

# CHAPTER I

## INTRODUCTION

### 1.1. Background

International trade which more complex indicates that international trade is not sufficiently explained by traditional trade theory based on the theory of comparative advantage. The development of trade that happened was not so, so that the emerging concept of new trade called intra-industry trade (IIT), which is a trade where the value of exports of an industry from a country is balanced by the import of the same industry from other countries (Sawyer et al 2010). This condition has become a trend after several empirical studies of international trade have been made which lead to the argument that trade between industrialized countries is not enough to just be explained by the theory of comparative advantage. Since the 1960s, intra-industrial trade has been extensively studied, thus raising several new arguments such as research conducted by Balassa and Krugman regarding research on customs union in Europe (Phan, 2014). Customs union is a research related to the positive impacts resulting from the agreement, including the elimination of all forms of trade barriers and uniform trade policy among members.

Modern economies in various countries no longer produce similar products, but products vary. If a country can export and import a commodity such as manufacturing, then the country can still produce other commodities such as primary products. This will involve the exchange of products from the same industrial sector or referred to as Intra Industry Trade / IIT (Salvatore, 2014).

Krugman (2012) states that in intra-industry trade will provide a greater gain from trade for a country than if the country does not integrate its market with other countries. In addition, the enactment of trade schemes imposed by a country on other countries can increase trade flows in terms of goods and services.

In intra-industrial trade (IIT) the diversity of products produced to meet the needs of a country or export tends to increase market size resulting in the achievement of economic scale. In addition, larger markets will tend to have greater demand for foreign goods so that the potential of IITs is high (Helpman & Krugman, 1985).

Trade liberalization resulted in an increase in trade flows between goods and services between countries. In increasing international trade Indonesia has established bilateral relations with various trade partner countries. As an illustration based on data from BPS there are ten Indonesian export and import commodities according to the 1 digit SITC (Standard International Trade Classification) category. The total export commodities of Indonesia in 2014-2016 according to the 1 digit Standard International Trade Classification category, as shown in Table 1.1 of the commodities that have a major role in Indonesia's total exports are Mineral fuels, lubricants, and related materials (SITC 3). Export values for Mineral fuels, lubricants, and related materials experienced a fluctuating decline from 2014 of 51,069.7 million dollars, to 27,887.2 million dollars in 2016. Based on BPS data on Indonesia's exports and imports from the 1-digit SITC category still dominated by manufactured goods and petroleum and natural gas.

Table 1.1. Value of Export by SITC Group (million US\$)  
2014–2016

SITC code	Classification name	2014	2015	2016
0	<i>Food and live animals</i>	12,070.1	11,600.8	11,638.0
1	<i>Beverages and tobacco</i>	1,101.6	1,075.4	1,140.3
2	<i>Raw materials, inedible</i>	13,072.8	12,766.0	12,434.1
3	<i>Mineral fuels, lubricants, and related materials</i>	51,069.7	34,648.6	27,887.2
4	<i>Animal and vegetable oils and fats</i>	20,204.7	18,006.2	17,489.7
5	<i>Chemicals</i>	13,163.9	10,047.4	11,034.6
6	<i>Manufactured goods classified by materials</i>	22,683.9	20,585.9	20,116.0
7	<i>Machinery and transport equipment</i>	21,779.1	19,777.0	20,866.3
8	<i>Miscellaneous manufactured articles</i>	19,301.7	20,429.3	21,129.6
9	<i>Commodities and transactions not further specified</i>	1,532.5	1,429.7	1,450.4
<b>Total</b>		<b>175,980.0</b>	<b>150,366.3</b>	<b>145,186.2</b>

Source : Badan Pusat Statistik 2017, processed.

As for the export of commodities that play a major role in total imports are Machinery and transport equipment (SITC 7). The highest declined on Indonesia's total imports is on Mineral fuels, lubricants, and materials sector decreased to 27,887.2 million dollars in 2016 from 51,069,7 million dollars in 2014. Based on Table 1.1 the export value for five commodities in the manufacturing sector was 87.49 percent of total imports in 2014 and 86.65 percent in 2016. It can be concluded that the manufacturing sector plays a major role in Indonesia's international trade, when compared to other sectors.

Table 1.2. Value of Import by SITC Group (million US\$)  
2014–2016

SITC Code	Classification Name	2014	2015	2016
0	<i>Food and live animals</i>	14,587.4	12,244.9	13,746.2
1	<i>Beverages and tobacco</i>	789.2	563.3	653.3
2	<i>Raw materials, inedible</i>	9,176.8	7,354.1	7,078.8
3	<i>Mineral fuels, lubricants, and related materials</i>	43,928.7	25,028.0	19,241.1
4	<i>Animal and vegetable oils and fats</i>	144.4	131.6	144.5
5	<i>Chemicals</i>	23,779.3	21,203.4	19,999.4
6	<i>Manufactured goods classified by materials</i>	26,854.6	23,635.9	22,623.8
7	<i>Machinery and transport equipment</i>	52,145.8	45,444.2	43,896.0
8	<i>Miscellaneous manufactured articles</i>	6,746.9	6,383.9	7,437.0
9	<i>Commodities and transactions not further specified</i>	25.7	705.5	832.7
<b>Total</b>		<b>178,178.8</b>	<b>142,694.8</b>	<b>135,652.8</b>

Source: Badan Pusat Statistik 2009-2013, processed.

Based on Table 1.2 the import value for five commodities in the manufacturing sector amounted to 68.3 percent of total imports in 2014 and 66.14 percent in 2016. The first highest declined on Indonesia's total imports is on Mineral fuels, lubricants, and materials sector from 43,928.7 million dollars in 2014 become 19,241.1 million dollars in 2016. The second higher declined on Indonesia's total imports is on Machinery and transport equipment sector from 52,145.8 million dollars in 2014 become 43,896.0 million dollars in 2016. It can be concluded that the manufacturing sector plays a major role in Indonesia's international trade, when compared with other sectors.

The SITC (Standard International Trade Classification) is a statistical classification of commodities entering external trade both exports and imports. The code is designed for the purposes of economic analysis and allows to compare commodities traded by country or year. This classification system is managed by the United Nation, and currently there is a revised SITC four, which was announced in 2006 (<http://unctadstat.unctad.org>, 2017).

Regarding to GDP, Sawyer et al. (2010) stated that in some countries, exports have become a major contributor to the increase in GDP (Gross Domestic Product) as well as Japan, Korea and Singapore where since 1960 they have carried out export-oriented strategies. For example, South Korea, export contribution rose from 1960 by 3% to 46% in 2017. Researchers from the Institute for Development of Economics and Finance Andy S, said Indonesia's main export commodities as the largest contributor to the largest GDP in 2017 include the processing industry where reaching 20.16%, (Andi et al, 2018).

In 2016 BPS foreign trade statistics bulletin shows that Indonesia's exports from January to December 2016 reached a volume of 513,643.4 thousand tons with a value of US \$ 144,489.9 million, consisting of US \$ 13,105.5 million for oil and gas exports, and the US \$ 131,384.4 million for the export of non-oil and gas commodities. When compared to the same period in 2015, export value in 2016 has decreased due to a decline in oil and gas exports worth US \$ 5,468.9 million, and a decline from the non-oil and gas group of US \$ 407.5 million. On the other hand, the agricultural sector is one of the biggest absorbers of labor, but export value in 2016 was only 2.38%. This shows that the role of the agricultural

sector is not strong enough in trade, especially Indonesia's exports, although it is able to absorb more labor.

From 1991 to 2017 there was an increase in trade both exports and imports carried out by Indonesia to various trading partner countries. For example, in 1991 exports for the SITC 0 category for Thailand amounted to 85 million US \$ to 552 million US \$ in 2017; Malaysia amounted to 48 million US \$ to 730 million US \$ ; India amounted to 4 million US \$ to 254 million US \$ and so on. This shows that there has been an increase in the flow of commodity trade in Asian countries, especially Indonesia with its trading partner countries in recent years (Comtrade, 2017).

One of the main destination countries for Indonesia's export commodities is China, as well as the largest import country, especially for industrial products. The magnitude of the import value for industrial products according to the 30 countries of origin of the largest imports puts China in first place. In the period of 2012 to 2015 the value of imports of industrial products amounted to US \$ 27 billion in 2012, US \$ 28 billion in 2013, then reached US \$ 29 billion in 2014, and US \$ 28 billion in 2015. Although it was seen in 2015 declining but the trend still shows a positive number of 0.65% (Kemendag.go.id, 2015).

On the other hand Industrial products are Indonesia's main export commodity in the non-oil and gas category, as described in the Indonesian export bulletin by BPS that in 2016 the value of industrial exports reached 75.99%, which was valued at 109,797.3 million US \$. This proves that Indonesia imports and exports goods classified in the same sector, namely in the industrial sector, in



other words intra-industrial trade has taken place between Indonesia and China, as well as Indonesia with other countries.

To find out more deeply how intra-industry trade occurs, since the introduction of intra-industry trade (IIT) concept in the 1960s, several empirical studies have investigated the determinants of this trade, such as Grubel and Llyod. (1975) introduced a comprehensive index to measure IIT, where the index would describe the level of integration of intra-industry trade.

The value of intra industry trade index has a value between 0 and 100. If the trading transaction is one-way trade, the index will be 0. If the index value is closer to 100, the index value will also increase the role of intra-industrial trade (two-way trade). The degree of integration level will be determined according to the following IIT index classification (Austria, 2004) 0,00 means that there is no integration (one way trade); 0,00 > 24,99 has weak integration; 25,00–49,99 moderate the integration; 50,00–74,99 the integration is rather strong (moderately strong integration); and 75,00–99,9 has Strong integration.

The trade index introduced by Grubel and Llyod (IIT Index) is a trade index between countries which shows the existence of exporting activities while importing goods or services that are classified in the same sector simultaneously. The use of this index will indicate the trade carried out by the country concerned, which is one-way trade, or two way trade, in other words, the countries concerned play a major role in intra-industrial trade.

Nizar (2007), in his research related to the pattern of trade between Indonesia and several Asian countries shows that in the period 1992 to 2005, there was a significant increase in trade flows, especially in manufactured products

(SITC 5-8). The high intra-industry trade between Indonesia and its trading partners is inseparable from the influence of the economic development of the countries concerned. Nevertheless, the study said that Indonesia's trade with countries in the Asian region was still dominated by inter-industrial trade (one way trade).

Other research related to IIT conducted by Umemoto (2005) concerning to the intra-automobile trade between Korea and Japan shows that there has been a rapid increase in the trade between the two countries, especially for automobile parts since 1999. This is seen from the large Grubel-Lloyd index of 32, 4%. In the study mentioned that several factors influence the IIT, including the average GDP, and the difference in GDP, foreign direct investment, distance and so forth.

Kemal and Aysegul (2010) in the intra-industry trade research at U.S auto-industry showed that in the period 1989 to 2006 there had been important developments that reshaped the structure of the automotive industry with 37 of its main trading partners. The results showed that there had been an increase in intra-industry trade in US auto industry, although it was still dominated by inter-industry trade with a market share of 79% of total trade in 2006. Several factors affecting the intra-US auto mobile industry trade in the study included foreign direct investmen, differences in GDP, differences in GDP per capita, and so on.

Another factor that can influence the volume of international trade is the exchange rate because the exchange rate will change the relative price of goods and services that are traded (Mankiw, 2007). The following Table 01 shows a list of Indonesian country exchange rates with 8 trading partners in the Asian region



in 2010 to 2015 per US \$ as an illustration of fluctuations in the exchange rate of trading partner countries:

**Table 1.3. Domestic Currency Exchange Rate 2010-2015 (Per US \$)**

Country	Domestic Currency Exchange Rate per US \$				
	2011	2012	2013	2014	2015
China	7.78	7.76	7.76	7.75	7.75
Indonesia	8,770.43	9,386.63	10,461.24	11,865.21	13,389.41
Japan	79.81	79.79	97.59	105.94	121.04
Korea	1,108,29	1,126.47	1,094.85	1,052.96	1,131.15
Malaysia	3.06	3.08	3.15	3.27	3.91
Singapore	1.25	1.25	1.25	1.26	1.37
Thailand	30.49	31.08	30.72	32.47	34.24

Source: World Bank

A stable currency indicates that the country has relatively stable or good economic conditions (Salvatore, 2003). The table above shows that there are several trading partner countries that have stable currency, namely China, Malaysia and Singapore. The higher the relative price of an item / service in a partner country, the lower the volume of import of partner countries, and vice versa. In addition to the relative price of the traded goods / services, in a trade there will be a fee for both administrative costs, transportation costs (outbound / entrance fee), fees, and so forth. When viewed from the side of distribution, the costs required in trading certainly cannot be separated from transportation costs. The distance and distance between countries that trade will affect the amount of transportation costs.

Several studies have shown that distance can negatively affect IIT, (Balassa, 1987; Sawyer et al., 2010; Umemoto, 2005; and Kemal et al., 2010). The farther distance of a reporter country and partner country will certainly

require higher transportation costs compared to countries with a closer distance. Other costs include insurance costs and transportation costs.

However, this research differs with the previous study include the length period of study from 1991 to 2017, some different variable, and different model (*Random Effect Model*). Which studying about the condition of Indonesian trade with several trading partners before Indonesia's crisis and after Indonesia's crisis.

This study will discuss and analyze the degree of integration of intra-industry trade in several sectors. The commodity categories of goods traded by Indonesia with several trading partners in the Asian region include products categorized in 1-digit SITC. The trading partner was chosen based on the value of Indonesia's exports and imports with several trading partners in 1991 to 2017.

The selection of partner countries is based on the largest export and import destination countries, table 1.3. The following are data from Kemendag.go.id in 2013 to 2015 regarding the largest trading partners. This shows that there is a two-way trade interaction between the two countries that allows for intra-industry trade.

**Tabel 1.4. Non-Oil Gas Exports-Imports (Major Destination Countries in Million US \$) in 2013 - 2015**

Country	2013		2014		2015	
	Export	Import	Export	Import	Export	Import
China	21.281	29.570	16.459	30.461	13.260	29.224
Japan	16.084	19.054	14.565	16.938	13.096	13.232
India	13.009	10.158	12.223	10.150	11.601	8.975
Singapore	10.385	10.613	10.065	9.694	8.661	8.018
Malaysia	7.268	8.813	6.397	7.756	6.227	6.278
South Korea	6.052	5.929	5.716	5.778	5.439	4.979
Thailand	5.214	4.829	5.002	5.490	4.600	4.672

Philipina	3.798	2.716	3.886	3.225	3.917	3.161
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Source: kemendag.go.id

From the export destinations in table 1.3, China became the biggest import of non-oil and gas products in Indonesia from 2013 to 2015 followed by Japan and Singapore. Nevertheless China is also the largest country of origin for non-oil and gas products. Likewise with Thailand, the value of exports and imports of non-oil and gas in the period was almost the same. This allows trade in similar industries or the occurrence of intra-industrial trade.

This research was conducted to see how the relationships of variables such as GDP, GDP per capita, FDI, and exchange rate affect intra-industrial trade in Indonesia. The results of this study are expected to be useful for the government and related institutions in the formulation of policies and planning to expand and strengthen trade in the main commodities in the Asian region, both to strengthen trade in export commodities and to optimize employment in a sector.

Based on the description of the background above, researchers are interested in researching related intra-industrial trade between Indonesian countries and seven trading partners in the Asian region. The seven countries are the biggest trading partner of Indonesia export and import. Therefore,

researchers conducted research with the title "**PATTERNS AND DETERMINANTS OF INTRA INDUSTRY TRADE OF INDONESIA WITH SEVEN ASIAN COUNTRIES TRADING PARTNERS PERIOD OF 1991-2017**".

## **1.2 Research Problem**

Based on the background above, the following problems can be identified:

1. How does the GDP difference affect Indonesia's intra-industry trade with seven asian trading partner countries?
2. How does GDP per capita affect Indonesia's intra-industry trade with seven asian trading partner countries?
3. How does foreign direct investment affect Indonesia's intra-industry trade with seven asian trading partner countries?
4. How does the exchange rate affect Indonesia's intra-industrial trade with seven asian trading partner countries?

### **1.3 Research Objective**

Based on the formulation of the problem, the research objectives to be achieved in this study are:

1. Analyzing the effect of GDP differences on Indonesia's intra-industry trade with seven trading partner countries in the Asian region in 1991 - 2017.
2. Analyzing the effect of differences in GDP per capita on Indonesia's intra-industry trade with seven trading partner countries in the Asian region in 1991 - 2017.
3. Analyzing the influence of Foreign Direct Investment on Indonesia's intra-industry trade seven trading partner countries in the Asian region in 1991 - 2017.
4. Analyzing the influence of the exchange rate on Indonesian intra-industry trade with seven trading partner countries in the Asian region in 1991 - 2017.

5. Analyzing the influence of differences in GDP, differences in GDP per capita, foreign direct investment, and the exchange rate together for Indonesia's intra-industry trade with seven trading partners in the Asian region in 1991 - 2017 .

#### **1.4 Research Advantages**

The benefits that can be drawn from this study include the theoretical benefits and practical benefits, namely:

##### **1. Theoretical Benefits**

The results of this study are expected to be useful in expanding knowledge and insights related to international trade, especially understanding of trade in the Indonesian Intra-Industry Trade (IIT) trade with some of the main partners in the Asian region for the period 1991 - 2017. In addition the results of this study indicate several factors that influence Indonesia's intra-industry trade includes differences in market size, economic conditions, and other factors. The results of this study are expected to be a reference for future research.

##### **2. Practical benefits**

###### **a. For students**

This research is a research related to international trade that studies the Intra Industry Trade (IIT) that occurs in Indonesia. This research is expected to be one of the sources of knowledge and insight during lecture activities.

###### **b. For researchers**



The results of this study are expected to increase knowledge, experience, and insight for researchers in presenting research related to international trade, especially intra-industry trade. In addition, researchers can contribute directly in improving reading and data sources to the public.

### **1.5 Limitation of Study**

Based on the background and identification of the problems described above, the problem limitation is needed to focus on the problem under study. The research is limited to factors that influence trade, namely differences in GDP (Different of GDP), differences in GDP per capita, Foreign Direct Investment (FDI), and different on currency exchange rates (Dex) on Indonesia's intra-industry trade (IIT) with several trading partners in the Asian region in 1991 - 2017.

### **1.6. Systematic of Writing**

Systematic writing using description in this research, in systematically this research divide by six chapters, the arrangement of this research becomes:

- a. Chapter I is an introductory section consisting of background, formulation of the problem, objectives, benefits, research limitations and writing systematics.
- b. Chapter II is a theoretical framework that is used as a guide and reference in research.
- c. Chapter III is a research method that explains about research methods and therapeutic framework that has relations with the variables, operational

definitions of variables, collect all data, source of data, methods and data analysis methods.

d. Chapter IV discusses the development of intra-industrial trade in Indonesia, the variables that affect intra-industrial trade in Indonesia.

e. Chapter V discusses the results of research, consisting of the results of data processing, analysis of estimation results and policy implications.

f. Chapter VI is a conclusion and suggestion.

