



**UNIVERSITAS INDONESIA**

**DETERMINANT FACTORS OF INDONESIAN FURNITURE  
EXPORT TO EUROPEAN UNION**

**THESIS**

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**FACULTY OF ECONOMICS  
MAGISTER OF PLANNING AND PUBLIC POLICY  
ECONOMIC GLOBALIZATION  
SALEMBA  
DECEMBER, 2009**



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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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# CHAPTER 1

## INTRODUCTION

### 1.1. Background

Furniture has given big contribution for Indonesian export. Currently, the Ministry of Trade (MOT) is developing a road map for increasing export of ten main commodities, ten potential commodities and three services. Furniture products become one of main commodities which are included in the road map of Ministry of Trade. The other products are coffee, palm oil, cocoa, rubber, textile, footwear, electronics, automotive components and shrimp. Indonesian have been export its furniture products to the world market. Moreover, Indonesian furniture industries have a big market in the world, demand on those products and its processing products are very high, especially for people who stay in US, Japan and European Union (EU). Therefore, Indonesia tries to increase furniture export to the world.

Indonesia is one of the biggest furniture producers besides China, India, Malaysia, and Thailand. In the context of the kind of furniture material, Indonesia is categorized as the main producer of wooden furniture. Ironically, Indonesian furniture makers are faced with a number of obstacles that prevent them from competing on an equal footing with furniture makers from other countries such as despite the relatively abundant supply of wood materials, smuggling, adaptation of high technology machines, and labor costs. Therefore, Indonesia has more difficulty to compete to determine the selling price of wooden furniture to other wooden furniture producers in the world.

Based on Central Statistic Bureau, in the period of 2004, furniture export share was about 2.37% of total Indonesia's export or 2.98% of Indonesia's non oil and gas export. Meanwhile, in 2008 its share decreased 0.97% became 1.40% of total Indonesia's export or 1.78% of Indonesia's non oil and gas export. During the years 2003 - 2008, export value of Indonesian furniture grows 5.53%, which in 2003 valued at US\$. 1.569 billion and increased to US\$.1.925 billion in 2008.

Furniture export volume in 2007 reached 879,501 tons, meanwhile for 2008, furniture export volume reached 813,794 tons or decreased around 7.47%.

The main export destination countries of Indonesian furniture products are the U.S., Japan, Netherlands, U.K, and France. In 2008, seven of ten of the main export destination of Indonesia are European Union countries, namely Netherlands, United Kingdom, France, Germany, Belgium, Spain and Italy. Total market share of the seventh country reached 38.93% of the overall Indonesia exports to the world. This indicates the importance of the EU market for export of Indonesian furniture.

Based on Eurostat's data, since the EU is considered as a single economy, the EU generated an estimated nominal GDP of US\$.18.39 trillion (15.247 trillion international dollars based on purchasing power parity) in 2008, amounting to over 22% of the world's total economic output in terms of purchasing power parity, which makes it the largest economy in the world by nominal GDP and the second largest trade bloc economy in the world by PPP valuation of GDP. It is also the largest exporter of goods, the second largest importer, and the biggest trading partner to several large countries such as India, and China.

In 2008, EU main trading partners are the U.S. with the value €249.3 billion or equivalent 19% of total EU27 trade, followed by Russia with the value €105.2 billion (8%), Switzerland with the value €97.7 billion (7.5%), China with the value €78.4 billion (6%), and Turkey with the value €54.3 billion (4.1%) (Eurostat- EU Commission. *External and intra-European Union trade*. Monthly statistics — Issue number 6/2009. 2009 edition)

Indonesia until now is not one of the main EU trading partners, because the EU imports to Indonesia is still relatively low is 1.1% in 2007 or €9.8 billion. However, Indonesia including three large facilities that enjoy a reduction of customs through the GSP scheme provided to 178 developing countries that allows Indonesia to obtain special customs tariff compared to non-GSP countries (Simanjuntak, 2007). In addition, economic growth is marked with a GDP increase of EU countries and easy movement of goods in the countries members of EU to give a significant opportunity for increased Indonesia's non-oil exports.

One of the main Indonesian export products that have a great opportunity for the European market is furniture.

Based on CBI's data, the EU is the largest furniture market in the world, followed closely by the NAFTA zone (€ 80 billion). Total EU27 furniture consumption was estimated at €81.7 billion in 2007. The average consumption per capita was € 165, with people in Austria, Luxembourg, the Scandinavian countries and the Netherlands spending most on furniture. Consumption increased strongly in 2006 and 2007. An average annual increase in consumption of 2% between 2003 and 2007, from €75.4 billion, includes falls in some of the more mature markets, but significant increases in some other countries, particularly new member states. (CBI Market Survey. *The Domestic Furniture Market in the EU*. Publication date: November 2008)

In 2007, EU furniture imports from developing countries were 4 million tones, worth €9.5 billion. Between 2003 and 2007, the share from developing countries in total EU furniture imports rose from 22% to 30% in volume and from 19 to 26% in value.

Besides the problem from domestic country, Indonesia also faces the external problem for example non tariff barriers which implied by European Union (EU). EU has applied some non tariff barriers in the form of regulation related to environment in order to protect its consumers. Recently, EU has applied a new regulations related to furniture products. The regulation is namely Commission Regulation (EC) No.1980/2000 relating to dangerous substances and environmental issues concerning furniture industry. Environmental legislation to product furniture are SFI (Sustainable Forestry Initiative), Forest Stewardship Council and Ecolabelling. This regulation is effectively implemented in European Union on 20 September 2000. Consequently, all furniture in European Union countries either local or imported furniture must be comply the standard requirements which are determined by European Union (EU).

The ASMINDO (Indonesian Furniture Industry and Handicrafts Association) said to be able to export furniture to the EU, exporters must have a certificate from the three Required Certification refers to the Sustainable Forest Management (SFM), Verification of Legal Origin (VLO) and Chain of Custody

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(CoC), which must be owned by Indonesian exporters. The VLO and CoC prove the legality of the wood, while the SFM certifies the wood was legally felled and came from a sustainable forest. In the year 2008 is approximately 2,000 from 3,500 exporters who have obtained the certificate. Other requirements that must be fulfilled are *Consumer Health and Safety*, *Occupational Health and Safety*, and *Environment*, more often cause a high economic cost for Indonesian exporters to fulfill those requirements.

In the case of this, the implementation of this regulation predicted affects to the changing of Indonesia's furniture export performance in European Union. Based on data, export value of Indonesia's export was sharply decreased post of the implementation of Ecolabelling regulation in 2000. In order to cope this issue and to develop the performance of Indonesia's furniture export especially in European Union, it is important to identify whether Ecolabelling regulation has an impacts on the decreases in export value or not. In addition, it is also very important to encourage information concerning what the factors that actually influence demand for Indonesia's furniture export in European Union. If Indonesia does not anticipate the problems caused by this foreign trade policy, hence the performance of Indonesia's furniture export in European Union will might be decreased in the future.

## **1.2. Research Question**

Based on the background of the analysis, there are some research questions:

1. What are the determinant factors of Indonesia's furniture export to European Union Countries in the period of 1990-2008?
2. Does the imposing of EU's Ecolabelling Regulation influence the Indonesia's furniture export performances to European Union countries?

## **1.3 Research Objectives**

This research has two main objectives:

1. To analyze the determinant factors in performance of Indonesia's furniture export to European Union countries in the period of 1990-2008.

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2. To analyze the influence of EU's Ecolabelling Regulation on Indonesia's furniture exports performance.

#### **1.4 Research Coverage**

This research has focus on export of Indonesia's furniture between Indonesia and EU members' pre and post of EU establishment. In this study, regulation which imposed by European Commission is determined as dummy variable.

The countries of EU being analyzed are Netherlands, United Kingdom, France, Germany, Belgium, Spain, Italy, Sweden, Denmark, and Austria. Those countries are chosen by consideration of availability of the data of Indonesia export. Moreover, it countries are the main markets for Indonesia furniture products in EU.

Furthermore, this research will use SITC 821 (Furniture and parts thereof). Referring to the availability of the data, the time periods chosen in this research is annual data during 1990-2008.

#### **1.5 Research Methodology**

This research refers to the model developed by Gunawardana (2005), and Gu (2005) and modified by using some independent variables. Model inspired by those researches uses some variables namely real per capita GDP of partner countries, real per capita GDP of Indonesia, proximity distance, real exchange rate, and dummy of Ecolabelling regulation. The estimation will use panel data analysis because panel data enable to describe the demand for Indonesia's furniture export for the certain period and the potential destination of Indonesia's furniture export in European Union. In selecting the best and most efficient model, some of tests is used in this research namely F-test/Chow test and Hausman test. F-test/Chow test is used to identify whether the model has individual effect or not. If the model has individual effect, hence it has to be tested using the Hausman test, in order to make sure that whether the Fixed Effect Model or Random Effect Model which is the best estimation model. When the result

shows that Random Effect Model is the best model, it doesn't need to conduct the Langrage Multiplier (LM) test.

## **1.6 Research Hypothesis**

According to literature study and previous researches, hypothesis in this research are:

- Real GDP per capita of partner country is expected has positive effect on export value.
- Real GDP per capita of Indonesia is expected has positive effect on export value.
- Proximity distance is expected has negative relation to the export value.
- Real exchange rate is expected has positive relation to the export value.
- The EU's Ecolabelling Regulation is expected has negative relation to the export value.

## **1.7 Structure of Research**

In order to facilitate the understanding of this thesis, in this part, this study gives an early brief description about the content of each chapter of the thesis.

### **CHAPTER 1: INTRODUCTION**

This part is an introduction chapter. It will discuss about background of the problem which explain about the recent condition of research object, research question, objective of the research to answer the research question, research coverage which specifying research's object and the organization of thesis.

### **CHAPTER 2: LITERATURE STUDY**

This chapter consists of several theories which underlie this study in completing this research. The theories used in this research include international trade theories, gravity theory, and theory of trade barrier which is divided into tariff and non tariff barrier.

Moreover, this part also consists of several literature studies about the previous empirical research which related to the topics in this thesis.

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### **CHAPTER 3: INDONESIA'S FURNITURE PROFILE**

This chapter contains general descriptions about the condition of Indonesia's furniture industry. This part consists of the Indonesia's export and import, production, policies and the main problem that faced by Indonesian exporters.

### **CHAPTER 4: THE WORLD AND THE EU'S FURNITURE PROFILE.**

This chapter contains general descriptions about the condition of the world's and EU's furniture industry. This part consists of the world's export and import, market, and trend of the world furniture industry. The next part consists of EU's trade during 1990 to 2008 especially in export and import activities of furniture sector. The last consists of EU non tariff barriers policies in furniture product especially EC Regulation No.1980/2000 (Ecolabelling and Environmental Requirement)

### **CHAPTER 5: RESEARCH METHODOLOGY**

This chapter will describe about how the problem being analyzed. This chapter consists of construction of the models, data source and description, and analysis method.

### **CHAPTER 6: ANALYSIS AND RESULTS**

In this chapter, the study not only analyze the data by using available method in Chapter 5 but also will describe and discuss both result of regression and analysis of the result in order to achieve the objective of the research.

### **CHAPTER 7: CONCLUSION AND RECOMMENDATION**

This chapter consists of the conclusion based on the analysis on Chapter 6, policy recommendation which can be used as an input for policy makers and also suggestion for other researchers in the future.

## **CHAPTER 2**

### **LITERATURE STUDY**

#### **2.1 Theory of International Trade**

##### **2.1.1 Heckscher - Ohlin Theory (Factor of Endowments)**

The theory argues that the pattern of international trade is determined by differences in factor endowments. The H-O theorem predicts that a nation will export the commodity whose production requires the intensive use of a nation's relatively abundant and cheap factor and import the commodity whose production requires the intensive use of the nation's relatively scarce and expensive factor. In short, the relatively labor-rich nation exports the relatively labor-intensive commodity and imports the relatively capital-intensive commodity. (Salvatore,2007;132).

Moreover, the theorem said that the owners of a country's abundant factor gain from trade, on the other side the owner of scarce factors lose. However, in reality, Empirical problems with the H-O model, known as the Leontief paradox, were exposed in empirical tests by Wassily Leontief who found that U.S. exports were less capital-intensive than U.S. imports, even though the U.S. is the most capital-abundant country in the world.

Furthermore, in the Indonesia case, Indonesia will export labor-intensive products (but from the unskilled workers category) or from raw materials that were abundant in the country, like oil, coal, agricultural, and furniture commodities.

#### **2.2 Standard, Trade and Welfare**

Safety standards designed with the aim of maximizing national welfare, i.e. not as a protectionist device, may increase trade, decrease it, or leave it unaltered. The outcome will to a large extent depend on a standard's effect on the relative costs of domestic and foreign producers. But it also depends on many

other factors, like the level of competition in exporting and importing countries and the willingness of consumers in different countries to pay higher prices for safer products. It is therefore difficult to predict the effect of a safety standard on trade flows (WTO, 2009).

The effects of standards on the direction and size of trade flows tend to be complex and need to be analyzed on a case by case basis. Standards typically have an effect on both consumers and producers. They may affect the willingness of consumers to pay for product varieties meeting the standard, because they change consumers' perception or appreciation of these varieties. Standards may affect producers' costs in a number of ways. First, they may imply a fixed cost when producers switch from producing one product variety to producing another, higher quality variety. Second, they may involve a change in variable costs, for instance if it is more expensive to produce a good meeting the standard than one not meeting the standard. Third, the introduction of a standard affects production costs if it causes producers to run additional product lines. And fourth, standards will typically also generate costs related to conformity assessment procedures. Overall, the introduction of a standard is likely to affect the prices that consumers are willing to pay for certain product varieties and the prices at which producers are willing to supply those varieties.

Standards will affect trade flows if they have a different effect on the demand for and supply of varieties produced abroad and varieties produced domestically. This may, for instance, be the case if foreign and domestic producers supply different varieties of the relevant good, or if standards affect their production costs differently. The trade effects of standards will affect countries' welfare, including the welfare of the country introducing the standard. If a standard is purely designed to raise the costs of foreign producers in order to protect the domestic industry, it is very likely to reduce both trade flows and domestic welfare. But standards that reduce trade flows are not necessarily welfare reducing, in particular if they are designed in order to reduce the negative welfare effects of a market imperfection.

Standards that improve consumers' information, that increase consumers' safety or reduce the negative effects of environmental externalities, for instance,

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may well increase domestic welfare even if they have a negative effect on trade. As a consequence it may be in the interest of individual countries to set standards in order to raise their own welfare but which, as a by-product, reduces trade flows. Tensions with trading partners may then arise, if such a standard that is welfare-increasing from the domestic point of view decreases trading partners' welfare. The discussion in previous Subsections has illustrated the importance of distinguishing among different types of standards. For the sake of this Report, standards have been distinguished according to their function – that is according to the policy objectives they intend to address. The cases of standards related to network externalities, imperfect information and negative production or consumption externalities have been discussed. These types of standards differ in a number of aspects that will play a role when evaluating the following three statements often used in the public debate.

Standards are likely to increase trade flows in the case of standards targeting network externalities. Voluntary standards targeting information asymmetries (e.g. safety standards) or negative production externalities may also have a positive impact on trade, as they are likely to increase the variety of products supplied in the market. Mandatory safety standards and environmental product standards have ambiguous effects on the size of trade flows, but are likely to decrease trade if they create cost disadvantage (in relative terms) for producers exporting to the countries imposing the standard. The impact of mandatory process standards related to the environment depends on whether they are applied to foreign producers or not. If they are applied to foreign producers, trade flows may decrease.

Based on WTO Report 2005 page 46-47, to investigate the ambiguity of the effect of a product standard on trade and welfare, consider a two country situation in which there are many consumers and many firms in each, i.e., there is perfect competition, except that the assumption of perfect information is not met for consumers. The product is assumed to have a credence characteristic. The possibility that it might be optimal for the government in each country to exploit its international market power is ignored. Prior to imposition of the product standard by the importing country, the equilibrium world price ( $p_{ns}$ ) is found in

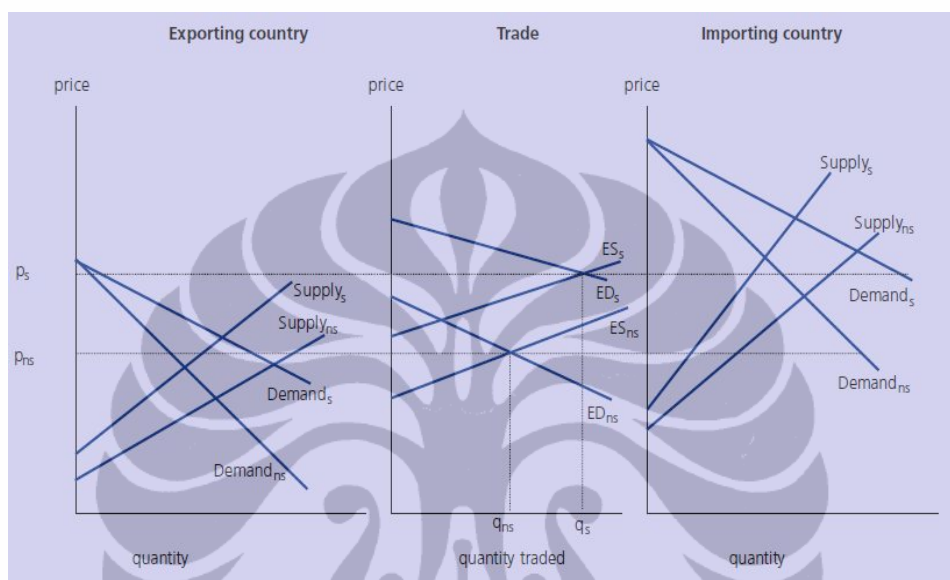
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the middle panel where the export supply function ( $ESns$ ) and the import demand ( $EDns$ ) function intersect (see Chart below). These functions are derived from the domestic demand and supply functions for the exporting country (left-hand panel) and the importing country (right-hand), respectively. The volume of the product traded is  $qns$  and the welfare gains from trade for both countries jointly, measured from no trade, is given in the middle panel by the area of the triangle bounded by the price axis, and the  $EDns$  and  $ESns$  functions. The area below the price line ( $pns$ ) and above the  $ESns$  line is the gain to the exporting country; and the area above the price line and below the  $EDns$  line is the gain to the importing country.

To overcome the market failure caused by lack of information about the quality of this product, suppose that the government in the importing country imposes a standard which has to be complied with by both domestic and export suppliers. There are two consequences in the importing country: production costs are likely to rise and consumers will gain greater utility from consuming the good. These effects are illustrated in the right-hand panel by the upward shift in the supply function and the rotation of the demand function, respectively. Together, these changes alter the position of the import demand function from  $EDns$  to  $EDs$ . In the exporting country, production costs will also rise, at least in producing the product for export. Consumers in the exporting country may or may not hold the same preferences as those in the importing country and, therefore, there may or may not be a rotation in the domestic demand function. In the diagram it is assumed that costs rise for all production and that consumers prefer the higher standard.

The effect of the standard on trade and welfare are shown in the middle panel. Given the assumptions made about cost increases and consumers' utility, there is an increase in the volume of trade, an increase in welfare for each country and for this two-country world. However, it is straight forward to show that this is not the only possible outcome. By altering the assumptions and reflecting these in the relative shifts of the trade functions, it is possible to show that the exporting country can lose welfare from the imposition of the standard by the importing country and that world welfare could still rise. But it is also possible to show that there is no monotonic relationship between the direction of change in the volume

of trade and that of welfare for the exporting country or for world welfare: the volume of trade could increase and yet world welfare could fall. It can be assumed that the welfare of the importing country will not fall because a rational government would not impose a welfare-reducing standard in order to correct a market failure.



Source: WTO Report, 2005

### 2.3. Gravity Model

Gravity model originally was developed by Tinbergen (1962) and Polyhonen (1963) to analyze the flow of international trade. At this time it has been applied to analyze and predict the flow of trade between two countries or the bilateral trade, bilateral effect, liberalization effect, and estimate the prosperity of trade effect. According to Appleyard and Field, gravity model is actually the macro model, because it is designed to analyze the volume of the composition in bilateral trade. (Kristjandottir, 2005)

In further progress, a new theory of trade according to Markusen (2002), there are geography areas and trade where this is included in the gravity model (Kristjandottir, 2005). In observe to the gravity model, according to Krugman (2006), many studies find that the gravity model estimating volume of trade between two countries with quite accurate.

According to the gravity model, the export of a country  $i$  to country  $j$  can be explained by economic size, population, geographic distance from a particular set of dummies that become characteristic of a particular flow. The basic model of gravity model for trade between countries ( $i$  and  $j$ ) ;

$$F_{ij} = G * (M_i * M_j / D_{ij}); i \neq j \dots \dots \dots (2.1)$$

Where:

$F_{ij}$  = Flow of trade, export or import between the country  $i$  to country  $j$

$G$  = constant

$M_i$  and  $M_j$  = the size of an economy that is used by both countries

$D_{ij}$  = the distance between the two countries

Equality of the above suitable with the gravity model formulation of Newton's physics that is "the interaction between two objects is in proportion to its mass and proportionate inverted to the distance of each."

### 2.3.1. Distance

In gravity model, distance is a resistance factor and has a negative impact on volume of trade. The resistance factor of trade is cost. Three kinds of costs are associated with doing business at a distance: (i) physical shipping costs, (ii) time-related costs and (iii) costs of (cultural) unfamiliarity. Among these costs, shipping costs are obvious (Frankel 1997 quoted from Linnemann 1966).

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.

As the distance between countries increase, it will reduce trade. Logically, it is predicted that distance has negative relation with export activities. The positive sign of distance shows that the import of goods in a country is mostly influenced by certain country as the main exporter. So, although the distance is getting far it does not influence trade between countries. The positive relation of distance and trade is explained by Helpman and Krugman (1989). Krugman

(1991), in other models explained that the relation can also be negative as the geographic distance can influence volume of trade.

In this model, distance is multiplied by price of fuel in the world. It represents transportation cost. Transportation costs, or also defined as transaction costs across distance, play important role in international and interregional trade. In contrast to traditional trade theory and traditional urban economics, it is argued that distance matters. (Krugman, 2004:2)

### 2.3.2. Remoteness

In this research, the author adds remoteness which consider as multilateral resistance factors in bilateral trade flow. This equation of remoteness below is proposed by Head (2003)

$$R_i = 1 / (\Sigma(GDP_j / Dist_{ij})) \dots \dots \dots (2.2)$$

This variable tends to reflect the average distance of region i from all trading partners other than j. This result has been obtained from OLS as we cannot estimate the FEM for distance and dummy variables.

Remoteness can also evaluate the accessibility of a country to export source in other country. The lower the remoteness means the easier a country can access the export sources. (Gu, 2005:10)

The same as distance, remoteness also has important role in actual trade patterns. There is illustration the importance of using remoteness as the variables rather than only using distance as the proxy of costs in trade flow. For example, The trade between Australia and New Zealand with trade between Austria and Portugal. The distance between each pair's major cities is almost the same: Lisbon–Vienna and Auckland–Canberra both happen to be 1430 miles apart. The product of their GDP's, which reflects the size of economy of each country are also similar (Australia–New Zealand is 20% smaller). Result estimation shows that by omitting remoteness, the gravity equation would predict that Austria–Portugal trade would be slightly larger. But, in fact, in 1993 Australia–New Zealand trade was nine times greater than Austria–Portugal Trade. The example shows that remoteness is important. (Head, 2003:8)



## **2.4. Trade Barrier**

A trade barrier is a general term that describes any government policy or regulation that restricts international trade. The most of nations impose trade barrier to improve the national welfare and to protect their domestic industries. In general, the difference between international trade and domestic trade is the international trade is more costly. The reason is a border typically imposes additional costs such as tariffs and non tariff barriers (NTBs).

### **2.4.1 Tariff**

Salvatore (2007:248) describes if the most important type of trade restriction has historically been the tariff. A tariff is a tax or duty levied on the traded commodity as it crosses a national boundary. An import tariff is a duty on the imported commodity, while an export tariff is a duty on the exported commodity. Developing nations rely heavily on export tariffs to raise revenues because of their ease of collection. On the other hand, industrial countries invariably impose tariffs or other trade restrictions to protect some (usually labor-intensive) industry, while using mostly income taxes to raise revenues.

Tariffs can be ad valorem, specific, or compound. The ad valorem tariff is expressed as a fixed percentage of the value of the traded commodity. The specific tariff is expressed as a fixed sum per physical unit of the traded commodity. A compound tariff is a combination of an ad valorem and a specific tariff.

### **2.4.2 Non- tariff barriers**

The definition of non tariff barriers is any governmental device or practice other than a tariff which directly impedes the entry of imports, or exit of exports, and which discriminates against imports or exports; that is, which does not apply with equal force on domestic production or distribution.( Jimmye S. Hilman “Nontariff Barriers : Major problem in Agricultural Trade”.1999).

#### 2.4.2.1 A classification of NTBs (Non Tariff Barriers)

The Non Tariff Barriers appear in various forms. The following is kind of it:

a. Quota

A quota is the most important nontariff trade barrier. It is a direct quantitative restriction on the amount of a commodity allowed to be imported or exported. (Salvatore, 2007; 288)

b. Voluntary Export Restriction

In this concept, importing countries induces other countries to reduce their export “voluntarily”. The reason is the importing products will threaten domestic products and domestic economy. (Salvatore, 2007; 291)

c. Health and safety requirement

It is the supreme right of every country to have health standards to protect their citizens. Again, quite often the standards set by developed countries are very high so that they cannot be fulfilled by most developing countries.

d. Red tape barriers (Krugman & Obstfeld, 2006: 194)

Sometimes a government wants to restrict imports without doing so formally. Fortunately or unfortunately, it is easy to twist normal health, safety, and customs procedures so as to place substantial obstacles in the way of trade. In international trade, certain documents are needed like letter of credit, health certificate, industrial standard, etc. However, administrative requirements could be made excessive by intention with the objective of obstructing imports.

e. Technical barrier in Industry standard

Countries have industrial standards; however, developed countries have in general higher industrial standards that it might obstruct import from developing countries. To prevent industrial standards to becoming trade

barriers, the WTO has adopted the Agreement on Technical Barriers to Trade.

f. Export Tax in Developing countries

The goal is to prevent or to limit exports of certain products. Examples from Indonesia are logs and rattan, and CPO (crude palm oil). For many years Indonesia has an oligopolistic position in the world market for logs and raw rattan. By exporting processed wood and final wood and rattan products, Indonesia can gain value added.

g. Local Content requirements (Krugman & Obstfeld, 2007: 193-194)

The goal is to promote industrialization and to increase value added in developing countries.

h. Commercial names

For the example was the import of scallops from Canada and Chile. The French name is “*coquilles St. Jacques*”. Canada and Chile must use the name “*petoncle*”, which is of lower quality. And though they also won their case in court, but they lost the market. The French argued that their action was meant to protect French consumers, because they are used to eat the “*coquilles St. Jacques*”, and also to protect French culture and language, which are already ages old.

## 2.5. Previous Research

### 2.5.1 Empirical Research of Export determinant factor

#### 2.5.1.1 Khumar and Dhawan (1991)

Khumar and Dhawan have finished the research about the impacts of exchange rate fluctuation for Pakistan trade into United Kingdom, West Germany, Japan and Unites States period 1974 to 1985.

In this research, the estimation was done separately for each trade partner country, to find out the effect of exchange rate fluctuation and the other determinant export on the export demand to each trade partner countries. The results of the research are:

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- a. The fluctuation of bilateral exchange rate is influenced the export volume of Pakistan to its trade partner countries significantly except Pakistan's export into United Kingdom;
- b. The fluctuation of real exchange rate was more affected sharply rather than nominal exchange rate.

#### 2.5.1.2 Gunawardana (2005)

Gunawardana have finished the research about the determinant of and the impact of the Asian currency crisis and Australian exports to nine East Asian countries period 1979-1998. Gunawardana used gravity model approach to estimate his research. The results of the research are:

- a. The real GDP and real per capita GDP of East Asian Countries have a positive and significant impact on Australia's export to East Asian Countries.
- b. Australia's exports are affected negatively and significantly by real exchange depreciation of East Asian Countries.
- c. Tariff rates of East Asian Countries also affect Australia's exports to these countries negatively and significantly.
- d. Australia's exports to East Asian Countries are significantly higher since these countries gained APEC membership.

#### 2.5.1.3 Gu (2005)

He has written the research about the reason's behinds China's fast export growth. He used Gravity Model approach. This research used panel data from thirty (30) of OECD countries and seven (7) years of period 1999-2005.

In this research, Gu used GDP per capita, population, physical distance, remoteness, and trade cooperation variable to explore the reason's behinds China's fast export growth. The model that has been used by Gu is;

$$\text{Log}(E_{ijt}) = \alpha + \beta_1 \cdot \text{log}(PGDP_{it}) + \beta_2 \cdot \text{log}(PGDP_{jt}) + \beta_3 \cdot \text{log}(POP_{jt}) + \beta_4 \cdot \text{log}(DIST_{ij}) + \beta_5 \cdot \text{log}(REMOTENESS_{jt}) + \beta_6 \cdot TC_{ij} + \epsilon_{jt} \dots\dots\dots(2.1)$$

Where:

- PDGPit is the GDP per capita of country i in year t
- POPjt is the population of country j in year t
- DISTij is the physical distance between country i (China) and country j
- REMOTENESSjt is the remoteness of the country j in year t
- TCij is the dummy variable of trade cooperation between country i and country j.

The results of the research are: physical distance plays an important role in impacting China's export. Meanwhile the remoteness has a significant effect on China's exports. Third, the trade cooperation relationship can directly cause an increase in the export value to the destination country. And the last, the impact of exchange rate variation is limited and different from country to country.

#### 2.5.1.4. Chaturvedi and Nagpal (2003)

The author emphasizes the importance of transparency and government participation in implementation of eco-labeling and Technical Barriers to Trade (TBT) agreement. Transparency may include equivalency, mutual recognition, dispute settlement and technical assistance.

They also highlight the weakness assistance in India's ecolabelling program. The program has not focus on technical assistance to help develop and improve certification procedures and also not focus on capacity building in the private sector.

India also faces a number of institutional constraints in meeting the international standards. Besides, the lack of timely and precise information about these standards is also a great obstacle for exports.

The creation of standardization bodies or the expansion of existing bodies in developing countries and steps contributing to their international recognition are of key importance. Improvements in environmental infrastructure play an important role in reducing the costs of compliance.

Their conclusion is in India, many governments, trade, regulatory and research entities have some responsibility for addressing such measures, but there is no one entity directing and coordinating the overall government effort.



Table 2.1  
Previous Research

No	Author	Title	Analysis Method	Result
1.	Khumar & Dhawan (199)	<i>“Exchange Rate Volatility and Pakistan’s Export to The Developed World, 1974-1985”</i>		<p>Conclusion of Khumar and Dhawan research that are:</p> <ul style="list-style-type: none"> <li>• Model specification using log linear generates better result rather than linear model.</li> <li>• There is significant result of the fluctuation of bilateral exchange rate which shows that fluctuation of bilateral exchange influence export volume to all partner countries except United Kingdom.</li> <li>• Fluctuation of real exchange rate is more significant compare to nominal exchange rate.</li> </ul>
2.	Gunawardana (2005)	<i>The impact of the Asian currency crisis and Australian exports to nine East Asian countries</i>	Pooled Data Estimation	<p>The results of the research are:</p> <ul style="list-style-type: none"> <li>• The real GDP and real per capita GDP of East Asian Countries have a positive and significant impact on Australia’s export to East Asian Countries.</li> <li>• Australia’s exports are affected negatively and significantly by real exchange depreciation of East Asian Countries.</li> <li>• Tariff rates of East Asian Countries also affect Australia’s exports to these countries negatively and significantly.</li> <li>• Australia’s exports to East Asian Countries are significantly higher since these countries gained APEC membership.</li> </ul>
3.	Gu Jiangying	<i>A Gravity Analysis of China’s Export Gro</i>	Simultaneous Model	<ul style="list-style-type: none"> <li>• Gu (2005) used Gravity Model approach. This research used panel data from thirty (30) of OECD countries and seven (7) years of period 1999-2005.</li> <li>• In this research, Jiangying put gdp, population, physical distance, remoteness, trade cooperation, and exchange rate to explore the reason’s behinds China’s fast export growth.</li> </ul>

Table 2.2  
Previous Research on Implementation of Standards

No	Author	Title	Analysis Method	Result
1	Chaturyedi and Nagpal	<i>“WTO and Product Related Environmental Standards Emerging Issues and Policy Options”</i>		<p>Conclusion of Chaturyedi and Nagpal research</p> <ul style="list-style-type: none"> <li>• The author emphasizes the importance of transparency and government participation in implementation of eco-labeling and Technical Barriers to Trade (TBT) agreement. Transparency may include equivalency, mutual recognition, dispute settlement and technical assistance.</li> <li>• They also highlight the weakness assistance in India’s ecolabelling program. The program has to focus on technical assistance to help develop and improve certification procedures and also important to focus on capacity building in the private sector.</li> <li>• India also facing a number of institutional constraints in meeting the international standards. Besides, the lack of timely and precise information about these standards is also a great obstacle for exports.</li> <li>• Improvements in environmental infrastructure play an important role in reducing the costs of compliance. In India, many governments, trade, regulatory and research entities have some responsibility for addressing such measures, but there is no one entity directing and coordinating the overall government effort.</li> </ul>



## CHAPTER 3

### INDONESIA'S FURNITURE PROFILE

#### 3.1 Overview of Indonesia's Furniture Profile

##### 3.1.1 Furniture Contribution in Indonesia Economic

Based on *Industri Indonesia, Catatan 2007*- Ministry of Industry of The Republic of Indonesia, industry and economic performance up to the third quarter of 2007 is expected to record a growth of around 6.3%. Branches of industry that high contributes towards the establishment of GDP industry of non-oil and gas processing is a branch of food, beverages and tobacco (29.43%); transport equipment industry, machinery and equipment (29.15%); fertilizer industry, chemicals and rubber goods (12.49%); and textile industry, leather goods and footwear (10.74%). Other branches have a role in the bottom 10% of goods, including wooden and forest products, which only give the 6.02%.

Table 3.1: The Role of Each Industrial Sector to GDP Industry

No.	Branch of Industry	%		
		2005	2006	Third Quarter of 2007
1	Food, Beverages, and Tobacco	28.18	27.95	29.43
2	Textiles, Leather Goods, and Footwear	12.20	11.91	10.74
3	<b>Wooden Goods and Forestry Products</b>	<b>5.55</b>	<b>5.82</b>	<b>6.02</b>
4	Paper and Printed Matter	5.41	5.24	5.10
5	Fertilizer, Chemicals, and Rubber goods	12.26	12.56	12.49
6	Cement and Non-Extractive Metal	3.89	3.80	3.67
7	Basic Metals, Iron and Steel	2.88	2.69	2.53
8	Transport Equipment, Machinery and Equipment	28.72	29.09	29.15
	Other Goods	0.92	0.94	0.86
	<b>TOTAL OF INDUSTRY</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>

Source: BPS, processed by Ministry of Industry

Furniture sector has quite important role in the Indonesian economy. Based on Central Statistic Bureau, in 2004, its share was about 2.37% of total Indonesia's export or 2.98% of Indonesia's non oil and gas export. Meanwhile, in

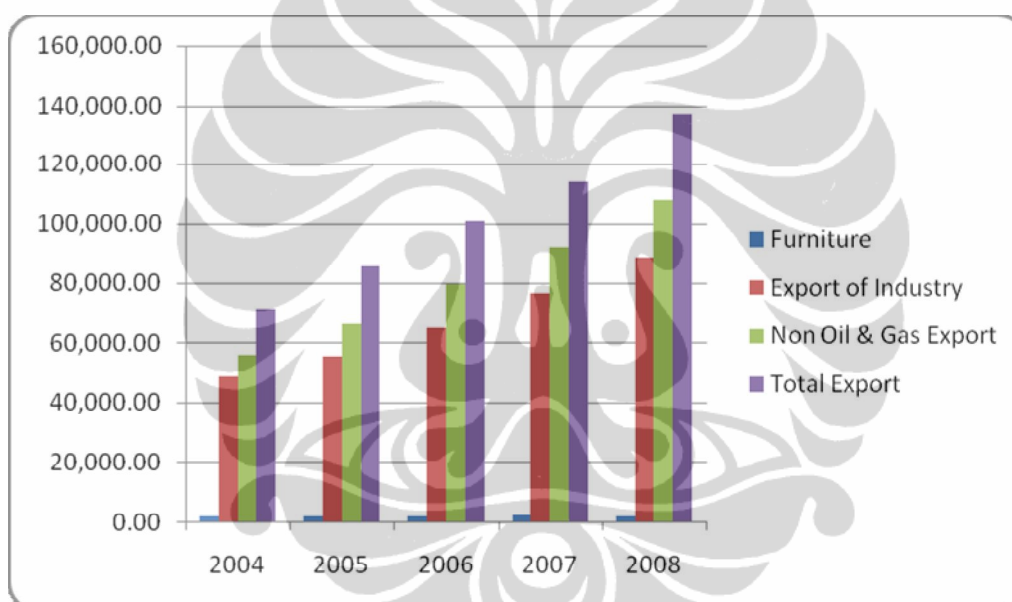
2008 its share decreased 0.97% became 1.40% of total Indonesia's export or 1.78% of Indonesia's non oil and gas export. (See table 3.2 and figure 1 below).

Table 3.2: The Role of Furniture in the Indonesia's Export 2004-2008

No.	Sector	Value (Million US\$)				
		2004	2005	2006	2007	2008
1	Furniture	1,669.33	1,856.06	1,875.99	1,937.97	1,925.94
2	Export of Industry	48,660.20	55,593.70	65,023.90	76,460.80	88,393.50
3	Non Oil & Gas Export	55,939.20	66,428.30	79,589.10	92,012.40	107,894.20
4	Total Export	71,584.60	85,660.00	100,798.50	114,100.90	137,020.40

Source: Ministry of Trade, processed

Figure 3.1. The Role of Furniture in the Indonesia's Export



### 3.1.2 Indonesian Furniture Industry

From production side, furniture production in 2004 achieved 1.93 million tons per year and decreased 4.50% became 1.85 million tons per year in 2007. Furthermore, in 2008 its production has reached 1.82 million tons or 88.39% from target that determined.

The furniture manufacturing industry is a very important sector which is potential to growth Indonesian economic contribution. The furniture industry, especially from installed capacity side, sector in 2004 reached 2.69 million tons per years and increased 3.04% became 2.77 million tons per year in 2007. In

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addition, in 2008 its installed capacity has achieved 2.71 million tons per year or 90.75% from target that determined.

From capacity utilization side, in 2004 achieved 71.23% and decreased 4.13% became 67.10% in 2007. Furthermore, in 2008, furniture capacity utilization has reached 67.10% from 100%.

In 2004, total of unit business in furniture reached 1,474 units and increased 6.10% became 1,564 units in 2007. In 2008, total of unit business in this sector decreased 3.96% compare to previous year that only achieved 1,502 units. Meanwhile, in 2004, total of labor who involved in furniture industry reached 909,969 persons and increased 12.43% became 1.02 million persons. In addition, total of labor in 2008 achieved 1 million persons or 97.08% from target that determined (1.03 million persons).

Meanwhile, the realization of the domestic investment for processing wood and wood up to September 2007 reached a just 19.8 billion Rupiah far from achieving the year 2006, amounting to 709 billion rupiah. While the realization of foreign direct investment for the same industry until September 2007 reached 125.5 million US\$ or 213.07% increase compared to the year 2006, which only reached 58.9 million US\$.

Table 3.3: The Development of the Investment Realization in Wood and Wood Products Industry, 2005-2007

No.	Description	Domestic Investment		
		2005	2006	2007*
1	The number of permanent business units issued	9	9	2
2	Realization value of investment (Billions Rp)	198.8	709.0	19.8
		FDI		
		2005	2006	2007*
1	The number of permanent business units issued	19	18	13
2	Realization value of investment (Millions US\$)	91.0	58.9	125.5

Source: BKPM, processed by Ministry of Industry

Note : \* until 30th of September 2007

In 2004, production value of furniture industry reached Rp.16.36 billion and smoothly decreased 1.59% into Rp.16.09 billion in 2007. In 2008, production value achieved Rp.16.10 billion or 95.24% from target that determined (Rp.16.90 billion).

### 3.1.3 Indonesia's Export of Furniture Products

As one of ten main commodities for Indonesia export, furniture is expected to give significant contribution for total Indonesia export. Based on the data from the WITS, Indonesia's furniture export reached 1,699.33 million US\$ in 2004 and increased 15.37% into 1,925.94 million US\$ in 2008. Meanwhile, in the same year, volume of Indonesia furniture export is 813,794.22 metric tons or decreased 1.60% from 2004 that achieved 827,029.58 metric tons.

Table 3.4: Indonesia Furniture Export  
(Million US\$ & Metric Tons)

Commodity SITC 821	EXPORT				
	2004	2005	2006	2007	2008
Value	1,669.33	1,856.06	1,875.99	1,937.97	1,925.94
Quantity	827,029.58	865,731.19	861,961.20	879,501.89	813,794.22

Source : WITS, processed

Based on value in 2003 to 2008, the main destination countries of Indonesia's export are United States with share in 2008 29.69%, followed by Japan (11.95%), Netherlands (7.32%), UK (5.90%), France (5.78%) and Germany (5.33%). However, exports of furniture to EU countries are increasing faster than others. In 2008, export to EU accounted for 35.71% of all exports by value.

From 2003 to 2008, the trend of US's import from Indonesia is 5.26%, Japan 4.05%, Netherlands 5.09%, UK 4.45%, and France 2.50%. Trend of Indonesia's furniture export 2003 to 2008 is 4.32%. (See table 3.5 on appendix)

Figure 3.2: Indonesia's Furniture (SITC 821) Export Realization, 2003 – 2008

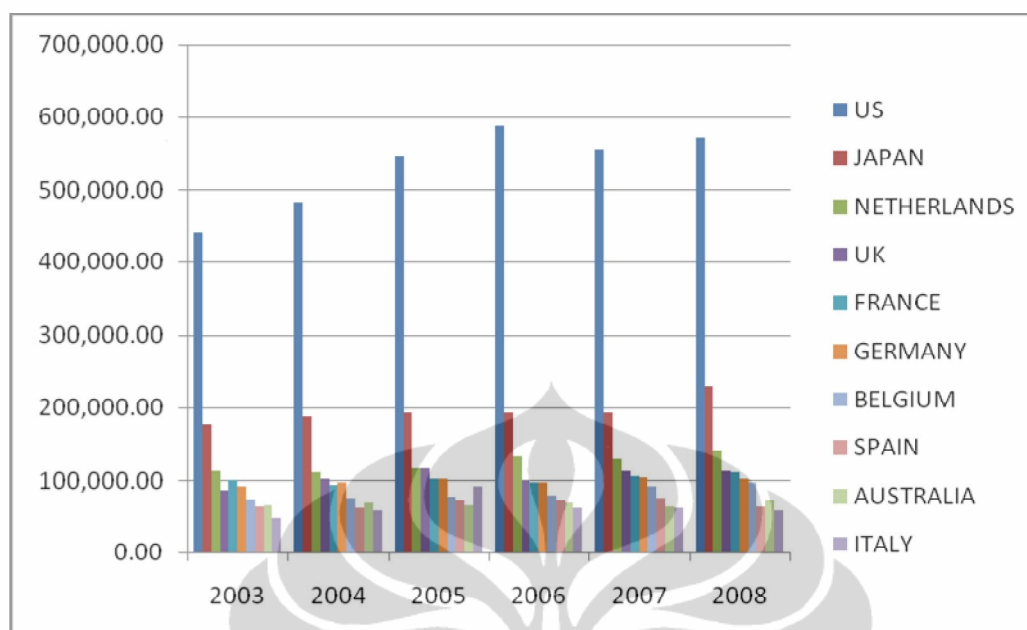


Table 3.6 below illustrates that the export of wood furniture, which is the dominant export product of Indonesia, growing at 6.9 percent annually, while products such as chairs that are not defined, a drop in the major export activities. The other main products which showed positive growth for the period 2002-07 is for bedroom furniture, furniture of other materials, and chairs made of rattan, osier, and bamboo.

Table 3.6: The Main Indonesia's Furniture Export, Average 2002-2007

No.	Comodities	Value (\$ millions)		Average growth 02-07 (%)	Share the main product of all, average '02-07
		2002	2007		
	<b>All furniture</b>	1,419.90	1,839.30	5.30	100.00
	<b>The main furniture:</b>	1,323.50	1,602.00	4.30	89.09
1	Wooden Furniture	630.50	866.00	6.90	45.00
2	Chair, others	304.90	146.00	-12.00	14.80
3	Rattan, Osier and Bamboo Chair	182.80	222.00	4.20	12.20
4	Bedroom Furniture, wooden	110.90	184.00	9.30	9.00
5	Furniture from others materials	94.50	184.00	12.60	8.40

Source: Global Trade; Laporan Daya Saing Ekspor 2008 -USAID, Senada, processed

Table 3.7 (in appendix) provides a more detailed explanation regarding the export competition of Indonesian furniture products. Although the Indonesian products appear to compete in terms of price and comparative advantage (RCA

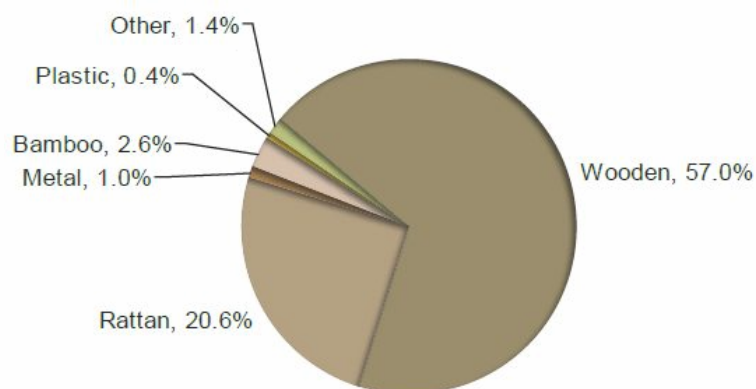
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index far above one, and have increased over the period 2002-07), on the global market share does not increase much during the last five years. This is different with the performance of other countries, especially China and India. Although the RCA index for furniture products from China are lower than India, but China is able to increase its export as much as four times between 2000 and 2007. India increases its export furniture of nine times in the same period. It is important to note that India has the same comparative advantage with Indonesia to the same product group.

Based on the above explanation, we can argue that a high of Indonesia's unit price may actually reflect export of furniture products with high quality (high-end product) from Indonesia, and the high price may reflect the higher product quality. That could mean that Indonesia furniture export is different and serve a particular niche market. The other aspect of the negative effect of the Indonesia furniture is internal competitiveness. For example, the Indonesian product has a high RCA index, but rather has a low number of growths relations with the export share. Previous research and other observations indicate that additional issues may partake, including illegal logging that affect the flow of raw materials to this sector.

Despite the wide range of forest products available locally and the recent emergence of new materials for furniture making, most of Indonesian furniture exports are of the wooden furniture type. Indonesian furniture export by raw material type can be seen in the pie chart below.

Figure 3.3: Exports by Type of Raw Material 2007



Source : ASMINDO, Indonesian Furniture Association

Based on BPS's data, the types of Indonesian furniture products that are exported and their export destination countries are as follows (sorted by 2007's highest values):

1. Other wooden furniture of a kind used in Offices, the main importer is U.S followed by Japan, France, U.K., and South Korea.
2. Wooden furniture of a kind used in the kitchen, the main importer is Japan followed by Spain, U.S, Denmark, and Singapore.
3. Other seats, with wooden frames of other than upholstered, the main importer is U.S. followed by U.K., Netherlands, Germany, and Belgium.
4. Wooden Furniture of a kind used in the bedroom year 2007, the main importer is U.S. followed by Japan, U.A.E, Canada, and Taiwan.
5. Other wooden furniture year 2007, the main importer is U.S. followed by Japan, France, Netherlands, and U.K.

#### **3.1.3.1. Major Exports by Province**

Based on BPS's data, in 2007 major export by province for each of the furniture types is as follows:

1. Wooden furniture of a kind used in the kitchen; the main supplier is D.K.I Jakarta followed by Central Java, South Java, North Sumatera, and Riau.
2. Wooden furniture of a kind used in the bedroom; the main supplier is D.K.I Jakarta followed by Central Java, South Java, North Sumatera, and Riau.
3. Other wooden furniture; the main supplier is Central Java followed by East Java, D.K.I. Jakarta, Riau, North Sumatera.
4. Other seat, with wooden frames of other than upholstered; the main supplier is Central Java followed by D.K.I Jakarta, East Java, Riau, and Bali.
5. Other wooden furniture of a kind used in offices; the main supplier is D.K.I Jakarta followed by Central Java, East Java, Bali, and Riau.

#### **3.1.4 Indonesia's Import Furniture Products**

The value of Indonesia's import of furniture product experienced sharply increasing from US\$. 26.69 million in 2003 to US\$.184.84 million in 2008 (or increase 692.52%). Meanwhile, in the same year, volume of Indonesia furniture

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import is 74,974.84 metric tons or increased 552.07% from 2003 that achieved 13,580.58 metric tons.

Table 3.13: Indonesia Furniture Import  
(Million US\$ & Metric Tons)

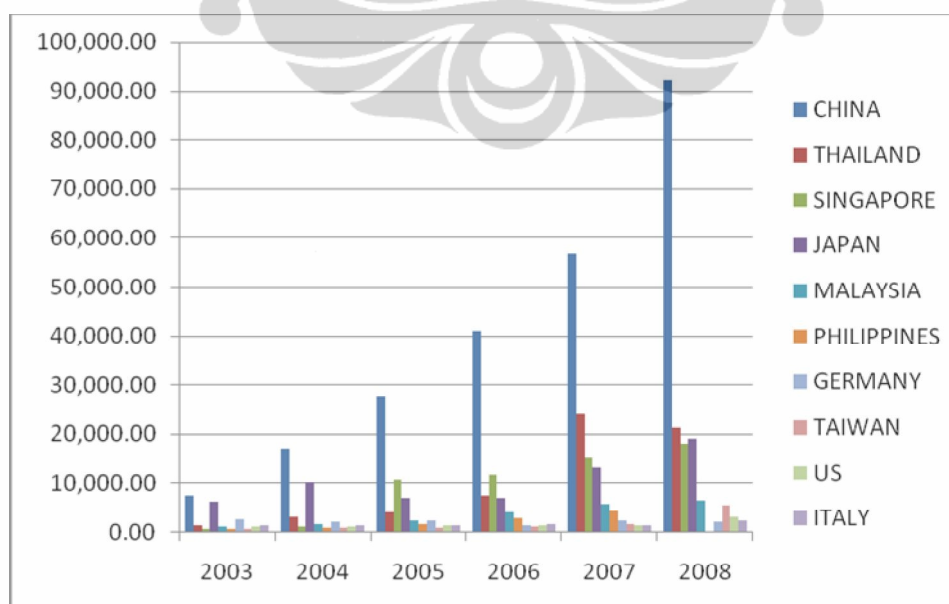
Commodity SITC 821	IMPORT				
	2004	2005	2006	2007	2008
Value	45.18	64.94	85.69	131.46	184.84
Quantity	28,824.73	47,235.81	55,994.87	72,091.93	74,974.84

Source : WITS, processed

Based on value in 2003 to 2008, the main supply of Indonesia's import is China with share in 2008 49.86%, followed by Thailand 11.62%, Singapore 9.89%, Japan 10.40%, and Malaysia 3.57%. However, import of furniture from EU countries is slower than others. In 2008, import from EU accounted for 2.42% of all import by value. The suppliers of Indonesia's import from EU are Germany and Italy.

From 2003 to 2008, the trend of China's export to Indonesia is 60.23%, Thailand 78.39%, Singapore 96.62%, Japan 19.74%, and Malaysia 42.99%. Trend of Indonesia's furniture import 2003 to 2008 is 45.63%. (Table 3.14 in appendix)

Figure 3.4: Indonesia's Furniture (SITC 821) Import Realization, 2003 – 2008



Source : WITS, processed.



## **3.2. Indonesia's Export Furniture Problems**

### **3.2.1. Raw Material**

The raw material problems is experienced by both wood and rattan furniture industry, which is the two largest component of Indonesia's furniture export. As one of the largest of the tropical forests in the world furniture industry is highly dependent on both of that result forest.

#### **3.2.1.1. Wood**

The last few years, wood furniture industry is experiencing some of the raw materials problem caused by the imbalance between supply and demand of rounded timber. This condition is mainly caused by cut down quotas and timber logging and trade of illegal wood. In 2001, production of natural forest reached 22 million m<sup>3</sup>. Since quotas set in 2002, cut down realization decreased from 12 million m<sup>3</sup> became 5.75 million m<sup>3</sup> in the period 2002-2004. In 2005, cut down quota increased 8.1 million m<sup>3</sup>. However, this figure far under the total demand for wood forestry sector that estimated more than 63.48 million m<sup>3</sup> of rounded timber per year (consisting of 18.87 million m<sup>3</sup> for the plywood industry, 22.09 million m<sup>3</sup> of cutting timber industry, wood panel and cutting wood - including 4.5 million m<sup>3</sup> for the furniture industry) and 22.52 million m<sup>3</sup> for the pulp and paper industry. (Newsletter commercial industry. "Furniture Industry facing Scarcity in Raw Material when the market is good." .March 30, 2005; page 15)

If drawn to the back, before the monetary crisis until the government forbade the export of rounded timber is preferably to produce plywood. Because of international protection accusation, this policy changes to the export tax of US\$.500-4,800 per m<sup>3</sup>. Post monetary crisis, on the IMF recommendations, the government find a way to add reserves to the lower income tax of export wood rounded to 10% -0% between the years 2000-2003. (Simangunsong, op.cit.page 2) The changing direction of this policy is added with a timber world demand that increased continually makes logging companies prefer to export rather than sell the wood to the wood processing industry that encourage the exploitation of the forest.

Scarcity of raw materials is the heavy brunt of wooden furniture industry that in 2005 became U.S. \$. 1.34 billion or 75% of total exports of Indonesian furniture. This is because cut down quota also applies to production forests which are managed by PT. Perhutani. For the wood furniture industry that the majority is the Java island (Semarang, Jepara, Solo, Yogyakarta, and Surabaya) Perhutani wood is the main source of raw materials for export demand, especially teak. Teak wood that needed more than 2 million m<sup>3</sup>, or about half of the total furniture industry needs. Fell due to restrictions, the price of teak increase of 25% within six months, from Rp.8 juta/m<sup>3</sup> become Rp.10 juta/m<sup>3</sup> at the end of 2003. ([www.sinarharapan .co.id/ekonomi/industry/2004/0128/ind.1.html](http://www.sinarharapan.co.id/ekonomi/industry/2004/0128/ind.1.html), accessed **3 March 2007**). Instead from Perhutani, a small supply of public teak forest came from Java outside, such as Sulawesi, West Nusa Tenggara and Lampung. Meanwhile its type cannot meet the grade "A" quality production as generated teak of Java native that its quality is recognized by worldwide. (Search: ASMINDO. "Ulasan Tentang Industri Furniture Indonesia." Paper Presentation, 17 October 2006)

The crisis also caused by the timber activities of a speed far exceeding the speed of forest growth. Take an average of 7-10 years until the trees reach the ripe age. (Ibid: ASMINDO). As a result, it is occurred the supply difficulties of old wood that has higher quality than the young wood. In addition to lead increasing of timber prices, raw material scarcity and government efforts to combat illegal logging and smuggling of timber makes the procurement of materials prone to bureaucratic procedures and illegal fees. (Documents that are required Certificate of Origin (Surat Keterangan Asal Usul -SKAU) that apply to the forest people and Certificate of Legality Forest (Surat Keterangan Sahnya Hasil Hutan-SKSHH) for the natural forest harvest and forest product document (Dokumen Hasil Hutan-DHH). The documents contain information about the origin , type, amount, and the volume of timber that will be used-ASMINDO). ASMINDO's data mentioned that due to the crisis of wood, the furniture must spend up to an additional 10% of the price of wood. This by itself cause the increase in production costs because the 55% of the cost covering the raw material.

Until now the government is still incentive prosecuting cases of illegal logging and timber trade. The high timber demand from China is believed by various parties contributes the logging and illegal timber trading from Indonesia, especially in border areas such as Kalimantan and Papua. According to TREATI, in 2004, 70% of China's rounded timber was imported from Indonesia and Malaysia (each of 31.7 million m<sup>3</sup> and 16.7 million m<sup>3</sup>). China's consumption of wood rounded grows an average of 10 million m<sup>3</sup> per year, with total demand reached 330-340 million m<sup>3</sup> in 2005. This figure is estimated to be 370 million m<sup>3</sup> while the Chinese government set a cut down quota in the country of 250 million m<sup>3</sup>. Difference the supply about 120 million m<sup>3</sup> suspected obtained illegally.

#### **3.2.1.2. Rattan**

For raw material of rattan, the main problem related to governance issues of rattan trade and smuggling which triggered by domestic supply excess. Indonesia is the largest rattan producer in the world, namely to reach 85% of the total world supply of the production capacity of 600,000 tons per year. However, according to ASMINDO new furniture industry can absorb between 120,000-130,000 tons per year or about 20%. This is caused by the rattan furniture industry tends to utilize certain types of rattan that are usually used as a raw material, while the farmers in meeting the producers needs cannot select the required cane industry. (ASMINDO,op.cit). So far the furniture industry just can take advantage of 50 species from around 250 species of the Indonesian rattan.

This excess supply caused the declining of rattan price that worrying the businessmen and rattan farmers. They feel this is as a result of export restrictions derived natural rattan and a half so in effect since May 2004 through SK Menperindag No.355. (Larangan Ekspor Rotan Akan Dicabut, Bisnis Online Harian Indonesia, www.bisnis.com, 17 Feb 2005, accessed July 2nd 2009) This policy is intended to overcome the shortage of raw material rattan furniture industry by the government that in 2004 targeted reach 30%. The government at that time did not apply the exception to the prohibition to export certain types of rattan because the exception will increase smuggling risk through falsification of

export documents and the type of specifications by exporters who violate the rules. Moreover, in the officials understanding of the types of rattan are still considered minimal.

### 3.2.1.3. **Banking**

Banking became one of the remarkable problems for the business due to the high interest rate loans. To press the inflation rate due to fuel price increases that occurred twice in 2005 (March and October) and the weakening of rupiah exchange rate, interest rates SBI increased from 11% to 12.5%. This is causing loan interest rates ranging 17%-18% ([www.pikiranrakyat.com/cetak/2005/1105/09/0101.htm](http://www.pikiranrakyat.com/cetak/2005/1105/09/0101.htm), accessible July 3rd 2009; Kondisi Perekonomian Indonesia Risaukan Dunia Usaha). This condition is very burdensome production sector because the company is not able to make loans to develop its businesses, especially the small-middle scale industry such as furniture.

Furniture industry is also affected by the bank perception that rates forestry sector as a source of sector policy and it identical with the credit problems (non performing loans / NPL) so that high-risk for banks. (ASMINDO, op.cit). The reality is furniture industry still very potential because its foreign exchange contribution increased. Furniture industry is also included in the ten industry national priorities that are to be developed. So the bank should not generalizing industry sector which has a risk of NPL and which does not.

### 3.3. **The Competitive Advantage of Indonesian Furniture in the World**

In today's age of mass-produced, high-volume, low-priced furniture, one must maintain a certain edge in order to survive the cut-throat furniture market. China with its plentiful low cost labor and mass production capacity has emerged as a juggernaut of the mass-produced furniture industry. Indonesia's largest furniture import in fact comes from China. The nature of production in Indonesia itself lends some obstacle to competing in the low-cost mass-produced niche. In short, it is nearly impossible for Indonesian furniture makers to compete in the low-end rungs of the furniture business with the likes of China. Other Asian

furniture makers attempt to reproduce China's formula. European furniture makers on the other hand have the reputation as producers of very fine, high technology-processed products. This fact leaves very little room for Indonesian products to compete on an equal footing in the world stage.

Indonesian furniture makers are faced with a number of obstacles that prevent them from competing on an equal footing with furniture makers from other countries. First of all, despite the relatively abundant supply of wood materials, these are becoming harder and more expensive to obtain. Smuggling has been a problem, especially from Indonesian forests to competitor countries. On the other hand, high technology machines are expensive to obtain and most Indonesian furniture businesses simply can't afford to focus their production based on high-technology machines. In addition, labor costs are becoming more expensive in Indonesia. Indonesian laborers, with no intention of disrespect, are also rather unproductive when compared with laborers from other countries. Labor issues have also become more prominent nowadays in Indonesia with laborers demanding more benefits, sometimes by sacrificing productivity. In short, in economics terms, Indonesia no longer has a comparative advantage in furniture production. Therefore, Indonesian furniture producers need to rely on competitive advantage instead.

So one may ask what may that competitive advantage is. There is one aspect of the Indonesian furniture industry that is impossible to imitate by others: creativity born out of culture. Indonesian furniture can still compete relying on their ingenuity and uniqueness of design that are constantly updated. Take Jeparans for example. They have thrived as suppliers of high-end furniture worldwide, a niche unaffected by the influx of cheap mass-produced furniture. Even in the face of high-technology furniture machining, Jeparan design and ingenuity prospers. Take for example Jeparan products that are taken for export to Europe. Some of these products are taken through high-technology processing and re-sold under another name, typically European brands.

This competitive advantage has become the main selling point for Indonesian furniture abroad. One can easily observe that Indonesian furniture that is taken for exhibitions abroad are typically of the highly creative and unique

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ones. It is impossible to find cheap, mass-produced Indonesian furniture products abroad, simply because Indonesian mass-produced furniture cannot compete with similar products from more efficient furniture-producing countries (such as China).

### **3.4. The Role of Government**

Base on report of Trade Research and Development Agency (TREDA) Ministry of Trade 2008, the Indonesian Government is highly supportive of Indonesian furniture industry. For example, organizes trade exhibitions showcasing Indonesian furniture and other products, namely INACRAFT (Indonesian Craft Exhibition), TEI (Trade Expo Indonesia) and ICRA (The Indonesian Interior & Craft Exhibition). National Agency for Export Development (NAFED), a unit of Ministry of Trade, is the organizer of Trade Expo Indonesia in Jakarta, the largest export-oriented exhibition in Indonesia. In addition, NAFED and other government agencies regularly lead trade missions overseas, bringing many entrepreneurs and industrialists to attend world-class exhibitions, and also directs visiting dignitaries and foreign businessmen to qualified Indonesian companies.

Local governments are also directly involved in promoting their local industry. The local government of Jepara, for example, opens marketing office in the middle of Jakarta furniture district to connect Jeparan producers with consumers and exporters.

Government has set priorities of policies and commits resources to support the business communities. Among the priorities are development of creativity-based handicraft exports—including furniture—and the emphasis on the use of eco-friendly materials and the application of eco-labeling, as well as ensuring that the supply of those materials (wood, rattan, metal, etc.) is reliable. One strategic effort is better management of Indonesian forest. In addition to private companies, there are state-owned companies that directly own and managed forest areas. Not only these companies create a stability of supply, they also have a long-term strategic directive to invest and plant trees that are important to industries. The Government has declared that export of logs is prohibited. Joint operations

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Ministry of Forestry, National Police, Customs Office and other agencies have tried successfully to reduce illegal logging and smuggling of those woods.

Central and local governments cooperate with universities, practitioners, and community organizations to empower small-and-medium businesses and to encourage entrepreneurship. Those government agencies also try to increase production through human resources development and equipment modernization. Indonesian Export Training Center (IETC) provides trainings for would-be exporters.

On the marketing side, government put in place an initiative to utilize the Internet as an affordable, and yet effective marketing medium, to reach untapped market overseas. One example is online exhibition of Indonesian products at NAFED's virtual exhibition website at <http://www.nafedve.com>.

Unlike many other industries, the role of association is renowned. ASMINDO, as the association is called, is the umbrella organization for furniture producers of any materials (wood, rattan, MDF, etc.), big or small, export-oriented or domestic only. This decades-old organization is a regular participant in major exhibitions around the world, as well as organizer (or sponsor) for important furniture exhibitions in Indonesia. Within this association furniture businesses can exchange knowledge and support each other. Jeparan industry, for example, conduct annual competition to craft new, innovative furniture designs.

## CHAPTER 4

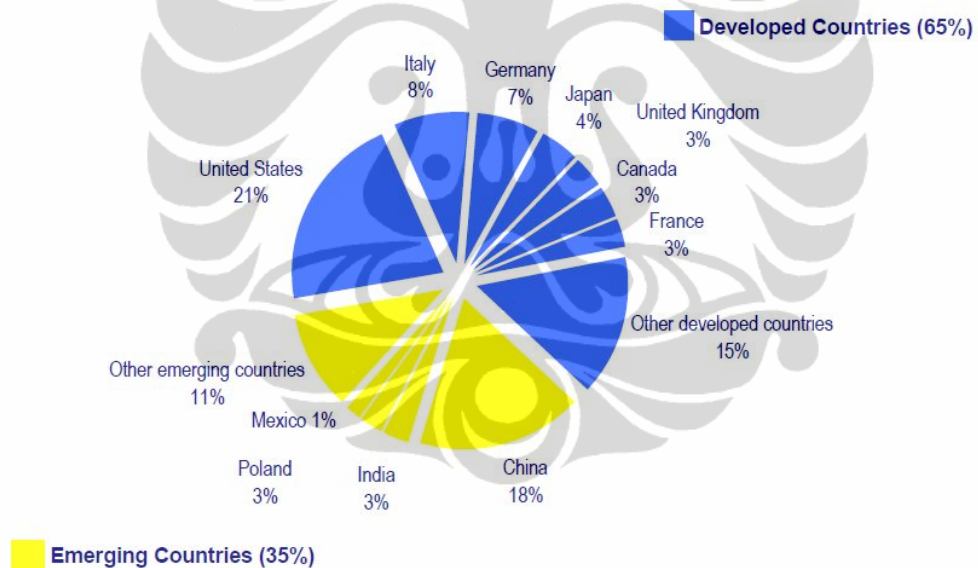
### THE WORLD'S AND EUROPEAN UNION'S FURNITURE PROFILE

#### 4.1. World's Furniture Profile

##### 4.1.1. World's Furniture Export and Import

According to the 8th edition of the “World Furniture Outlook 2008” issued December 2007 by CSIL, Centre for Industrial Studies, world production of furniture is worth about US\$ 307 billion. This estimate is based on CSIL processing of data from official sources, both national and international, that cover the 60 most important countries in the world, which are relevant as furniture manufacturers, traders, and consumers.

Figure 4.1: World Furniture Production 2007



Source: CSIL

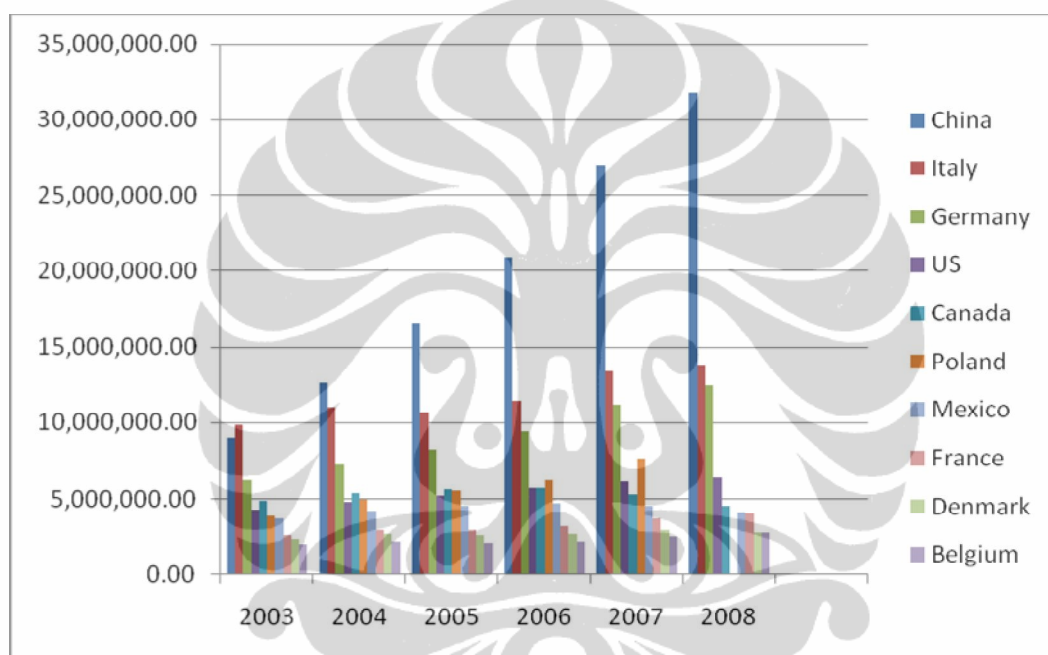
The seven major industrial economies (which are, in order of furniture production, the United States, Italy, Germany, Japan, the United Kingdom, Canada and France) together produce 50% in value of the world total. The furniture production of all developed countries combined covers 65% of the world total. Furniture production in emerging countries currently amounts to 35% of the world total in value. There are two countries (China and Poland) where



production is increasing rapidly thanks to investments in new plants especially designed and built for exports.

In 2003, value of the world's export furniture reached US\$. 86.01 billion and increased 52.69 % became US\$. 131.32 billion in 2008. The world main exporters of furniture are China with share 24.22%, followed by Italy (10.45%), Germany (9.52%), US (4.87%), Canada (4.87%), and Poland. (See table 4.1 on appendix)

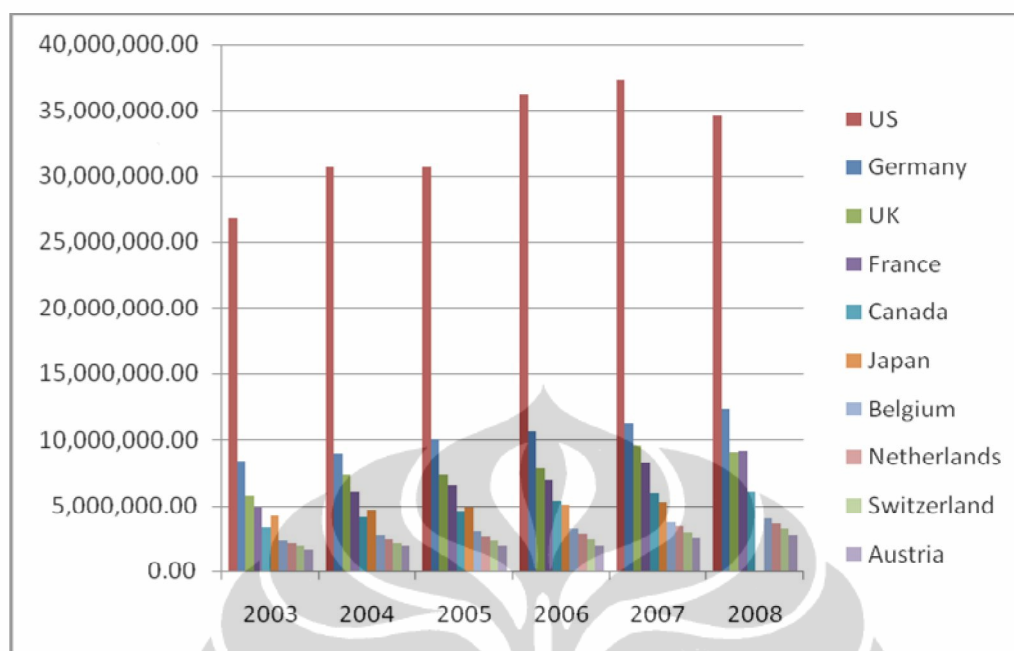
Figure 4.2: The World Major Exporters of Furniture, 2003-2008



Source: WITS, processed

In 2003, value of the world's import furniture reached US\$. 90.44 billion and increased 52.09 % became US\$. 138.45 billion in 2008. The world main importers of furniture are US with share 24.93%, followed by Germany (8.89%), UK (6.54%), France (6.61%), Canada (4.36%), and Japan. (See at table 4.2 on appendix)

Figure 4.3: The World Major Importers of Furniture, 2003-2008

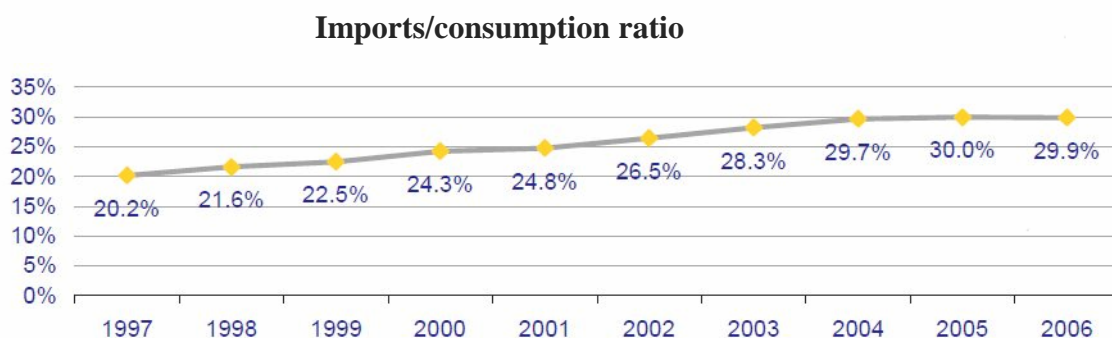


Source: WITS, processed

#### 4.1.2. The Opening of Furniture Markets Over The Past Ten Years

The most important structural phenomenon of the past decade was the increased degree of openness of the furniture markets, measured as the ratio between imports and consumption. This increase was particularly important in the United States, where the trade deficit for furniture was almost US\$ 22 billion in 2006, providing the most important stimulus to world furniture trade. Growth of the imports/consumption ratio has been rapid, reaching 25% in 2001 and almost 30% in 2006. It is now leveling off. CSIL forecasts that in the next few years it will remain at a level of about 30%.

Graphic 4.4: The opening of the world furniture markets, 1997 – 2006.

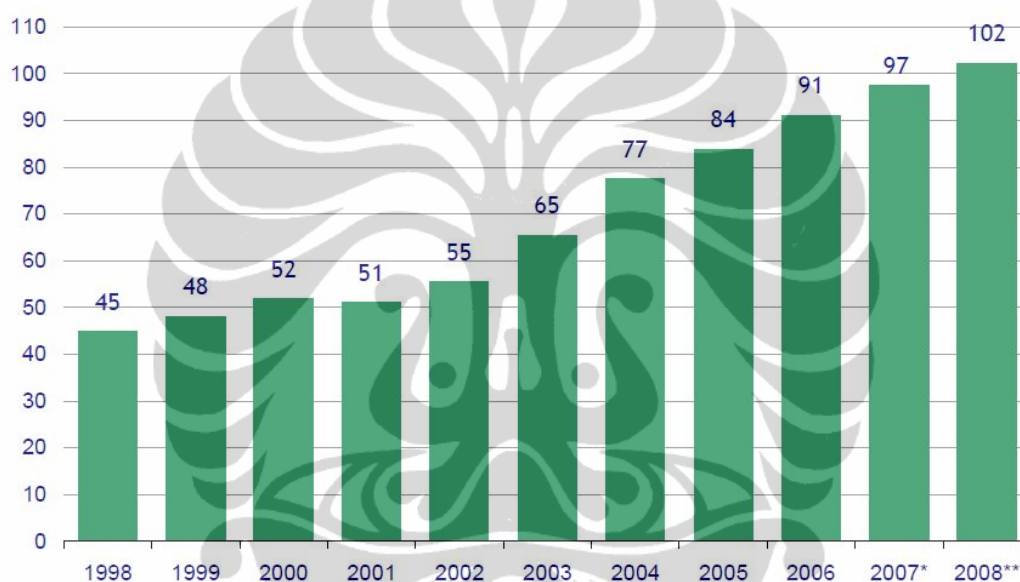


Source: CSIL from industry and official data

As a consequence of the opening of the main furniture markets in the last ten years, international trade of furniture has grown faster than furniture production and faster than international trade of manufactures. In 2007 and 2008 the world GDP will continue to grow at a fast pace and so will international trade of manufactures. World trade of furniture is expected to grow by 7% in 2007 and by 5% in 2008 in current dollars. World trade of furniture would then amount to US\$ 97 billion in 2007 and US\$ 102 billion in 2008.

Figure 4.5: World Trade of Furniture, 1998 - 2008

Current US\$ billion and annual percentage changes



Source: CSIL \* Preliminary \*\* Projected

## 4.2. The Furniture Industry in EU

### 4.2.1. Consumption

Based on CBI's Market Survey 2008, the EU is the largest furniture market in the world, followed closely by the NAFTA zone (€80 billion). Total EU27 furniture consumption was estimated at €81.7 billion in 2007. The average consumption per capita was € 165, with people in Austria, Luxembourg, the Scandinavian countries and the Netherlands spending most on furniture. Consumption increased strongly in 2006 and 2007. An average annual increase in consumption of 2% between 2003 and 2007, from €75.4 billion, includes falls in some of the more mature markets, but significant increases in some other

countries, particularly new Member States. A boom in new house building and demographic and lifestyle changes has stimulated furniture sales. Kitchen furniture sales have boomed as this has become a more focal part of the home, and changing use of the home, particularly the home office trend, has further stimulated sales. Media coverage of interior design and home improvement has also continued.

EU Furniture Market Study – Summary Document prepared by Strik Consulting, the following table outlines the position of solid-wood sector in the four major EU markets:

Table 4.3: The Countries The Biggest Consumption Value in EU Market 2008

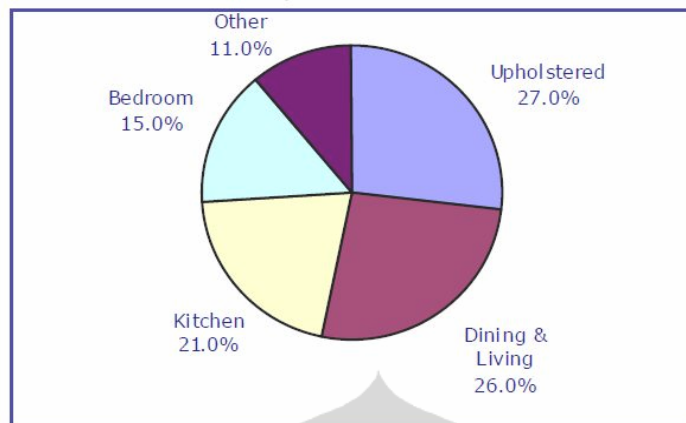
Country	UK	France	Italy	Germany
Consumption value of furniture containing solid wood in proportion to total national consumption	42% (€4,2 b.)	43.6% (€3,7 b.)	42.3% (€5,2 b.)	43% (€7,4 b.)
Consumption value of furniture containing solid wood in proportion to total EU market	5,7%	5,1%	7%	10%

Source: CSIL from industry and official data

Figure.4.6 below shows how the EU market valued at €81,707 million is broken down. Upholstered furniture was valued at €22,061 million; dining and living room furniture was €21,244 million; kitchen furniture was valued at €17,158 million; bedroom furniture was €12,256 million and other furniture was valued at €8,988 million. These figures hide wide differences between countries in terms of the relative size of each product group. See the individual country reports for further detail. Broadly speaking the markets for upholstered furniture and kitchen furniture have been increasing, while dining room furniture has been decreasing. Other newer items of multi-functional furniture are increasing rapidly. (CBI Market Survey: The Domestic Furniture Market in the EU,2008;8)

Figure 4.6: EU domestic furniture consumption by product group,

% value, 2007

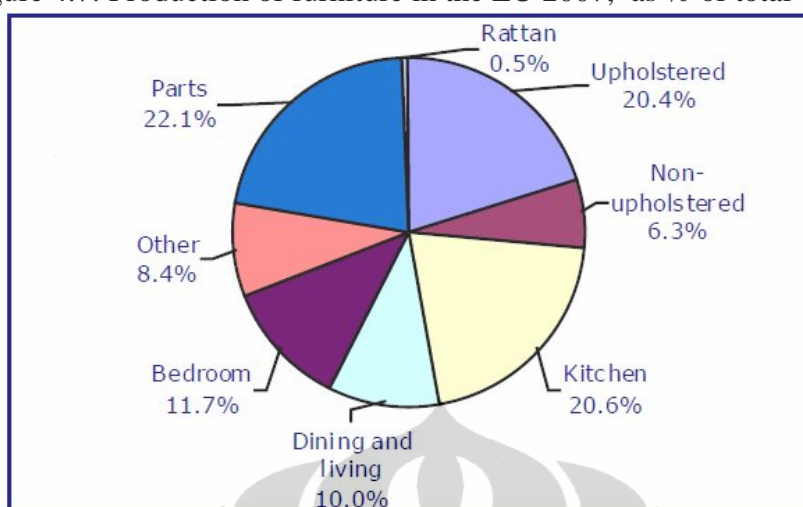


*Source: CBI Market Survey: The Domestic Furniture Market in the EU*

#### 4.2.2. Production

Meanwhile from production side, in 2007, the turnover of almost 100,000 EU27 furniture manufacturers was valued at €79.3 billion, of which an estimated 77% was wooden furniture. Between 2003 and 2007, EU furniture production increased by 3.1% per annum, with decreases in Portugal, and below average increases in the leading producing countries, but strong increases in some of the new Member States, such as Poland, Hungary and Romania. Much EU production has been outsourced to other Member States in Eastern Europe, as well as to other countries, particularly in Asia, but Europe still accounts for 40% of global production. Employment in the industry continues to fall, despite increases in production values, due to new technologies being introduced. Apart from furniture parts, kitchen and upholstered furniture were the largest product groups in terms of production. The leading producer countries were Italy, Germany, the UK and more recently Poland.

Figure 4.7: Production of furniture in the EU 2007, as % of total value



Source: CBI Market Survey: *The Domestic Furniture Market in the EU, 2008;16*

Table 4.4: EU production of domestic furniture, 2003-2007, €million

	2003 value	2005 value	2007 value	Average % change in value '03 - '07	Number of companies 2005	Number of employees 2005
<b>Total EU</b>	<b>70,093</b>	<b>71,638</b>	<b>79,299</b>	<b>3.1</b>	<b>98,250</b>	<b>903,000</b>
Italy	15,591	14,998	16,127	0.8	24,780	167,000
Germany	14,358	13,052	14,636	0.5	4,500	100,000
United Kingdom	7,465	8,643	9,321	5.7	5,600	85,000
Spain	6,592	6,485	7,474	3.2	11,250	97,000
France	6,691	6,794	7,069	1.4	7,000	60,000
Poland	2,690	3,731	4,617	14.4	8,500	73,500
Netherlands	2,013	1,995	2,308	3.4	2,800	18,500
Austria	1,762	1,939	2,130	4.9	750	6,500
Denmark	1,972	2,014	2,053	1.0	400	16,000
Belgium	1,855	1,892	2,005	1.9	1,150	11,000
Sweden	1,640	1,749	1,997	5.0	2,700	16,000
Czech Republic	1,209	1,215	1,305	1.9	4,150	38,650
Romania	772	1,121	1,301	13.9	3,250	70,000
Portugal	978	991	953	-0.6	2,000	28,000
Finland	881	875	952	2.0	1,500	8,600
Hungary	501	707	933	16.8	1,740	15,500
Slovenia	584	692	856	10.0	1,000	9,050
Greece	643	698	823	6.4	7,000	18,295
Slovakia	569	622	787	8.4	1,470	8,500
Lithuania	256	315	406	12.2	1,550	11,580
Ireland	338	335	360	1.6	700	5,000
Estonia	233	239	272	3.9	1,250	9,375
Bulgaria	180	206	265	10.2	1,800	14,000
Latvia	116	127	138	4.4	900	6,250
Luxembourg	88	89	92	1.1	60	400
Cyprus	76	79	83	2.2	250	1,800
Malta	40	35	36	-2.6	170	1,200

Source: CBI Market Survey: *The Domestic Furniture Market in the EU, 2008;15*

### 4.2.3. Import

According to CBI's Market Survey 2008, the EU accounts for over half of global domestic furniture imports, or 13.2 million tons valued at €36.1 billion. Germany was the largest EU importing country and represented 20% of all EU imports by value (19% by volume). Between 2003 and 2007, EU27 domestic furniture imports increased by an average 7.8% in value and 9.4% in volume. Of the leading countries, Austria, Germany, the Netherlands, the UK and Belgium were below the average, the rest were above.

In 2007, 69% of EU imports came from other EU countries. The leading supplier to the EU was Germany (13%), closely followed by Italy and Poland. Extra-EU (excluding developing) countries reduced their exports to the EU by an annual average of over 30% over the period and accounted for less than 5% of furniture supplies to the EU in 2007. This was partly explained by new countries joining the EU.

In 2007, EU furniture imports from developing countries were 4 million tones, worth €9.5 billion. Between 2003 and 2007, the share from developing countries in total EU furniture imports rose from 22 to 30% in volume and from 19 to 26% in value. Two thirds of rattan imports came from developing countries, and more than half of all non-upholstered seating. The significance of China continues to grow. In 2007, it accounted for €5 billion of imports (14% of all imports and 53% of developing country imports by value), up by an annual average of 29% since 2003. In volume terms, it represented 18% of all imports or 2.3 million tons (58% of developing country imports), up by an annual average of 27% since 2003. (See table 4.5 on appendix)

### 4.2.4. Export

Between 2003 and 2007, EU's exports increased by an annual average of 5.4% in value from €30.7 to €37.9 billion and by 7.6% in volume from 8.7 to 11.6 million tones. Much of this was due to significant increases particularly by Poland, Romania, Slovakia and Lithuania. Italy was the largest exporter, accounting for 22% of all EU exports. Three quarters of exports were intra-EU exports. Germany received 18% of these exports. The USA, Switzerland and

Russia were the largest recipients outside of the EU. *Furniture parts* were clearly the largest product group, representing €12.1 billion, or 32% of all exports by value in 2007, followed by other furniture exports. (See table 4.6 on appendix)

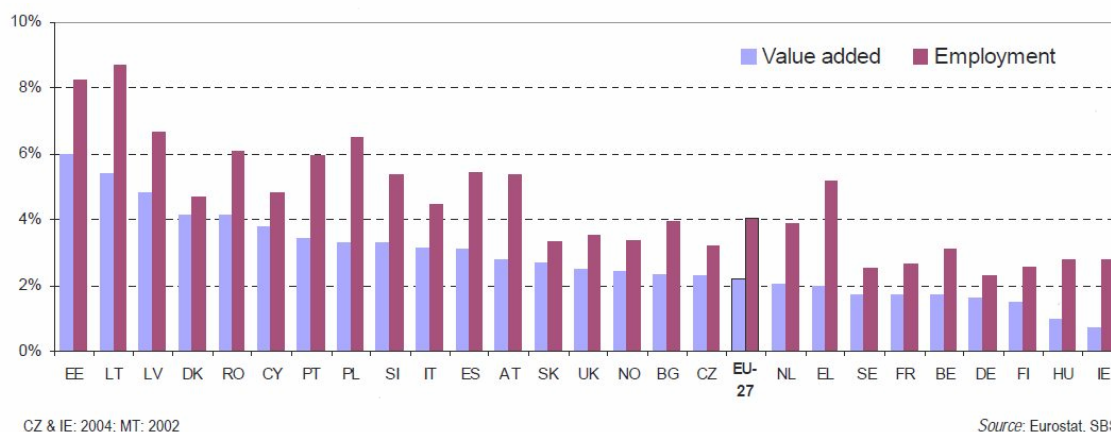
### 4.3. EU's Manufacture of Furniture

The Manufacture of furniture (NACE DN36.1) is largely based on wood products. According to PRODCOM data, in 2006, 63 % of the sales of Furniture in the EU-27 were those of furniture in which wood was used.

When looking at the subsector's main indicators, close to 150,000 enterprises were active in the Manufacture of furniture in the EU-27 in 2005. Employing 1.4 million persons, their total turnover was EUR 120 billion and they generated EUR 36 billion value added. Average personnel costs in the Manufacture of furniture were EUR 21,900, below the Manufacturing average of EUR 33,900. They were highest in Germany and lowest in Bulgaria.

In 2005, the Manufacture of furniture displayed lower profitability indicators than did Manufacturing as a whole. The EU-27 sector's apparent labor productivity was EUR 26,800, ranging from EUR 55,400 in Denmark to EUR 2,900 in Bulgaria. Wage adjusted labor productivity was 122 % on average in the EU-27, going from 178.6 % in Latvia to 81.4 % in Greece. At 8.0 % on average in the EU-27, the gross operating rate in the manufacture of Furniture ranged between 15.1 % in Latvia and 4.2 % in France.

Figure 4.8: Value added and employment of the Manufacture of furniture (NACE DN 36.1), 2005 share of Manufacturing (NACE D)





The shares in manufacturing total of value added and employment in the Manufacture of furniture are presented in Figure 9. While in the EU-27 those ratios were 2.2 % and 4.0 % respectively, the highest shares of value added were displayed by the three Baltic States Estonia (6.0 %), Lithuania (5.4 %) and Latvia (4.8 %) together with Denmark (4.1 %). Furniture also made the largest contribution to employment in Manufacturing in Lithuania (8.7 %), Estonia (8.2 %) and Latvia (6.7 %), together with Poland (6.5 %).

Employment size-class statistics are available for enterprises in 16 Member States which account for 81.6 % of persons employed in the Manufacture of furniture in the EU-27 in 2005. The labor-force distribution in furniture according to the enterprise size classes micro- (22.2%), small (24.8%), medium (26.2%) and large (26.7%) was fairly even, similar to that of the forest-based industries as a whole.

According to Prodcum data, the production of furniture in the EU-27 was slightly below its 2000 levels in 2007, appearing to have met rising competition on international markets. In 2007, the EU-27's total exports of Furniture products amounted to EUR 45.1 billion, of which 26 % were made extra-EU-27. Total imports were worth EUR 41.4 billion, of which 31 % came from extra- EU-27. From 2000 until 2007, extra-EU-27 exports of furniture grew at an average annual rate of 3 % while imports grew at 11 %. Thus, the extra-EU-27 trade in furniture went from a surplus of EUR 3.3 billion in 2000 to a EUR 1.2 billion deficit in 2007.

The main partner countries for exports in 2007 were the USA (20 % of total extra-EU-27), Switzerland (16 %), Russia (12 %) and Norway (10 %). For imports, the main partners were China (47 %), Indonesia (6 %), Viet-Nam (5 %) and Turkey (5 %).

The main contributors to EU-27 exports were Italy (31 %), Germany (18 %), France (7%) and Sweden (7%), while the main importing Member States were the United Kingdom (26 %), Germany (17 %), France (10 %) and Spain (7 %). (Eurostat, Statistics in Focus, 2008)

#### **4.4. Market Access Requirements**

As a manufacturer in a developing country preparing to access EU markets, exporters should be aware of the market access requirements of trading partners and the EU governments. Requirements are demanded through legislation and through labels, codes and management systems. These requirements are based on environmental, consumer health and safety and social concerns. Exporters need to comply with EU legislation and have to be aware of the additional non-legislative requirements that exporter's trading partners in the EU might request.

##### ***4.4.1. Quality Standards***

There are national quality standards for furniture, which should not be neglected. For example, durability standards have been established relating to the resistance of products – surface resistance to dry heat, cold liquids and contracting movements.

Within the furniture industry, buyers in most EU countries expect woods of an excellent quality e.g. kiln dried, free from pest, cracking, splitting and from full grown trees from well-managed forests. This will also depend on the furniture item and style, but this is of an increasing importance as e.g. many German consumers regret their cheap furniture purchase as these items have worn out fast, smelled strongly or deformed quickly, due to the use of woods from too young trees.

Quality, as well as social and environmental related market requirements are of growing importance in international trade and are often requested by European buyers through labels, codes of conduct and management systems.

##### ***4.4.2. Furniture Sizes***

The dimensions for domestic furniture vary considerably from country to country within the EU. In general, furniture sizes are smaller than those typically sold in the USA, where homes and individual rooms tend to be bigger than their European equivalents. Northern Europeans tend to be taller than southern Europeans and so require larger furniture.

Always check the exact requirements for the prospective market with their importers. They are able to specify the best dimensions for their customer target

group. The body sizes of Europeans are changing. This has become an issue for furniture manufacturers, particularly for beds, but also for chairs and tables to a lesser extent. People are generally becoming bigger and heavier. The issue of weight affects both the size and structure of seating.

#### **4.4.3. Packaging**

Deliveries from developing countries generally have a long distance to go before reaching their destinations; therefore it is very important that close attention is paid to seaworthy and solid packaging. Furniture items can easily be damaged in transit by dampness or mishandling and must therefore be packed carefully and securely.

- In the case of RTA furniture, the packaging is extremely important because large quantities are usually involved and buyers want to be able to transfer goods from the port of destination straight into the retail outlet. In most cases, there should be no need for buyers to repair or to change the factory packing.
- On the other hand, rattan furniture only needs to be wrapped in corrugated paper at the corners or in damp-proof wrapping. It is very important to be aware that requirements vary from country to country and to obtain information on the exact packaging needs directly from the prospective importer or buyer.

Apart from the safety aspects and protection against damage, the focus of packaging is definitely on environmentally friendly transport - as well as sales promotion packaging. This means, among other things, that it should be considered whether returnable systems could be used on a much greater scale than before.

#### **4.4.4. Labeling**

With regards to labels there are forest certification schemes of which the Forest Stewardship Council (FSC) is most widely recognized (<http://www.fsc.org>). However especially in southern EU countries, the Program for the Endorsement of Forest Certification (PEFC) is increasingly gaining support from the furniture industry (<http://www.pefc.org>). The PEFC was

specifically developed in 1999 for small forest owners in EU countries. Similar to the FSC, this scheme promotes forests to be managed sustainably by providing an assurance mechanism to buyers of wood and furniture. PEFC has 35 independent national forest certification systems in its membership.

#### **4.4.5. Trade Barriers**

##### **4.5.5.1 Tariff**

The global furniture trade is rather liberal and therefore most furniture items are free from duties. Import duty for kitchen furniture, and furniture parts is 2.7%, while it is 5.6% for seats and furniture of cane, osier or bamboo.

##### **4.4.5.2 Non Tariff Barriers of EU's Furniture**

Major importing regions and countries have set stringent standards and regulations to cover trade in quality standards, size, packaging, labeling and environmental requirements. Certain importers, such as the EU, are increasing the number of notifications of standards and technical regulations to the WTO.

Non-tariff barriers include laws, regulations, policies and practices that either protect domestically produced goods from the full impact of foreign competition, or artificially stimulate the exports of domestic products. (EU Furniture Market Study-USAID, 2006;12)

The global furniture trade is rather liberal and therefore most items are free from duties. Import duties are only payable on parts, seats/furniture of cane, osier, bamboo and some kitchen parts. Most of wood products from BiH are exempt from customs duties in the EU.(ibid)

NTBs can hinder developing countries' access to export markets, making it difficult for them to take advantage of the opportunities for economic development offered by trade. Predictability of market access is vital to developing country export interests. Many developed countries also have an interest in helping smooth trade, as they are increasingly reliant on imports. As a result, both parties want to have transparent rules that facilitate trade and bridge the capacity gaps that exist.

#### ***4.4.6. Health Standard***

For furniture products, the health standards required by EU regulations covering the use of harmful substances for human health, such as asbestos, cadmium, arsenic and creosote oil (both are usually used as a wood preservative) and the chemical substances that affect on ozone depletion. Because legalization always changed or updated periodically, it is important for non EU furniture manufacturers to review the regulation both the EU level and at national level. Some countries such as Germany, Netherlands and the UK have a national regulation that more strict about the use of harmful chemical substances.

Wood furniture products origin from developing countries generally does not use prohibited preservative substances (wood preservative used to prevent termites, fungi and other wood pests. Developing countries generally use tropical hard wood such as teak and mahogany, which is naturally, has anti pest substance). The increasing demand for wood furniture without preservative in EU is giving the opportunities for access furniture product to home countries.

#### ***4.4.7. Product Testing***

Currently 15 Institutes and Centers for product testing are recognized in the EU, essentially one for each major EU country with new ones welcomed as they evolve. The following are the key Tests for Furniture products: (1) Testing for Tables and Chairs; (2) Testing for Storage Furniture; (3) Surface Finishing Testing; (4) Glass items Tests for Furniture; (5) Testing for Beds & Mattresses; and (5) Nursery and Children's Furniture.

#### ***4.4.8. General Product safety***

For all items of furniture, safety is a very important requirement and legislation is in force at both EU and national level to ensure that no unsafe products are offered for sale to consumers. The General Product Safety Directive defines a 'safe product' as follows: a product that under reasonably foreseeable conditions of use does not present any risk or minimum risk compatible with the product's use. An exporter, or his representative in the EU, can in most cases be held liable for compensation for possible damage. Fire safety also falls under this category. As the importer will be regarded as the supplier, he will require a

contract with the exporter to cover his exposure to any of the above-mentioned potential risks.

#### ***4.4.9. Environmental Requirements***

Related to dangerous substances and environmental issues concerning furniture industry, the EU has enforced many various directives aiming at regulating these matters. Differences in environmental legislation exist within the EU. Regular changes in legislation require legislation to be checked in each selected EU country, which can be found at the CBI Access Guide, (<http://www.cbi.nl/accessguide>), which monitors the product legislation for the furniture industry.

Environmental legislation to product furniture are SFI (Sustainable Forestry Initiative), Forest Stewardship Council and Ecolabelling.

The Sustainable Forestry Initiative (SFI) program is based on the premise that responsible environmental behavior and sound business decisions can co exist. SFI program participants practice sustainable forestry on all the lands they manage. They also influence millions of additional acres through the training of loggers and foresters in best management practices and landowner outreach programs.

The Forest Stewardship Council was created to change the dialogue about and practice of sustainable forestry worldwide. Its purpose is to coordinate the development of forest management standards throughout the different bio geographic regions of the U.S., to provide public information about certification and FSC, and to work with certification organization to promote FSC certification in the U.S. FSC-US has a national presence through the work of its Board of Directors, member, staff, and regional standards coordinators.

#### **4.5. Ecolabelling**

In 1992 the Council of the EU adopted a regulation establishing a Community Eco-label Award Scheme. In the meantime 55 licenses for the use of the logo have been granted for 240 products. The range of eligible products is to be expanded.

Some details of the scheme have been the subject of revision. The new Regulation (EC) No 1980/2000 of the European Parliament and of the Council of 17<sup>th</sup> of July, 2000 on a revised Community Eco-label Award Scheme was published on 21<sup>th</sup> of September, 2000.

The key elements of this new Regulation, which entered into force on 24 September 2000, include:

- “Widening the scope to cover services as well as products.
- Reinforced stakeholder participation, in particular in developing environmental criteria.
- Creation of an EU Ecolabelling Board, comprising Eco-label Competent Bodies and interest groups whose main role is to develop the Eco-label criteria.
- Reduced fees for SMEs and developing countries.
- Introduction of a ceiling on the annual fee.
- Reinforced transparency and methodology.
- Renewed emphasis on the promotion of the scheme.
- Reinforced co-operation and co-ordination with the national eco-label schemes.
- More information on the label.
- Allowing traders and retailers to apply directly for their own brand products.
- Allowing non-EU producers to apply directly” 1.

Eco-label scheme is one element of a wide strategy aimed at promoting sustainable production and consumption. The main objectives of the scheme are;

- 1) To promote the design, production, marketing and use of products which have a reduced environmental impact during their entire life cycle, and
- 2) To provide consumers with better information on the environmental impact of products.

Types of ecolabelling certification are divided into 3, namely: (1) Certification of Forest Management Unit (FMU); (2) Certification of the chain of custody; and (3) Audit logs (more focused on the legality of wood origin).

#### 4.5.1. General Content of Ecolabeling For Furniture Product

The furniture industries together with the paper industry are the main consumers of wood and timber. Therefore questions of sustainable forestry or the quality of wood-based material are closely connected with the discussion of criteria for environmentally friendly furniture.

Much of the environmental focus of the past has been concerned solely with the production sphere. But all kinds of take-back or re-use systems that enlarge the lifetime of a piece of furniture are equally relevant. Market institutions (such as second-hand dealers) that enable some filtering down prior to disposal and thereby work to reduce waste are already popular and well established in many European economies. Other business concepts such as sharing or leasing have only a niche status in the economy and need more elaboration and testing. The integration of the whole life cycle of a product into a labeling scheme can be seen as an element of an integrated product policy. (See for example Ernst & Young / SPRU (2000): *Developing the Foundation for Integrated Product Policy in the EU*, June 2000, DG Environment, and European Commission)

In some fields consumer behavior has already become the most relevant factor for the resulting effects on the environment (e.g. zero emission housing, mobility). As scientific debate on sustainable development shifted towards consumption-related impacts on the natural environment, the roles of consumer information, education and lifestyles have become a focus of research. In general, the more complex the environmental implications, the more urgent the need for aggregated and reliable information to facilitate informed and rational choice among consumers. This is where labels can play an important role.

Consumers' choice of furniture is not based on routine behavior. Instead, the search for information on price, quality and appropriate traders starts again with every purchase. The development of tools to economize on information costs is obviously attractive to guide the decision process. This is where brand names and labels generally find their rationale.

To make public the otherwise confidential environmental information of a product through labeling is necessary because the general price information is still misleading or at least ambiguous in that respect. Green taxation or emission



trading could reduce some of that information burden from the consumers because environmental costs would be part of the price.

Some arguments in favor of consumer protection compete with environmental concerns, as in the case of fire protection. A requirement for fire retardation conflicts with the goal of reducing chemical impregnation of tissues in upholstered furniture (to avoid landfill or incineration problems). On the other hand, curbs on the use of solvents that emit hazardous VOCs are based on health and ecological arguments alike and require no compromises between different ends.



## CHAPTER 5

### RESEARCH METHODOLOGY

#### 5.1. The Construction of the Model

The previous model of export determinant factors showed that the export of goods determined by both of supply and demand factors. In the demand side, Khumar and Dhawan, Gunawardhana, and Gu put gross domestic products (GDP) of destination countries as one of factor which influences export. GDP is used as a proxy of income of trade partner countries and figure out the economic size of the countries. Meanwhile, per capita GDP of exporting country was also put in equation by Gunawardhana and Gu. The previous research which put real exchange rate as influence factor of export is done by Khumar and Dhawan, Gunawardhana and Gu. The last independent variable is proximity distance that put by Gunawardhana, and Gu in their research.

The model proposed in this thesis would use most significant variables that have been employed on prior studies related to determinant factors of export demand. In addition, the dummy variable of time implementation has been added to be a proxy of EC Regulation No.1980/2000 (before 2001 the variable is 0 and after the year is 1) as one of variables which give impact to Indonesia furniture export.

All of those researches above have similarities and differences in the coefficient sign and the significance of variables. Real per capita GDP of partner country and real per capita GDP of exporter country have positive coefficient and significantly influences the export demand. Real exchange rates which proxy as price of goods, and distances are negative and significant.

Based on those previous researches, this research applies export value of Indonesia's furniture as dependent variable, while real per capita GDP of partner country, real per capita GDP of Indonesia, proximity distances, real exchange rate, and dummy of Ecolabelling Regulation as independent variables. The first

independent variable is real per capita GDP of partner countries. This variable applied on this research is proxy as income of country. Country with higher income will tend to be having higher demand on a good. An increase in income of a country is expected to increase in consumption of a product.

Real per capita GDP of Indonesia is the second independent variable of this research. The employment of this variable is to identify the supply side. The higher per capita GDP is, the higher the technical level and the average income are. Meanwhile, the higher technical level and the average income can mean that the country can export more in general.

The third independent variable applied in this research is proximity distances between Indonesia and partner country. Refer to Gu, in this model, distance is multiplied by price of fuel in the world. It represents transportation cost. Transportation costs, or also defined as transaction costs across distance, play important role in international and interregional trade.

The next independent variable is real exchange rate as a proxy of price. Price is become one indicator to measure the competitiveness of the product. The result of previous research showed that variable of price influence for export demand. Moreover, the previous result showed the changing of price is affect to the changing of export volume.

The last independent variable is a dummy of Ecolabelling regulation on furniture. Dummy of Ecolabelling regulation on furniture used in this research because Ecolabelling regulation on coffee build by European Union is one of regulation which is predicted enable to influence the demand for Indonesia's furniture export. As described on the background of this research, that post of implementation of this regulation on 24 September 2000, demand for Indonesia's export in European Union was decreased. So that, this dummy is applied in this research is in order to observe whether Ecolabelling regulation on furniture has an impact on the demand for Indonesia's furniture export in European Union.

This research applies the econometric model which is adjusted to objective of the research and availability of the data. The modified model in this research is presented as below :

$$\begin{aligned} \ln RX_{ijt} = & \beta_0 + \beta_1 \ln PGDP_{jt} + \beta_2 \ln PGDP_{it} + \beta_3 \ln DIS_{ijt} + \beta_4 \ln RER_{ijt} \\ & + B5DNTB + \varepsilon_{ijt} \dots\dots\dots (5.1) \end{aligned}$$

Where:

$\ln RX_{ijt}$  = Real Export value of country i for country j and time t

$\ln PGDP_{jt}$  = Real GDP per capita of partner country j in time t

$\ln PGDP_{it}$  = Real GDP per capita of country i (Indonesia) in time t  
(GDP nominal of Indonesia divided by GDP deflator of Indonesia multiplied 100 and divided by total population of destination countries)

$\ln DIS_{ijt}$  = Proximity distance of country i to country j multiplied by Oil Price, as a proxy of transportation cost.

$\ln RER_{ijt}$  = Real Exchange Rate between country j and i  
( $P^f$  is the foreign price level and  $P$  the domestic price level.  $P$  and  $P^f$  must have the same arbitrary value in some chosen base year.

$$\text{Hence in the base year, } \left\{ RER = e \left( \frac{P}{P^f} \right) \right\}$$

$DNTB$  = Dummy for EU's non tariff barriers on furniture products  
(0 = pre of EC Regulation No.1980/2000 validation,  
1 = post of EC Regulation No.1980/2000 validation)

$\varepsilon_{ijt}$  = Error term

The relation between dependent variable and independent variables is shown by the sign of each coefficient of the independent variables. If the coefficient has a positive sign, it means there is a positive relation between the dependent variable with the independent variable and the opposite.

Expected coefficient sign are;

- Real GDP per capita of partner country is expected has positive effect on export value.
- Real GDP per capita of Indonesia is expected has positive effect on export value.

- Proximity Distance is expected has negative relation to the export value.
- Real exchange rate is expected has positive relation to the export value.
- The dummy factor of EC Regulation No.1980/2000 is expected has negative impact to the export value.

In estimating the result, this thesis employs pooled data regression methods using Eviews 5.1. In order to make estimation of the model, researcher put double logarithm on both of dependent and independent variable to find out the significance and the elasticity of each independent variable on determinant factors of Indonesia's furniture exports.

## 5.2. Operational Definition of Variables

Before estimate the result of the model, firstly, the operational definitions of those variables being included in this study are

### a. Value of real export

As dependent variable, value of export is representing the amount of Indonesia export into ten European Union countries. The value of Indonesia furniture export is using millions US\$ as the unit of quantity. Real export is defined as export value divided by whole price index, shows developments in real terms as influences of price changes are removed.

### b. Real Per capita Gross Domestic Products (GDP)

This is the "average" output of the economy per person measured in a base year prices. This ratio is often used as a measure of standard of living in comparisons over time of one country, or between different countries when measured in the same currency. The measure is expressed in currency units per person. (Real per capita GDP is GDP nominal of destination countries divided by GDP deflator of destination countries multiplied 100 and divided by total population of destination countries)

$$\{ RealPer capita GDP_{it} = \frac{GDP_{nominal_{it}}}{GDPdeflator_{it}} \times 100 / Population \}$$

c. Proximity Distance

The distance which is used as a proxy to shows the impact of transport costs and other transaction costs to trade. In this research, we stated distance as the multiplication of distance in miles with fuel price. It represents transportation cost.

d. Real Exchange Rate

Real exchange rate is defined as  $REER = e \left( \frac{P}{P^f} \right)$ , where  $P^f$  is the foreign price level and  $P$  the domestic price level.  $P$  and  $P^f$  must have the same arbitrary value in some chosen base year. Hence in the base year,  $REER = e$ .

e. The establishment of EC Regulation No.1980/2000 (dummy NTB)

The dummy regulation is the dummy variable for time for establishment of EC Regulation 1980 year of 2000, before 2001 the variable is 0 and after the year is 1.

### 5.3. Data and Data sources

The data that use to this research is secondary data which consist of time series data of the Annual Indonesia and European Union Economic reports and export import of furniture products from the year of 1990 until the year of 2008. Source of the Data which are used are: WITS (World Integrated Trade Solution), International Monetary Fund (IMF), United Nation Commodity and Trade (UN Comtrade), European Commission, Euromonitor, Econstats, Indonesia Bureau of Statistics (BPS), Ministry of Trade, Ministry of Industry, Ministry of Forestry, ASMINDO (Indonesian Furniture and Handicraft Association), and other sources including electronic sources. The data in this research are;

- a. The data of Indonesia's furniture export and GDP are obtained from World Integrated Trade Solution (WITS).
- b. The data of real per capita GDP of partner countries are obtained from International Monetary Fund (IMF). ([www.imf.org](http://www.imf.org))

- c. The data of real per capita GDP of Indonesia is obtained from International Monetary Fund (IMF). ([www.imf.org](http://www.imf.org))
- d. The data of geographic distance is obtained from [www.distance.indo](http://www.distance.indo), and the world oil price is obtained from <http://tonto.eia.doe.gov/dnav/pet/hist/>
- e. The data of exchange rate is obtained from International Monetary Fund (IMF) and International Financial Statistics.
- f. The EC Regulation No.1980/2000 is obtained from Official Journal of the European Communities from website of [www.europa.eu.org](http://www.europa.eu.org).

#### 5.4 The Panel Data Regression

Data panel is a combination of cross section data and time series data. This thesis will use panel data to observe behavioral of several commodities during certain period of times. Data panel can also be considered as a repetition of cross section data which may give opportunity to any researcher to learn dynamic change within short period of time. According to Gujarati (2003), the combination of time series data and cross section data could enhance the quality and quantity of data which is impossible by using only one of two demission forms.

Generally panel data are sequence of blocks and cross section data within short period of times. Lois Sayrs (1989) states that under some circumstance the cross-section data may be nested within time. However, there are some conditions that if there are no missing values, the data set is called a balanced panel, but if there are missing values, the data set is referred as an unbalanced panel. There are several types to panel data analysis, as follows: constant coefficients models; fixed effect models; and random effect models.

Constant coefficients model is the same as cross section data or time series data. However, before the regression is made, the data must be collected between cross section data and time series. The combination of the data usually called pooled data. The pooled data reflected as one observation and estimation with OLS (Ordinary Least Square) method.

Fixed Effect models have constants slopes but intercepts differently according to the cross sectional (group) unit. In this type there is no significant

temporal effect but there are significant differences among one of variable in several given times. In other word, intercepts would be changed for each variables and times.

The last model is random effects models. In this model the differences between variables and or time reflected with error terms. It shows that errors have correlation in time series and cross section.

## 5.5 The Step of analysis

### 5.5.1 Examining of the model

Before estimate the model, we should choose the estimation model approach of panel data by pooled Least Square (PLS), Fixed Effect Model (FEM) or Random Effect Model (REM). There are the following steps to choose the estimation model approach

### 5.5.2 Panel Data Test

In order to estimate the data whether it is constant coefficients or fixed effect, F-test or Chow test should be exercised. If the amount of time is more than the amount of variables then panel data would be estimated using fixed effect. In contrary, when amount of time lesser than the amount of variables then panel data would be estimated using random effect.

The equation for F-test or Chow Test as follows:

$$F = \frac{(SSR_1 - SSR_2) / (N - 1)}{SSR_2 / (NT - N - k)}$$

Where :

$SSR_1$  = The residual sum squares of restricted model (PLS Model).

$SSR_2$  = The residual sum squares of unrestricted model (FEM).

$N$  = The number of cross-sectional units.

$T$  = The number of time series.

$k$  = The number of explanatory variables (including the intercept).



Hypothesis in Chow test are as follow:

$H_0$  = There is no individual effect; PLS approach is preferable.

$H_1$  = There is individual effect; FEM approach is preferable.

The Hausmann test is used to check the consistency of OLS. The variables should not have correlation between variables and error terms. The hypostatical for Hausmann test are:

$H_0$  : Random Effect Model

$H_1$  : Fixed Effect Model

The result of Hausmann test will be compared to chi-square statistic, if Hausmann test give significant result then rejects  $H_0$  and the fixed effect model will be used. The result using random effect model if the condition of Hausmann test is the opposite.

Nachrowi (2006) stated that in order to define which model is more suitable to be used between Fix Effect Model and Random Effect Model, ones can use comparison of  $n$  (number of sample) and  $t$  (sample period). Detailed as follows:

- If provided panel data has greater “ $t$ ” value than ‘ $n$ ’ then it is suggested to use Fix Effect Model;  $t > n \rightarrow$  *Fix Effect Model*.
- If provided panel data has smaller “ $t$ ” value than ‘ $n$ ’ then it is suggested to use Fix Effect Model;  $t < n \rightarrow$  *Random Effect Model*.

## **5.6. The Examination of The Classic Assumption Test of Autocorrelation, Heterocedasticity and Multicollinearity**

Autocorrelation, Heterocedasticity and Multicollinearity are became the problem of research on economics data. Its assumption infraction was caused estimation model became inefficiency. This detection is also implied to panel data.

The first basic assumption is the correlation existence among disturbances (autocorrelation). Due to the existence of autocorrelation, the result of coefficient estimation will be appeared as consistent and not bias but in big variant or in other word the result of interpretation is inefficient. This inefficient of variant parameter estimation would caused the value of T-Account incline to small and the result of examination lean to receive  $H_0$  or homocedastic structure will be acceptable.

The way that often used to detected autocorrelation is through applying *Durbin Watson Test (DW)*. This test is done through comparing statistic value of DW that accounted in limited value of DW. To overcome and eliminate autocorrelation is through put *autoregressive* variable into equation.

The next assumption that used in variants of each error term is constant. The impact of heterocedasticity is inefficient estimation process, meanwhile the estimation result stayed consistent and unbiased. Heteroscedasticity would cause the result of T and F Test be unused or probably mislead.

The case of heterocedasticity was often appeared on cross section data, yet rarely occurred on time series data. To exam the existence of heterocedasticity could be done through *White's General Test*, *The Goldfield Quandt Test* or *The Breusch Pagan Test*.

Multicollinearity is significantly linear relation among or all of independent variable within regression model. This circumstance is often appeared on time series macro model in which many variables inclined up together on the changing time. Consequently, variant estimation will be bigger rather than before and will decrease t-Account value and also the result of estimation will be unbiased and inefficient. There are some indications to detect multicollinearity that are: the value of  $R^2$  is highest and the value of F-Test is significant. The other method to detect multicollinearity is to find out coefficient correlation matrix among independent variables.

## CHAPTER 6

### RESULT AND ANALYSIS

#### 6.1 Model Estimation Result

##### 6.1.1 Model Examination

In order to examine the model of Indonesia furniture export into ten European Union Countries, researcher will estimate the model which is constructed as equation below:

$$\begin{aligned} \ln RX_{ijt} = & \beta_0 + \beta_1 \ln PGDP_{jt} + \beta_2 \ln PGDP_{it} + \beta_3 \ln DIS_{ijt} + \beta_4 \ln RER_{ijt} + \\ & + \beta_5 DNTB + \epsilon_{ijt} \dots\dots\dots(6.1) \end{aligned}$$

The tools to estimate the model uses quantitative micro software called Eviews program with the version 5.1. The estimation process is started by find out the individual effect of the model through examined the Chow Test. It test is done by comparing the probability of F Stat and F table. The hypothesis of the test accepts  $H_0$  if the probability of F stat is higher than F table, it means the model contains individual effect and we should use fixed or random effect model. In the opposite, if the probability of F stat is lower than F table, we *reject*  $H_0$ . It means the model does not contain individual effect and we could use pool least square. The probability of F stat is counted from a comparison Pool least square (PLS) and fixed effect model (FEM).

After estimated using Pool Lest Square -no weights and Fixed Effect Model-no weights (table 6.1 in appendix), we conduct Chow Test. The result of Chow test is presented in table 6.2 in appendix.

##### 6.1.2 The Result of Chow Test

Based on the result of Chow test (Table 6.2 in appendix), it test showed that the value of F stat is higher than F table in the level of confidence  $\alpha$  1%, 5% and 10%. F-stat is 5.2350, it is higher than 2.50 ( $\alpha$  1%), 1.93 ( $\alpha$  5%), and 1.66

( $\alpha$  10%). Therefore, it indicates that there is individual effect containing within the model and the model is not estimated by pooled least square.

After we examine the Chow test and found the individual effect, the next step that has to be taken is to examine the Hausmann test. It test is used to choose either fixed effect model or random effect model. The hypothesis of the test accepts  $H_0$ , if the probability of  $\chi^2$ -Hausmann is higher than  $\chi^2$ -Table, it means the unobserved variable correlated with regression, and we should use Fixed Effect Model. In the opposite,  $H_0$  is rejected if the probability of  $\chi^2$ -Hausmann is lower than  $\chi^2$ -Table. It means the unobserved variable correlated with error model and we should use Random Effect Model.

### **6.1.3 The Result of Hausmann Test**

According the result of Hausmann test which is showed in table 6.3 (appendix), the value of  $\chi^2$  - Hausmann (43.598) is higher than  $\chi^2$ -Table in the level of confidence  $\alpha$  1% (15.086), 5% (11.070) and 10% (9.236). It means the unobserved variable is uncorrelated with error model. Hence, the estimation of the model in this research will use Fixed Effect Model (FEM). In the FEM, component of individual error has correlation each other and also there were autocorrelation for cross section and time series. Therefore, the autocorrelation test is necessary in this model.

### **6.1.4 The Result of Multicollinearity**

The existence of multicollinearity in the model can be noticed from the existence of pairwise correlation among independent variables. This pairwise correlation was calculated by using the coefficient correlation matrix. After the pairwise correlation calculated, the next step was finding the pairwise correlation value among regressor which whether it was higher from 0.8 or not. The pairwise correlation value which is higher than 0.8 shows that there is a strong correlation among variables. Hence, it indicates the presence of multicollinearity among regressors (Nachrowi and Usman, 2006: 247). As a contrast, the pairwise

correlation value which is lower than 0.8 indicates that multicollinearity is not present.

The coefficient correlation matrix (table 6.4 in appendix) shows that all the correlation value is lower than 0.8. It means that there is no multicollinearity among regressors.

### 6.1.5 The Result of LM Heterocedasticity Test

The last preliminary test is the LM test which is conducted in order to find out whether there is a heterocedasticity problem in the model or not. Before the value of LM could be calculated, Residual Covariance Matrix (it presented in Appendix) should be arranged. The LM test is conducted using formula in the equation presented in appendix, and shows the value of LM 94.467, while the value of  $X^2$ -table ( $\alpha=0.05$ ,  $df = 2$ ) is 16.919. Since the value of LM is higher than the value of  $X^2$ -table, it can be concluded that the null hypothesis is rejected, which indicates the presence of heterocedasticity problem. The summary of LM test is presented in table 6.5.

Table 6.5. The Result LM Heterocedasticity Test

LM	:	94.467
$X^2$ -table ( $\alpha = 0.05$ , $df = 2$ )	:	16.919
Result	:	LM is bigger than $X^2$ -table, $H_0$ is rejected.
Conclusion	:	There is a heterocedasticity problem in the model.

To overcome the heterocedasticity problem, one of the treatments that could be taken is using *white cross-section* (The result of FEM (*cross-section weights*) was attached in Appendix). From all the preliminary tests that had been conducted, it could be concluded that Fixed Effect Methods (*cross-section weights*) is the appropriate methods used in estimating the model.

## 6.2 The Empirical Result and Interpretation

### 6.2.1 The Empirical Result

The result of the estimation is summarized in table 6.6 and 6.7

Table 6.6. The Estimation Result Using Fixed Effect Model

Real Export Value [ $LnRX_{ijt}$ ] As a Dependent Variables		
Variables	Coefficient	Probability
C	7.460024	0.0000
LOG(PGDPJ)	3.78E-05	0.3507
LOG(PGDPI)	0.010090	0.0245**
LOG(DISTANCE)	-0.001140	0.0211**
LOG(RER)	0.003272	0.0000***
NTBDUMMY	2.74E-08	0.3980
R <sup>2</sup>	0.941	
Adj R <sup>2</sup>	0.936	
DW-stat	1.078	

Note: The numbers in parentheses are the standard error

\*\*\* The statistic significance at  $\alpha = 1\%$

\*\* The statistic significance at  $\alpha = 5\%$

Table 6.7. Cross-section Intercepts of the FEM

Cross-section	Fixed Effects
AUSTRIA	7.459445
BELGIUM	7.459421
DENMARK	7.45945
FRANCE	7.46016
GERMANY	7.460186
ITALY	7.460341
NETHERLANDS	7.459094
SPAIN	7.461779
SWEDEN	7.4599824
UK	7.4600736

From tables 6.6 and 6.7 above, it can be concluded that the regression result is as follows:

$$LnRX_{ijt} = 7.46 + 3.78E-05LnPGDP_{jt} + 0.01 LnPGDP_{it} - 0.001LnDIS_{ijt} + 0.003LnRER_{ijt} + 2.74E-08DNTB + \epsilon_{ijt} \dots \dots \dots (6.2)$$

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### 6.2.2 The Interpretation of the Estimation Result

From the summary of estimation result presented in table 6.6 can be concluded that the adjusted  $R^2$  of the model is 0.941, which means that the determinant factors for demand of Indonesia's furniture export to ten European Union and the impact of Ecolabelling regulation could be explained by the model as much as 94.11% and the rest could be explained by other variable which amount of 5.89%. Four variables have the same signs as the expected signs (the real per capita GDP of partner countries, real per capita GDP of Indonesia, distance, and RER), except the dummy of Ecolabelling regulation.

From five variables, there were three variables are significant; real per capita Indonesia's GDP ( $\alpha=5\%$ ), proximity distance ( $\alpha=5\%$ ), and real exchange rate ( $\alpha=1\%$ ), while two others; real per capita GDP of partner countries and dummy of Ecolabelling Regulation are insignificant for all significant level.

The result of fixed effect model shows that each of destination countries of Indonesia's furniture export (importing country) has different intercept. It means that they have different growth rate for the demand of Indonesia's furniture. The different growth rate reflects the differences between the growth of demand for Indonesia's furniture of each destination countries of Indonesia's furniture and the growth average of demand for Indonesia's coffee in all export destination countries.

According to table 6.7 above, it could be explored that there are ten export destinations countries in European Union which is potential to the demand for Indonesia's furniture namely Austria, Belgium, Denmark, France, Germany, Italy, Netherlands, Spain, Sweden, and United Kingdom. This indicates that those countries have the higher growth rate of demand for Indonesia's furniture export. In addition, those countries will get the biggest effect when there are any changes in all independent variables. On the contrary, when there are no changing in all independent variables (constant), differences of growth rate might be resulted by different factors owned by each importing countries for example consumer's preference, domestic consumption, standardization policy and other factor.

### 6.2.2.1 Real Per Capita GDP of Partner Countries

Based on the result of regression, real per capita GDP of partner countries influences positively for Indonesia furniture export with 35.07% possibility of making the first type error. It also shows that the increasing of 1% real per capita GDP of partner countries will increase Indonesia's furniture export as much as  $3.78E-05\%$  (*ceteris paribus*), which indicates that the GDP of partner countries has an inelastic relation with Indonesia's furniture export. On the other words, the increasing of GDP of partner countries is not too responsive to the changes of Indonesia's export.

Theoretically, per capita GDP is representing average income level of the country in generally. The increasing of per capita GDP showed the increasing of income and consumption. Therefore, real per capita GDP become one of variable which is influence the demand of export. The previous chapter explained that the increase of real income of a country means the welfare of its residents is better off. When residents of a country are economically better off, they tend to increase in demand on good, either domestically produced or imported good. Thus, demand on imported good will increase. This is consistent with research done by Khumar and Dhaman, Gunawardhana, and Gu.

Refers to the coefficient value which amount of  $3.78E-05\%$ , it can be stated that elasticity of real income of partner countries is  $3.78E-05\%$ . This shows that real per capita GDP of partner's countries is inelastic to demand for Indonesia's furniture export. This means that the demand for Indonesia's furniture export is relatively unresponsive to change in the real income of partner countries. Any change in real per capita GDP of partner countries in European Union would relatively have a small affect to change in demand for Indonesia's furniture export. This may be caused by the increasing of EU's import particularly is caused by intra trade. Intra trade among EU's member has increased rapidly since EU was established. According to CBI's Market Survey 2008, 69% of EU's furniture imports came from other EU countries. It's proven that extent of international trade will depend on how similar the demand structures are. The similarity in income, taste, and life style cause increasing trade among EU countries.

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On conclusion, the increasing of real per capita GDP of EU's countries affect to increasing of intra trade among EU's member and it is not too responsive to the changes of EU's import from non member countries included Indonesia.

#### 6.2.2.2 Real Per capita GDP of Indonesia

It variable shows the positive sign. It means the increasing of Indonesia's real per capita GDP as much as 1% will push up the Indonesia's furniture export as much as 0.01% (*ceteris paribus*). Additionally, the effect increasing of Indonesia's GDP is significant in the given level ( $\alpha = 5\%$ ). The coefficient value of Indonesia's GDP in the simulation result also indicates the inelastic relation between Indonesia's GDP and export value, which means that the increasing of Indonesia's GDP is not too responsive to the changes of Indonesia's furniture export. This is consistent with research done by Gunawardhana and Gu that GDP per capita of exporting country gives advantage to a country's export.

Relation between Indonesia's GDP and export value is inelastic. It is due to the increasing of domestic demand of furniture that lead to Indonesian furniture producers (especially small and medium enterprises) focus on domestic market rather than export to the foreign market. Other reason is an increase of Indonesia's GDP not in the line with furniture production efficiency, on the other word economies of scale of Indonesia's furniture is still low. The nature of production in Indonesia itself lends some obstacle to competing in the low-cost mass-produced niche.

#### 6.2.2.3 Proximity Distance

Based on the result of regression, the independent variable of distance shows the negative sign. It means distance is influence negatively for export value and it probability shows significantly in the level of 95%. Moreover, every 1% increase in distance will result of decreasing on export value as much as 0.001% (*ceteris paribus*). Additionally, the changing of distance is inelastic to the changing of export value.

Theoretically, the trade flow between two countries is determined by the economics of scale and the distance between those countries. The trade flow

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should be positively related to the economy of scale and it is negatively related to the distance between the two countries. This is also consistent with research done by Gunawardhana and Gu that distance plays an important role in impacting a country's export.

#### 6.2.2.4 Real Exchange Rate (RER)

Just as expected, real exchange rate shows the positive sign. It means real exchange rate influence positively for value of export. The appreciation of Indonesia's currency (in term of foreign currency) will lead to decreasing of export because the price of Indonesia's product will be expensive. In the opposite, the depreciation of Indonesia's currency will lead to increasing of export because the price of Indonesia's product will be cheap. This is consistent with research done by Khumar and Dhaman, Gunawardhana, and Gu that real exchange rate affected the export performance of a country.

Moreover, its probability shows significantly in the level of 99% and every 1% of appreciation in Rupiah will create a decrease on export value as much as 0.003% (*ceteris paribus*). On the other side, the coefficient value of RER is lower than 1, it means that the changing of Indonesia's currency is relatively less responsive to the changing of Indonesia's export. It caused the price of furniture divided uses constant rate based on the price of exchange rate when the contract agreed by both parties.

#### 6.2.2.5 Dummy Ecolabelling Regulation (EC) No 1980/2000

Based on the result of regression, the independent variable of Dummy Regulation (EC) No 1980/2000 shows the positive sign and does not meet the expected sign. Dummy regulation is influence positively for value of export with 39.80% possibility of making the first type error. According the sign and the value of coefficient, we can interpret the imposing of EC No.1980/2000 is not too responsive to the Indonesia's furniture export. The increasing of Indonesia's export triggered by others factor besides this regulation.

From the point of view of the demand side (EU Countries), the Ecolabelling Law gives positively affect to domestic furniture industries because

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as a single market once good have been admitted into the market they cannot be subjected to customs duties discriminatory taxes or import quotas, as they travel internally. So this law will reduce transaction cost among EU's members. It is proven by result of regression.

On the contrary, Indonesia faces domestic problem that cause nearly impossible for Indonesian furniture makers to compete in the low-end rungs of the furniture business with the likes of China. Furthermore, in short nearly impossible to compete with European furniture makers that have the reputation as producers of very fine, high technology-processed products. This fact leaves very little room for Indonesian products to compete on an equal footing in the world stage. It is proven by decreasing of Indonesia's furniture export growth to the EU post of establishment of Ecolabelling regulation, except in Italy. (Table 6.6)

The conclusion is environmental product standards have ambiguous effect on the size of trade flows, if the country introducing the standard is an importing country, trade is unlikely to decrease. To the extent production cost are higher for safer goods, foreign exporter will become less competitive in world markets where their competitor do not need to meet the same standards. Foreign exporters will incur high costs as they must adapt their products to conform to new regulations. If the country imposing the standard imports the relevant good, the effect on trade is ambiguous. It is proven by intra trade furniture among EU member that increasing to be 69% post of Ecolabelling establishment. (CBI report 2008). On the other hand, the imposing of Ecolabelling standard give positive effect to the country introducing the standard in this case is EU and give negative effect to the exporting country that must adapt the standard in this case is Indonesia.

### **6.3.2 The impact of Regulation No 1980/2000 for Indonesia Export**

From the econometric methods, the result is the imposing of Ecolabelling Regulation has positive relation to Indonesia's furniture export to EU countries.

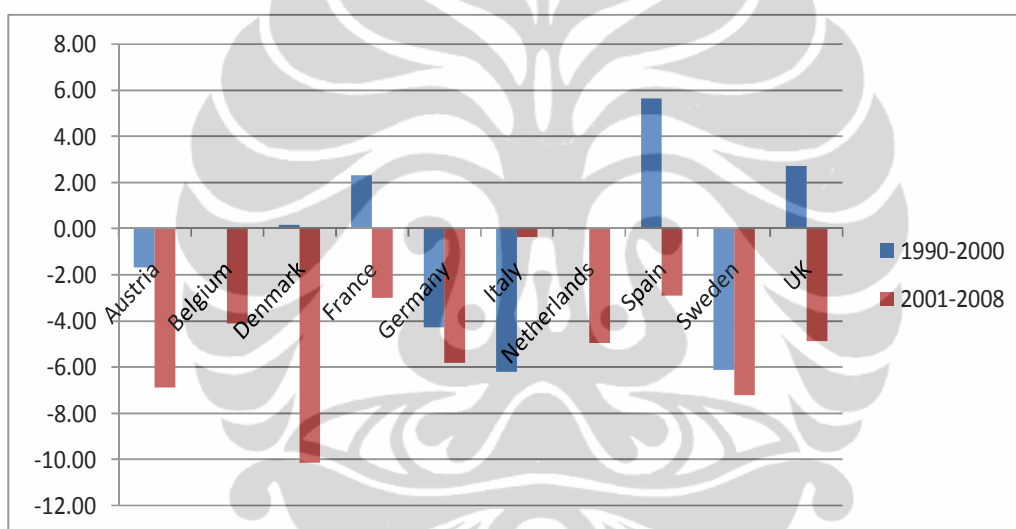
Based on WITS's data, the average growth rate of Indonesia export into European Union countries post the establishment of regulation (2001-2008) showed the increasing to the one country namely Italy. On the contrary, Austria,

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Belgium, Denmark, France, Germany, Netherlands, Spain, Sweden, and UK showed the negative growth in post period. It is contrast with the result of regression. (was attached in table 6.6)

The figure 6.1 below shows that the trend the average growth of Indonesia furniture export post the establishment of regulation (2001-2008) is lower than the average growth pre the establishment of the regulation (1990-2000). The average growth period 1990 -2000 is -0.84% and decreased to -5.05% in 2001-2008. It is mean that the imposing of Ecolabeling regulation give negative impact to the Indonesia's furniture export performance.

Figure 6.1: The trend of average growth of Real Indonesia Export



Source: WITS, (processed)

Moreover, the regulation requires the general obligation in the furniture trade and general requirement of environmental law. Since the establishment, it regulation imposed the common basis for all EU member countries. The uniformity requirement in EU could affect for Indonesia because every EU member countries just imposed the same requirement each other. However, it could act as barrier if Indonesia product could not comply with the requirement of it regulation. In the other word, if the requirement of import related to the furniture safety being strict, therefore Indonesia will face the strict regulation in

all EU member countries. On the other side, the ecolabelling requirement is not easy to comply for some developing countries.

Since the ecolabelling regulation established as the network which is involved member countries, any information from a member relating to the existence of a serious direct or indirect risk to environment will be immediately transmitted into other members of the network. Therefore, in this case, if one country claimed Indonesia product contains the threat, the information will be delivered for every member countries through European Union Eco-Labelling Board (EUEB). Therefore, other countries will alert Indonesia product in their country although it products is not sure yet contain the threat in the country it's self. Moreover, Indonesia product and exporter which was notified by European Union Eco-Labelling Board (EUEB) could be rejected and withdrawn from the market if the product could not fulfill the requirement. As the consequence, the rejected will influence Indonesia export into EU. Moreover, the image of Indonesia product will be bad and influence the consumer trust in EU. On the other side, the notification of EUEB could be used for taking commission decision in order to decide the protective measure of the import product from other countries.

The establishment of ecolabelling regulation could be act as barrier for developing countries. The imposing of high requirement and standard by developed countries which is reflected by their ecolabelling and environment regulation could affect international trade either direct or indirectly. It will give bigger effect for developing countries particularly. Consequently, producers and exporters should prepare for additional cost. For instance, base on ASMINDO data, approval of this certificate should add 10 percent to sales prices. However, overseas buyers are currently offering the same price for products, regardless of certification. Of the 2,400 business exporting the furniture, only 160 have obtained the certificates, the certification process can take four to six months and need cost US\$ 6,000 to \$ 10,000. (The Jakarta Post, July 15, 2009).

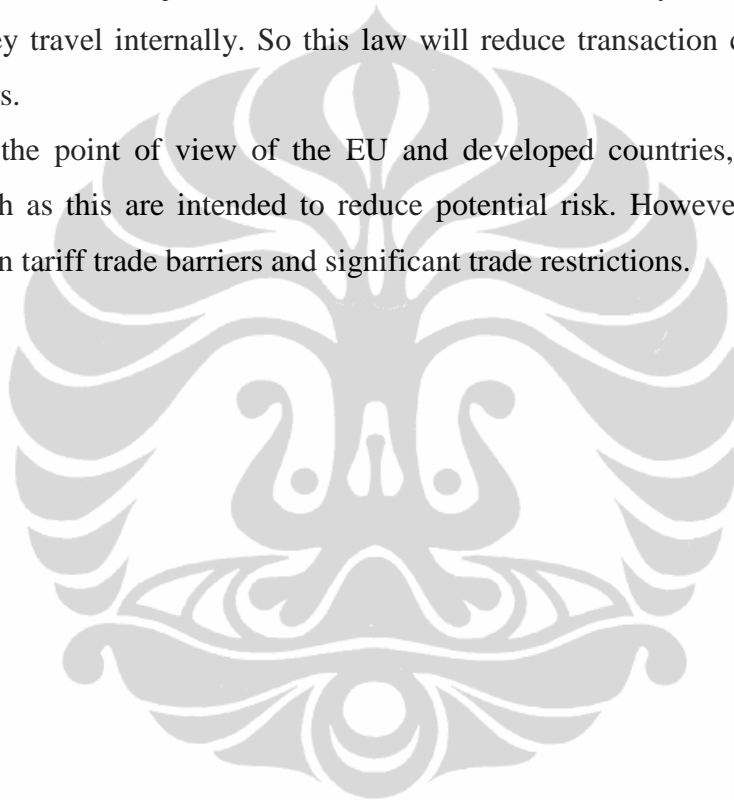
From the point of view of the demand side (EU Countries), the general objective of Ecolabelling scheme is one element of a wide strategy aimed at promoting sustainable production and consumption. It means every EU member

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countries should implement the uniform furniture product requirement regarding the regulation which entered into force on 24 September 2000. In general, types of ecolabelling certification are divided into 3, namely: (1) Certification of Forest Management Unit (FMU); (2) Certification of the chain of custody; and (3) Audit logs (more focused on the legality of wood origin).

The Ecolabelling Law gives positively affect to domestic furniture industries because as a single market once good have been admitted into the market they cannot be subjected to customs duties discriminatory taxes or import quotas, as they travel internally. So this law will reduce transaction cost among EU's members.

From the point of view of the EU and developed countries, regulatory standards such as this are intended to reduce potential risk. However, they can also create non tariff trade barriers and significant trade restrictions.



## CHAPTER 7

### CONCLUSION AND RECOMMENDATION

#### 7.1. Conclusion

The objectives of this research are to analyze the determinant factors in performance of Indonesia's furniture export to European Union countries in the period of 1990-2008, and to analyze the influence of EU's Ecolabelling Regulation on Indonesia's furniture exports performance.

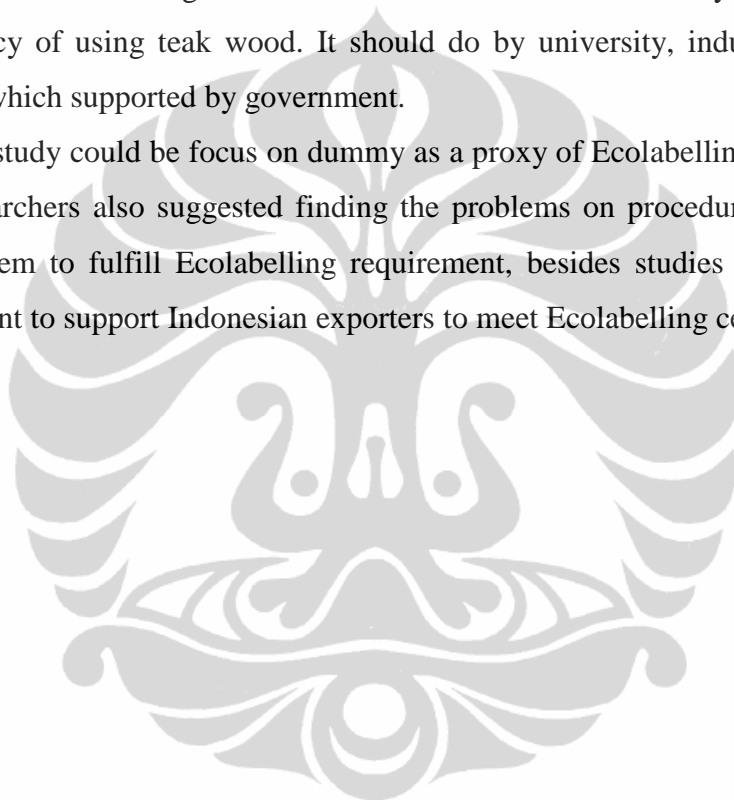
Based on the objectives above, it was conducted regression using panel data. In accordance with the result and analysis of regression, there are several points can be concluded, which is stated as follows:

- a. The result of determinant factors that influence the performance of Indonesia's furniture export as below;
  - Real per capita Gross Domestic Product (GDP) of trading partners has a positive impact on Indonesia's furniture export to EU countries.
  - Meanwhile real per capita GDP of Indonesia also has positive and significant impact on Indonesia's furniture export to EU countries.
  - The result also shows that proximity distance affect Indonesia's furniture export to EU countries negatively and significantly.
  - Real Exchange Rate influences positively and significant for Indonesia's furniture export to EU countries.
  - Moreover, four variables above are inelastic or not too responsive to the changes of Indonesia's export.
  
- b. Dummy Ecolabelling Regulation No 1980/2000 does not influence to Indonesia's export. The imposing of Ecolabelling standard gives positive effect to EU because furniture intra trade among members increase sharply post of establishment Ecolabelling regulation. On the other hand, the introducing the Ecolabelling standard give negative effect to the exporting country that must adapt the standard because it will incur high costs as they must adapt their products to conform to new regulations.

## 7.2. Recommendation

The establishment of Ecolabelling regulation influences positive for Indonesia furniture export into European Union countries. Therefore, to manage and increase Indonesia export, Government should take policy and strategy to meet the requirement and fulfill the standard. Moreover, government should overcome the obstacle in Indonesia furniture export. There are following strategy which should be taken to solve the problem:

1. Diversification of using kinds of wood in furniture industry to reduce dependency of using teak wood. It should do by university, industries, and exporter which supported by government.
2. The next study could be focus on dummy as a proxy of Ecolabelling cost. The next researchers also suggested finding the problems on procedure, process, and problem to fulfill Ecolabelling requirement, besides studies the role of government to support Indonesian exporters to meet Ecolabelling certificate.





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## Appendix 2: Fixed Effect Model

Dependent Variable: LOG(REAEXPORT?)

Method: Pooled Least Squares

Date: 11/13/09 Time: 22:59

Sample: 1990 2008

Included observations: 19

Cross-sections included: 10

Total pool (unbalanced) observations: 179

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	7.468810	0.011212	666.1676	0.0000
LOG(PGDPJ?)	2.99E-05	5.30E-05	0.564547	0.5732
LOG(PGDPI?)	0.009761	0.001158	8.427854	0.0000
LOG(DISTANCE?)	-0.001236	0.000212	-5.841944	0.0000
LOG(RER?)	0.002942	0.000246	11.94625	0.0000
NTBDUMMY?	2.56E-08	2.88E-08	0.891039	0.3742
Fixed Effects (Cross)				
_AUSTRIA—C	-0.000608			
_BELGIUM—C	-0.000518			
_DENMARK—C	-0.000567			
_FRANCE—C	0.000146			
_GERMANY—C	0.000166			
_ITALY—C	0.000296			
_NETHERLANDS—C	-0.000886			
_SPAIN—C	0.001718			
_SWEDEN—C	-6.32E-05			
_UK—C	4.69E-05			

### Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.920625	Mean dependent var	7.600524
Adjusted R-squared	0.913849	S.D. dependent var	0.002715
S.E. of regression	0.000797	Akaike info criterion	-11.35194
Sum squared resid	0.000104	Schwarz criterion	-11.08484
Log likelihood	1030.999	F-statistic	135.8670
Durbin-Watson stat	1.257368	Prob(F-statistic)	0.000000

### Appendix 4: Result of Hausman Test by Eviews 5.1

Correlated Random Effects - Hausman Test

Pool: WHITEHETERO

Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	43.598546	5	0.0000

\*\* Warning: estimated cross-section random effects variance is zero.

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
LOG(PGDPJ?)	0.000030	0.000028	0.000000	0.9556
LOG(PGDPI?)	0.009761	0.003948	0.000001	0.0000
LOG(DISTANCE?)	-0.001236	-0.001866	0.000000	0.0000
LOG(RER?)	0.002942	0.003768	0.000000	0.0000
NTBDUMMY?	0.000000	0.000000	0.000000	0.5293

Cross-section random effects test equation:

Dependent Variable: LOG(REALEXPORT?)

Method: Panel Least Squares

Date: 11/13/09 Time: 23:16

Sample: 1990 2008

Included observations: 19

Cross-sections included: 10

Total pool (unbalanced) observations: 179

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	7.468810	0.011212	666.1676	0.0000
LOG(PGDPJ?)	2.99E-05	5.30E-05	0.564547	0.5732
LOG(PGDPI?)	0.009761	0.001158	8.427854	0.0000
LOG(DISTANCE?)	-0.001236	0.000212	-5.841944	0.0000
LOG(RER?)	0.002942	0.000246	11.94625	0.0000
NTBDUMMY?	2.56E-08	2.88E-08	0.891039	0.3742

Effects Specification

Cross-section fixed (dummy variables)

### Appendix 5: The Result of White Cross Section

Dependent Variable: LOG(REAEXPORT?)  
 Method: Pooled EGLS (Cross-section weights)  
 Date: 11/13/09 Time: 03:16  
 Sample: 1990 2008  
 Included observations: 19  
 Cross-sections included: 10  
 Total pool (unbalanced) observations: 179  
 Linear estimation after one-step weighting matrix  
 White cross-section standard errors & covariance (d.f. corrected)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	7.460024	0.038199	195.2920	0.0000
LOG(PGDPJ?)	3.78E-05	4.03E-05	0.935963	0.3507
LOG(PGDPI?)	0.010090	0.004444	2.270551	0.0245
LOG(DISTANCE?)	-0.001140	0.000489	-2.329228	0.0211
LOG(RER?)	0.003272	0.000761	4.299818	0.0000
NTBDUMMY?	2.74E-08	3.23E-08	0.847481	0.3980
Fixed Effects (Cross)				
_AUSTRIA--C	-0.000579			
_BELGIUM--C	-0.000603			
_DENMARK--C	-0.000574			
_FRANCE--C	0.000136			
_GERMANY--C	0.000162			
_ITALY--C	0.000317			
_NETHERLANDS--C	-0.000930			
_SPAIN--C	0.001755			
_SWEDEN--C	-4.16E-05			
_UK--C	4.96E-05			

#### Effects Specification

Cross-section fixed (dummy variables)

Weighted Statistics			
R-squared	0.941151	Mean dependent var	8.463365
Adjusted R-squared	0.936127	S.D. dependent var	2.521201
S.E. of regression	0.000784	Sum squared resid	0.000101
F-statistic	187.3427	Durbin-Watson stat	1.078582
Prob(F-statistic)	0.000000		
Unweighted Statistics			
R-squared	0.937654	Mean dependent var	7.600524
Sum squared resid	0.000107	Durbin-Watson stat	1.271228

### Appendix 6: Data of All Independent Variables (2)

NO.	COUNTRY	YEAR	Real Export	PGDPj	PGDPi	Distance	RER	NTBDummy
4	France	1990	273795001	21665.4428	708.7521493	875996.6	7282.092859	0
		1991	370614473.2	21777.7352	781.1584716	860880.8	7208.871152	0
		1992	415350064.6	21967.7824	834.6921947	856562	7273.009854	0
		1993	578013015.9	21674.9268	939.0533149	844325.4	7186.644279	0
		1994	600242274.3	22074.8177	1035.718638	845045.2	7024.201715	0
		1995	650591581.7	22462.8712	1166.369888	867359	6858.305298	0
		1996	815637077.9	22633.9469	1290.748672	927102.4	6782.694133	0
		1997	502720333.6	23060.6278	1210.106896	929261.8	7882.446587	0
		1998	160106661.2	23782.5732	527.9785743	802577	17261.48672	0
		1999	512981608.4	24458.1426	763.9262665	878875.8	12110.04661	0
		2000	613795869.4	25243.1886	806.3181995	1125047.4	11008.0617	0
		2001	478196490.9	25526.9855	772.1518379	1102013.8	11877.11239	1
		2002	533469946.1	25604.2846	927.6053078	1037231.8	10326.1904	1
		2003	678233689.7	25702.0554	1099.121953	1179032.4	10925.4725	1
		2004	612774899.5	26145.9369	1187.402688	1384175.4	12040.65813	1
		2005	1087627430	26443.8608	1304.028101	1682892.4	12069.02127	1
		2006	483373469.7	26849.2671	1641.556359	1896673	10321.58646	1
		2007	470269522.9	27311.5038	1923.087195	2050710.2	10727.79525	1
		2008	385582048.2	27273.629	2251.050166	2387576.6	11379.58133	1
5	Germany	1990	494977654.9	21798.1662	708.7521493	815633.4	-	0
		1991	789625925.1	22734.0726	781.1584716	801559.2	7005.940308	0
		1992	1024615650	23064.203	834.6921947	797538	7232.839365	0
		1993	1398413455	22714.3077	939.0533149	786144.6	7387.7298	0
		1994	1256314074	23248.2623	1035.718638	786814.8	7286.11908	0
		1995	1256081160	23618.4695	1166.369888	807591	7238.962828	0
		1996	1170907706	23784.7988	1290.748672	863217.6	6952.16948	0
		1997	696254086.5	24167.95	1210.106896	865228.2	8050.626935	0
		1998	191916970.2	24665.5443	527.9785743	747273	17615.38812	0
		1999	683438144.7	25143.7776	763.9262665	818314.2	12372.12192	0
		2000	774227556.8	25918.9583	806.3181995	1047522.6	11221.98796	0
		2001	569149199.1	26191.9135	772.1518379	1026076.2	12145.26547	1
		2002	478622371.7	26146.8219	927.6053078	965758.2	10505.16733	1
		2003	601846539.8	26077.9891	1099.121953	1097787.6	11002.26685	1
		2004	602959053.9	26399.0065	1187.402688	1288794.6	12070.81463	1
		2005	1022462530	26614.9257	1304.028101	1566927.6	12069.02127	1
		2006	442828041.5	27435.4122	1641.556359	1765977	10318.94514	1
		2007	421892724.7	28145.6317	1923.087195	1909399.8	10809.56927	1
		2008	320438645.2	28551.2303	2251.050166	2223053.4	11441.70796	1
6	Italy	1990	222806091.7	21928.861	708.7521493	817824	7836.941282	0
		1991	356441567.9	22243.1127	781.1584716	803712	7999.25281	0
		1992	458200.4307	22406.5151	834.6921947	799680	7818.332093	0
		1993	440988323.2	22193.9375	939.0533149	788256	6635.197596	0
		1994	276745694.5	22666.9004	1035.718638	788928	6331.199881	0
		1995	314763418.4	23307.3164	1166.369888	809760	5696.508882	0
		1996	333855356.2	23555.99	1290.748672	865536	6213.629239	0
		1997	708184532.9	23984.3206	1210.106896	867552	7527.760188	0
		1998	47559599.61	24313.4529	527.9785743	749280	16556.20945	0
		1999	214467674.6	24665.3088	763.9262665	820512	11718.76206	0
		2000	252177865.2	25564.6566	806.3181995	1050336	10741.10788	0
		2001	207215011.8	26013.4418	772.1518379	1028832	11716.88869	1
		2002	256035.8554	26049.171	927.6053078	968352	10240.92154	1
		2003	311020695.3	25842.5251	1099.121953	1100736	10898.43544	1
		2004	361362.3986	25981.0328	1187.402688	1292256	12020.06344	1
		2005	918337830	25958.803	1304.028101	1571136	12069.02127	1
		2006	280157094.8	26337.0133	1641.556359	1770720	10371.36528	1
		2007	248802647	26553.4389	1923.087195	1914528	10815.70753	1
		2008	184809011.7	26051.9182	2251.050166	2229024	11528.19167	1

### Appendix 6: Data of All Independent Variables (4)

NO.	COUNTRY	YEAR	Real Export	PGDPj	PGDPi	Distance	RER	NTBDummy
10	_UK	1990	311938003	20860.9586	708.7521493	885732.6	3682.573841	0
		1991	419785947.1	20498.1408	781.1584716	870448.8	3803.319555	0
		1992	555270524	20476.1505	834.6921947	866082	3827.155078	0
		1993	678689734.6	20884.3982	939.0533149	853709.4	4282.926847	0
		1994	700102459.6	21722.5821	1035.718638	854437.2	4106.31689	0
		1995	666037343.8	22320.6649	1166.369888	876999	3918.024609	0
		1996	978728529.9	22908.4564	1290.748672	937406.4	3914.221892	0
		1997	928250288.6	23605.2023	1210.106896	939589.8	4501.10741	0
		1998	223347980	24389.0063	527.9785743	811497	10001.18551	0
		1999	548737083.4	25146.2183	763.9262665	888643.8	6768.683882	0
		2000	646010827.4	26041.0644	806.3181995	1137551.4	7686.522291	0
		2001	550156338.8	26579.6894	772.1518379	196506	9003.751431	1
		2002	547385266	27041.3339	927.6053078	1048759.8	7119.227069	1
		2003	571604086.6	27695.0532	1099.121953	1192136.4	5816.35202	1
		2004	634786094.5	28325.6531	1187.402688	1257642	5241.554708	1
		2005	1154986630	28724.1335	1304.028101	1701596.4	5331.081081	1
		2006	462084836.4	29359.3715	1641.556359	1917753	4535.120909	1
		2007	463648439.2	30149.1907	1923.087195	2073502.2	4086.071596	1
		2008	341119356.5	-	2251.050166	2414112.6	4423.322169	1

