1990 physical volume trade on which quota must be removed	Cumulative % of country's 1990 physical volume trade on which quota must be removed	
Phase 1	01/01/1995	16%	16%
Phase 2	01/01/1998	17%	33%
Phase 3	01/01/2002	18%	51%
Phase 4	01/01/2005	All restriction eliminated	100%

Source: Chiron, 2004

Actually, during the first stage (1995-1997) practically no quotas were eliminated except by Canada. At the end of the second stage (1998-2001), the US and the EU integration process had integrated some products previously subject to quotas but representing a small percent of their 1990 total imports.

In the first to second stage, US has 33.24% of integration program, it fulfill the minimum standard in second stage which is 33%. In this program, Yarns (16.46%) has the highest percentage, actually yarn has less value added compared to other textile and textile products. Then followed by made ups (8.73%), fabrics (4.15%) and clothing (3.90%).

In the first and second stage (1995-2001), the highest share of HS in Indonesian textile and textile products export to US market is HS 62 (64.9%), HS 61 (24.49%), HS 52 (4.8%) and the lowest share is HS 51 (0.005%), HS 50 (0.004%) and HS 53 (0.0017%).



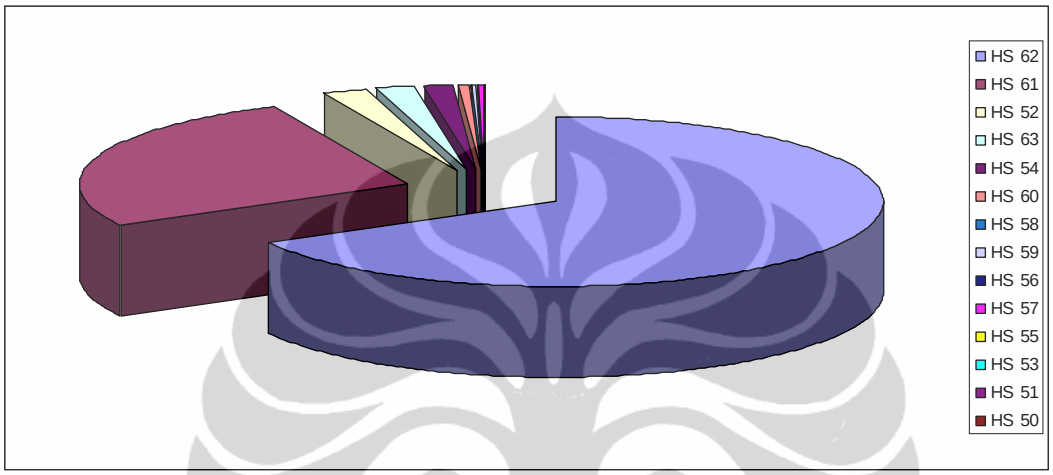
Source: BPS, 2009

Figure 6.6 HS Composition in Indonesian Textile and Textile Products Export (Stage 1-2)

From the figure above, it can be seen that the biggest Indonesian product share to US market is clothing (HS 62 and HS 61), while actually these products has the smallest share of integration in US in the first and second stage. Meanwhile, Indonesian export of yarn, made ups and fabric products only has smaller share, HS 52 (4.8%), HS 54 (2.7%), HS 56(0.1%), HS 55(0.03%), HS 57

(0.032%), HS 51(0.005%), HS 50 (0.0043%) and HS 53 (0.0017%). This fact shows that although US has liberalize these products but it did not influenced much to Indonesian export to US.

In the third and fourth stage (2002-2005), US was forced to liberalize sensitive products, such as clothing product which has smallest percentage in product integration in first and second stage.



Source: BPS, 2009

Figure 6.7 HS Composition in Indonesian Textile and Textile Products Export (Stage 3-4)

From the figure above, it can be seen that HS proportion export in Indonesian export to US market in second and third stage is still HS 62 (66.8%), HS 61 (26.4%) and HS 52 (2.23%) and the lowest are HS 53 (0.008%), HS 51 (0.006%) and HS 50 (0.002%). So, the liberalization in clothing products can give positive effect to Indonesian textile and textile products export to US, especially in clothing products.

6.2 The Result Estimation

In the estimation, first, the model will be analyzed to know whether it has individual effect or not. To determine whether this thesis uses the pooled least square model or fixed effect or random model, specific estimation using F test or the Chow test will be used. The PLS is a restricted model that applied the same intercept for all individual. Sometimes the assumption of the same behavior of all

cross sectional unit is unrealistic because it is very possible that each cross section has different behavior. So, it is important to test whether the model has an individual effect or not. Below is the estimation result of F test:

Table 6.2
The Result of Chow F-Test

Item	SSR1 (PLS)	SSR2 (FEM)	F-Stat	F-Table		H_0	Conclusion
				a	F-Table		
Textile and textile products	141.72	56.48	28.29	1%	1.67	F-Stat>F-Table	Individual Effect
				5%	2.06	F-Stat>F-Table	Individual Effect
				10%	1.49	F-Stat>F-Table	Individual Effect

From the result above, the value of F-stat is 28.29 which is more than the f table value 1.67, 2.06 and 1.49 at a = 1%, 5% and 10%. It means that there is individual effect in this model. After knowing the existence of individual effect, Haussman test will be used to know whether fixed effect or random effect model that will be applied in this model.

Table 6.3
The Result of Hausmann Test

c^2-Hausmann (H)	c^2-Table		H_0	Conclusion
	a	c^2-Table		
12.16	1%	16.81	c^2-Table < H	Fixed Effect
	5%	12.59	c^2-Table < H	Fixed Effect
	10%	10.64	c^2-Table < H	Fixed Effect

From the result table above, it is found that with a = 1%, 5% the result shows random effect model is the appropriate model. But with a = 10%, fixed effect model also might be the appropriate model. In choosing the appropriate model, fixed effect and random effect model will be compared. The comparison of these two models show that fixed effect model is better to be chosen because its coefficient are consistent with theory and the probability and also r-square is better than random effect model.

In fixed effect model, it needs to be tested whether there is existence of multicollinearity and heteroscedasticity. To test whether there is multicorrelation, covariance matrix using eviews program will be used to know the existences of multicollinearity. When matrix coefficient in each variable is higher than 0.8 it means that there is multicollinearity, but if the coefficient is smaller it means that this model is free from multicolinearity.

After running the model and checking covariance matrix, it is found that there is no coefficient that is higher than 0.8. It means that there is no muticolinearity problem.

As mentioned before that there is possibility of heteroscedasticy in fixed effect model, to test whether this model has heteroscedasticy or homoscedasticty, Langrange multiplier test will be used to find the structure.

From the calculation of Langrange multiplier test, it is found that the LM value is 160.50 and the X^2 table in the level of 1%, 5% and 10% is 31.99, 26.29 and 23.54. The value of LM test is higher than X^2 table, it means that the structure of the model is heteroscedastic. When there is heteroscedasticity, hence it needs to be corrected using white cross section procedure.

6.3 Significance Test on Indonesian Textile and Textile Products Export

The objective of this research is to analyze determinants factor that influence Indonesian textile and textile products export to destination countries. Determinant factor will be obtained from the independent variable which has significant influence that can affect the dependent variable. The data of Indonesian textile products export is accumulated from HS 50 until HS 63. Below is the result that we obtain from fixed effect model.

Table 6.4. The Estimation Result of Fixed Effect Model (Cross Section)

Variable	Coefficient	Probability	Significant	
			Yes	No
LOG(GDPJ)	0.552398	0.0565*	Yes	-
LOG(POPJ)	1.077811	0.0724*	Yes	-
LOG(DIST)	-0.01287	0.9461	-	No
LOG(RER)	0.224692	0.2185	-	No
AFTA	0.496541	0.0000***	Yes	-
CRISIS	-0.38932	0.0000***	Yes	-

Note: * : Significant at level of 10%, ***: significant at level of 1%

Four independents variable in this model has significant effect to Indonesian textile and textile products export; GDP of country j, population of country j, AFTA and crisis dummy variable. While, distance and real exchange rate has insignificant effect to Indonesian textile and textile products export.

Adjusted R square of this model is 0.80, it means that this model is able to explain the variation of Indonesian textile and textile product exports to seventeen partner countries for 80%. And there is 20% variation that can not be explained by the model.

6.4 Relation between Independent Variables and Indonesian Textile and Textile Products Exports

The model in this thesis uses *double log* that created parameter coefficient such as elasticity value. The elasticity value will be used to interpret the result of estimation using fixed effect model.

6.4.1 Relation Between Gross Domestic Product of Partner Country and Indonesian Textile and Textile products Export

The first independent variable is gross domestic products of partner country. As gross domestic product of partner country considers as the income of partner country, when it bigger, it is expected that there will be higher demand in partner country. Gross domestic product of partner country has positive sign with

the changing elasticity is 0.55. The value of coefficient is less than one, it means that the coefficient is inelastic. Inelastic coefficient of GDP of importer country means less responsive in changing of Indonesian textile and textile products export when there is 1% change in GDP of importer country. This variable is significantly affect Indonesian textile and textile products export at the level of 90%.

6.4.2 Relation between Population of Partner Country and Indonesian Textile and Textile Products Export

The second variable is population of partner country. This variable has positive sign with the changes elasticity 1.07. It means that if there is 1% change in population of partner country, it will change Indonesian textile and textile products export in 1.07%. Since the elasticity is more than one, it means that the coefficient is elastic. Elastic means that if there is 1% change in population, Indonesian textile and textile products export will be responsive to the changes in population. This variable also has significant effect to Indonesian textile and textile products export at confidence level 90%. The relation between these two variables is the positive relation; it means that 1% increasing in population of partner country will significantly increase Indonesian textile and textile products export for about 1.07%.

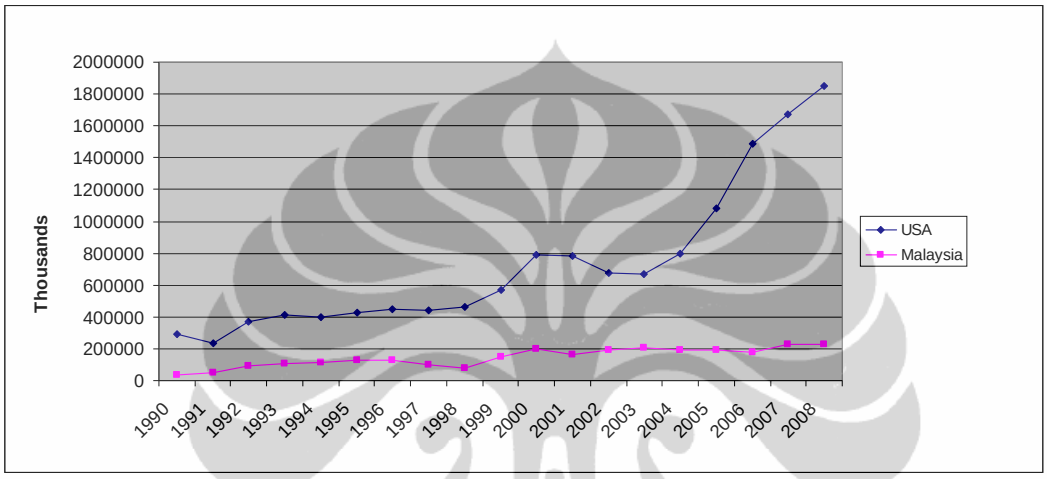
6.4.3 Relation Between Distance and Indonesian Textile and Textile Products Export

The third variable is distance from Indonesia to partner country. Distance is a variable that shows geographical barriers to trade. This variable has negative sign with the changing elasticity is -0.01 but it has insignificant effect to Indonesian textile and textile products export.

The insignificant effect of distance to Indonesian textile and textile products export is in line with the result found in previous study, such as Cadarajat & Yanfitri (2008). They found that some main commodity in Indonesian included textile and textile products has insignificant effect to Indonesian textile and textile products export.

The insignificant effect of distance might happen because the effect of distance is very small or nearly zero in influencing Indonesian textile and textile products export compared to other variables which give more influence.

The insignificant effect of distance might be seen in the figure below which compares the movement of Indonesian export to USA which is absolutely further than Malaysia.



Source: BPS, 2009 (processed)

Figure 6.8 The Comparison of Indonesian textile and Textile Products Export to US and Malaysia

The figure shows that the export movement to USA is much sharper than to Malaysia, although the distance to USA is further than distance to Malaysia from Indonesia.

6.4.4 Relation between Real Exchange Rate and Indonesian Textile and Textile Products Export

The fourth variable is real exchange rate expressed by Rupiah against United States Dollar (US$).This variable has positive sign with the elasticity coefficient 0.22. Higher real exchange rate leads to lower quantity of imports because of the foreign goods relatively more expensive. So, the increase in real exchange rate shows that relative price of foreign goods in terms of domestic goods also leads to increase in export. The positive sign on the real exchange rate variable represents that in long run, a devaluation of currency causes an

improvement in trade balance. But this variable has insignificant affect to Indonesian textile and textile products export. It means that the effect of exchange rate might be smaller or very small compared to other factors that influence export. Some previous research also shows that some commodity has insignificant effect to Indonesian export. Such as research done by Cadarajat & Yanfitri (2008) which found that clothing has insignificant effect to Indonesian export.

The insignificant effect of real exchange rate might happen because textile and textile products is included to necessity goods which is price insensitive, so people will still buy this products in order to fulfill their basic needs.

6.4.5. Relation between AFTA and Indonesian Textile and Textile Products Export

The fifth variable is AFTA dummy variable. This variable has positive sign with the coefficient 0.49. AFTA dummy variable has significant effect at the level of 99%. From those results, it indicates that when partner country is a member AFTA, it will tend to increase the Indonesian textile and textile products export significantly to partner country.

The implementation AFTA is surely expected to have positive impact since by having integration as imports duties among ASEAN countries are reduced and even eliminated, for example through the CEPT scheme, fabric supplier from Jakarta can send products to Bangkok as easy from Jakarta to other country within Indonesia. (Setiaharja, 2009)

6.4.6 Relation between Economic Crisis and Indonesian Textile and Tetxtile Products Export

The sixth variable is crisis dummy variable. This variable has negative sign with the coefficient -0.38. Crisis dummy variable has significant at the level of 99%. From those results, it indicates that when there is crisis, it will tend to decrease the Indonesian textile and textile products export.

CHAPTER VII
CONCLUSION

7.1 Conclusion

From the result and analysis chapter, it is found that GDP and population of importer country, AFTA and crisis dummy variable has significant effect to Indonesian textile and textile products export. The biggest factor that influences Indonesian textile and textile products export is population of importer country. On the contrary distance and real exchange rate has insignificant effect to Indonesian textile and textile products export.

From the analysis of Indonesian textile and textile products export to ASEAN countries and non ASEAN countries, it is found that although there was an increasing in Indonesian textile and textile products export to ASEAN, but at the same time there is also increasing to other countries outside ASEAN. This fact tends to form an almost similar pattern of Indonesian textile and textile products export to ASEAN and non ASEAN countries. But actually, there should be a difference which is caused by the implementation of quota system by some developed countries. Quota system has been influence Indonesian textile and textile products export to US and some EU countries since its implementation. In further progress quota import based on MFA then eliminated through four stages, started from 1995 and fully eliminated in 2005. Meanwhile, Indonesian textile and textile products export to ASEAN countries is not influenced by quota, it might be influenced by intra condition in ASEAN region, in this case is the creation of AFTA.

In brief, it is important to analyze each factor that has significant effect to Indonesian textile and textile products export to ASEAN and non ASEAN countries and also improve the benefit from the creation of AFTA.

7.2 Policy Recommendation

As the ASEAN eager to achieve integration in ASEAN economic community, textile and textile products also becomes an important commodity. It

is planned to build production integration among ASEAN countries. Although it is still a long way to build integration but in this condition, Indonesia should prepare its textile and textile products industry, government should monitor and solve problems in textile and textile products industry. The development of ASEAN production network in textile and textile product will support Indonesia to secure market access gains in world market.

Generally, besides having more concentration on ASEAN market, Indonesia should also continue to increase its export performance to major market such as USA, EU and Japan.

An extension of this study will be comprehensive analysis of the effect of AFTA to Indonesian textile and textile products export. Other main commodity such as agriculture products also can be included in the study and independent variables such as per capita GDP, tariff and remoteness can be included in the extension of this study.

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Annex 1 : Pooled Least Squares Model

Dependent Variable: LOG(XIJ?)
Method: Pooled Least Squares
Date: 12/21/09 Time: 08:42
Sample: 1990 2008
Included observations: 19
Cross-sections included: 17
Total pool (balanced) observations: 323

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	15.34856	0.765445	20.05181	0.0000
LOG(GDPJ?)	0.873014	0.050657	17.23370	0.0000
LOG(POPJ?)	-0.608415	0.064656	-9.410012	0.0000
LOG(DIST?)	-0.131489	0.075253	-1.747284	0.0816
LOG(RER?)	-0.038660	0.021865	-1.768110	0.0780
AFTA?	0.656057	0.153988	4.260441	0.0000
CRISIS?	-0.396786	0.293598	-1.351460	0.1775

R-squared	0.540194	Mean dependent var	18.78598
Adjusted R-squared	0.531463	S.D. dependent var	0.978374
S.E. of regression	0.669695	Akaike info criterion	2.057444
Sum squared resid	141.7231	Schwarz criterion	2.139312
Log likelihood	-325.2771	F-statistic	61.87429
Durbin-Watson stat	0.151247	Prob(F-statistic)	0.000000

Annex 2 : Fixed Effect Model

Dependent Variable: LOG(XIJ?)
Method: Pooled Least Squares
Date: 12/21/09 Time: 08:41
Sample: 1990 2008
Included observations: 19
Cross-sections included: 17
Total pool (balanced) observations: 323

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.714610	5.507991	-0.311295	0.7558
LOG(GDPJ?)	0.552398	0.188306	2.933506	0.0036
LOG(POPJ?)	1.077811	0.641174	1.680995	0.0938
LOG(DIST?)	-0.012868	0.147005	-0.087537	0.9303
LOG(RER?)	0.224692	0.105462	2.130546	0.0339
AFTA?	0.496541	0.181672	2.733179	0.0066
CRISIS?	-0.389320	0.194994	-1.996575	0.0468
Fixed Effects (Cross)				
_BEL--C	1.640023			
_CAN--C	-0.346134			
_FRA--C	-1.147066			
_GER--C	-0.675544			
_HGK--C	3.269977			
_ITA--C	-0.862644			
_JPN--C	-0.642323			
_KOR--C	1.199116			
_MAS--C	0.603183			
_NET--C	1.188723			
_PHI--C	-0.261941			
_SAU--C	1.806682			
_SPA--C	-0.725747			
_THA--C	-0.286118			
_TUR--C	-2.225366			
_UKI--C	-0.252932			
_USA--C	-2.281889			

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.816730	Mean dependent var	18.78598
Adjusted R-squared	0.803290	S.D. dependent var	0.978374
S.E. of regression	0.433928	Akaike info criterion	1.236668
Sum squared resid	56.48803	Schwarz criterion	1.505665
Log likelihood	-176.7219	F-statistic	60.76960
Durbin-Watson stat	0.388744	Prob(F-statistic)	0.000000

Annex 3 : Random Effect Model

Dependent Variable: LOG(XIJ?)
Method: Pooled EGLS (Cross-section random effects)
Date: 12/21/09 Time: 08:42
Sample: 1990 2008
Included observations: 19
Cross-sections included: 17
Total pool (balanced) observations: 323
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	12.00592	1.840661	6.522614	0.0000
LOG(GDPJ?)	0.788356	0.130186	6.055591	0.0000
LOG(POPJ?)	-0.386197	0.203675	-1.896145	0.0589
LOG(DIST?)	-0.017068	0.116314	-0.146742	0.8834
LOG(RER?)	0.062631	0.062757	0.998003	0.3190
AFTA?	0.648911	0.156020	4.159160	0.0000
CRISIS?	-0.388071	0.192450	-2.016480	0.0446
Random Effects (Cross)				
_BEL--C	0.019248			
_CAN--C	-0.655719			
_FRA--C	-0.605192			
_GER--C	0.241573			
_HGK--C	0.766586			
_ITA--C	-0.332169			
_JPN--C	0.001517			
_KOR--C	0.464964			
_MAS--C	-0.224946			
_NET--C	0.078216			
_PHI--C	0.538480			
_SAU--C	1.006850			
_SPA--C	-0.544109			
_THA--C	0.142443			
_TUR--C	-1.318369			
_UKI--C	0.336760			
_USA--C	0.083867			

Effects Specification

	S.D.	Rho
Cross-section random	0.615810	0.6682
Idiosyncratic random	0.433928	0.3318

Weighted Statistics

R-squared	0.334704	Mean dependent var	2.997961

Adjusted R-squared	0.322072	S.D. dependent var	0.532963
S.E. of regression	0.438822	Sum squared resid	60.85055
F-statistic	26.49613	Durbin-Watson stat	0.352269
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.467046	Mean dependent var	18.78598
Sum squared resid	164.2688	Durbin-Watson stat	0.130492

Annex 4 : Result of Hausman Test

Correlated Random Effects - Hausman Test
Pool: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	12.168739	6	0.0583

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
LOG(GDPJ?)	0.552398	0.788356	0.018511	0.0829
LOG(POPJ?)	1.077811	-0.386197	0.369621	0.0160
LOG(DIST?)	-0.012868	-0.017068	0.008081	0.9627
LOG(RER?)	0.224692	0.062631	0.007184	0.0559
AFTA?	0.496541	0.648911	0.008662	0.1016
CRISIS?	-0.389320	-0.388071	0.000986	0.9682

Cross-section random effects test equation:
Dependent Variable: LOG(XIJ?)
Method: Panel Least Squares
Date: 12/21/09 Time: 08:42
Sample: 1990 2008
Included observations: 19
Cross-sections included: 17
Total pool (balanced) observations: 323

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.714610	5.507991	-0.311295	0.7558
LOG(GDPJ?)	0.552398	0.188306	2.933506	0.0036
LOG(POPJ?)	1.077811	0.641174	1.680995	0.0938
LOG(DIST?)	-0.012868	0.147005	-0.087537	0.9303
LOG(RER?)	0.224692	0.105462	2.130546	0.0339
AFTA?	0.496541	0.181672	2.733179	0.0066
CRISIS?	-0.389320	0.194994	-1.996575	0.0468

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.816730	Mean dependent var	18.78598
Adjusted R-squared	0.803290	S.D. dependent var	0.978374
S.E. of regression	0.433928	Akaike info criterion	1.236668

Sum squared resid	56.48803	Schwarz criterion	1.505665
Log likelihood	-176.7219	F-statistic	60.76960
Durbin-Watson stat	0.388744	Prob(F-statistic)	0.000000

Annex 5. Fixed Effect Model with White Hetero Cross Section

Dependent Variable: LOG(XIJ?)
Method: Pooled Least Squares
Date: 12/23/09 Time: 07:40
Sample: 1990 2008
Included observations: 19
Cross-sections included: 17
Total pool (balanced) observations: 323
White cross-section standard errors & covariance (d.f. corrected)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.714610	6.000569	-0.285741	0.7753
LOG(GDPJ?)	0.552398	0.288554	1.914368	0.0565
LOG(POPJ?)	1.077811	0.597724	1.803192	0.0724
LOG(DIST?)	-0.012868	0.190331	-0.067610	0.9461
LOG(RER?)	0.224692	0.182210	1.233148	0.2185
AFTA?	0.496541	0.104630	4.745693	0.0000
CRISIS?	-0.389320	0.091036	-4.276544	0.0000
Fixed Effects (Cross)				
_BEL--C	1.640023			
_CAN--C	-0.346134			
_FRA--C	-1.147066			
_GER--C	-0.675544			
_HGK--C	3.269977			
_ITA--C	-0.862644			
_JPN--C	-0.642323			
_KOR--C	1.199116			
_MAS--C	0.603183			
_NET--C	1.188723			
_PHI--C	-0.261941			
_SAU--C	1.806682			
_SPA--C	-0.725747			
_THA--C	-0.286118			
_TUR--C	-2.225366			
_UKI--C	-0.252932			
_USA--C	-2.281889			

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.816730	Mean dependent var	18.78598
Adjusted R-squared	0.803290	S.D. dependent var	0.978374
S.E. of regression	0.433928	Akaike info criterion	1.236668
Sum squared resid	56.48803	Schwarz criterion	1.505665
Log likelihood	-176.7219	F-statistic	60.76960
Durbin-Watson stat	0.388744	Prob(F-statistic)	0.000000

Annex 6. Fuel Price

Energy Information Administration

September 2009 Monthly Energy Review
Release Date: September 24, 2009
Next Update: Last week of October 2009

Year	**All Types of Gasoline, U.S. City Average Retail Price (Nominal Cents per Gallon Including Taxes)**
1990 **Average**	121.7
1991 **Average**	119.6
1992 **Average**	119
1993 **Average**	117.3
1994 **Average**	117.4
1995 **Average**	120.5
1996 **Average**	128.8
1997 **Average**	129.1
1998 **Average**	111.5
1999 **Average**	122.1
2000 **Average**	156.3
2001 **Average**	153.1
2002 **Average**	144.1
2003 **Average**	163.8
2004 **Average**	192.3
2005 **Average**	233.8
2006 **Average**	263.5
2007 **Average**	284.9
2008 **Average**	331.7

Annex 7
US General Imports for All Textile and Textile in US Dollar 1990-2008

Country	Value	Share
China	211,777,868,494	17.95
Mexico	102,404,117,280	8.68
Hong Kong	73,188,527,327	6.20
India	50,621,306,112	4.29
Taiwan	46,156,572,790	3.91
Korea, South	44,696,577,490	3.79
Canada	41,298,768,672	3.50
Indonesia	40,881,895,565	3.47
Italy	33,582,978,861	2.85
Philippines	33,454,669,842	2.84
row	501,667,411,515	42.52

Annex 8
Major Importer of Textile Products in EU
(in Million Euro)

	2005	2006	2007	2008	Share	% growth 2005/2008
Extra-E27	18,074	19,868	20,930	19,885	100	10
China	4,081	4,885	5,451	5,613	28.2	37.5
Turkey	3,328	3,677	3,815	3,418	17.2	2.7
India	2,028	2,210	2,398	2,225	11.2	9.7
Pakistan	1,246	1,394	1,546	1,472	7.4	18.1
USA	894	987	954	924	4.6	3.4
Switzerland	935	943	982	902	4.5	-3.6
South Korea	803	737	799	676	3.4	-15.8
Japan	522	549	568	571	2.9	9.5
Taiwan	487	522	411	426	2.1	-12.6
Indonesia	387	438	459	395	2	2

Annex 9
Major Importer of Clothing in EU, 2005-2008
(In Million Euro)

	2005	2006	2007	2008	Share	% growth 2005/2008
Extra-E27	49,305	55,494	58,036	59,433	100	20.5
China	16,961	18,883	21,860	25,311	42.6	49.2
Turkey	8,098	8,238	8,916	7,882	13.3	-2.7
Bangladesh	3,538	4,615	4,404	4,730	8	33.7
India	3,239	3,811	3,833	3,898	6.6	20.4
Tunisia	2,463	2,468	2,571	2,582	4.3	4.8
Morocco	2,264	2,368	2,540	2,396	4	5.9
Vietnam	690	1,024	1,128	1,246	2.1	80.8
Sri Lanka	797	969	1,042	1,124	1.9	41
Indonesia	1,200	1,414	1,196	1,123	1.9	-6.5
Pakistan	779	907	909	882	1.5	13.3