CHAPTER II

LITERATURE REVIEW

2.1 Theory

2.1.1 Exchange Rate

Exchange rate is the price of a countries currency in terms of another countries currency. The exchange rate between two countries is the price at which residents of those countries trade with each other. The exchange rate includes of two component, those are Nominal Exchange Rate and Real Exchange Rate. Nominal Exchange Rate is the relative price of the currencies of two countries. While Real Exchange Rate is the relative price of goods in two countries (Mankiw, 2006).

The exchange rate is the ratio between the prices of the currency of a country with the currency of other countries. For example, rupiah exchange rate against U.S. dollar show how the rupiah needed to be switched with one American dollar. (Musdholifah & Tony, 2007). Exchange rates is the exchange between two different currencies, namely the value or price comparison is between the two currencies. (Triyono, 2008).

Heru (2008) States that exchange rates reflect the balance of supply and demand towards domestic currency foreign currency $US. The exchange rate of rupiah against foreign currencies had a negative influence whatsoever against the economy and stock market. With the depreciation of the exchange rate of

rupiah against foreign currencies will lead to rising costs of imported raw materials to be used for production and also increase the interest rates.

A drop in the currency reflects declining demand of domestic currency because of the declining role of the national economy or because of the growing demand for foreign currency ($US) as means of international payments. Strengthened currency to some extent means describing the performance of money market increasingly showed improvement. As the impact of rising inflation rate then the domestic exchange rate weakened against foreign currencies. This resulted in a decrease in the performance of an enterprise and investment in capital markets be reduced.

To see the relation between the real and nominal exchange rates, consider a single good produced in many countries: cars. Suppose an American car costs $10,000 and a similar Japanese car costs 2,400,000 yen. To compare the prices of the two cars, we must convert them into a common currency. If a dollar is worth 120 yen, then the American car costs 1,200,000 yen. Comparing the price of the American car (1,200,000 yen) and the price of the Japanese car (2,400,000 yen), we conclude that the American car costs one-half of what the Japanese car costs. In other words, at current prices, we can exchange 2 American cars for 1 Japanese car.

$$Real\ Exchange\ Rate = \frac{\left(120\frac{yen}{dollar}\right) \times \left(10,000\frac{dollars}{American\ car}\right)}{\left(2,400,000\frac{yen}{Japanese\ car}\right)}$$

$$= 0,5\ \frac{Japanese\ car}{American\ car}$$

At these prices and this exchange rate, we obtain one-half of a Japanese car per American car. More generally, we can write this calculation as

$Real\ Exchange\ Rate$

$$= \frac{Nominal\ exchange\ rate\ \times Price\ of\ domestic\ goods}{Price\ of\ foreign\ goods}$$

The rate at which exchange foreign and domestic goods depends on the prices of the goods in the local currencies and on the rate at which the currencies are exchanged.The real exchange rate between two countries is computed from the nominal exchange rate and the price levels in the two countries. *If the real exchange rate is high, foreign goods are relatively cheap, and domestic goods are relatively expensive. If the real exchange rate is low, foreign goods are relatively expensive, and domestic goods are relatively cheap.* (Mankiw, 2006).

Real Exchange Rate = Nominal Exchange Rate × Ratio of Price Leve

$$e = e \times (P/P^*)$$

This equation shows that the nominal exchange rate depends on the real exchange rate and the price levels in the two countries. Given the value of the real exchange rate, if the domestic price level P rises, then the nominal exchange rate e will fall: because a dollar is worth less, a dollar will buy fewer yen. However, if the Japanese price level P* rises, then the nominal exchange rate will increase: because the yen is worth less, a dollar will buy more yen.*If a country has a high rate of inflation relative to the United States, a dollar will buy an increasing amount of the foreign currency over time. If a country has a low rate of inflation relative to the United States, a dollar will buy a decreasing amount of the foreign currency over time.* (Mankiw, 2006).

2.1.2 Exchange Rate Regime

Exchange rate regime refers to the 'way' the value of the domestic currency in term of foreign currencies is determined. It is closely related to monetary policy and the two are generally dependent on many of the same factors. Exchange rate regimes can broadly be categorized into two extremes, namely fixed and floating. Exchange rate regimes are typically divided into three broad categories.

At one end of the spectrum are *hard exchange rate pegs* (Fixed Exchange Rate).These entail either the legally mandated use of another country's currency (also known as full dollarization) or a legal mandate that requires the central bank to keep foreign assets at least equal to local currency in circulation and bank reserves (also known as a currency board). Panama, which has long used the U.S. dollar, is an example of full dollarization, and Hong Kong SAR operates a currency board. Hard pegs usually go hand in hand with sound fiscal and structural policies and low inflation. They tend to remain in place for a long time, thus providing a higher degree of certainty for pricing international transactions. However, the central bank in a country with a hard exchange rate peg has no independent monetary policy because it has no exchange rate to adjust and its interest rates are tied to those of the anchor-currency country.

In the middle of the spectrum are *soft exchange rate pegs* (Managed Float) that is, currencies that maintain a stable value against an anchor currency or a composite of currencies. The exchange rate can be pegged to the anchor within a

narrow (+1 or -1 percent) or a wide (up to +30 or –30 percent) range, and in some cases, the peg moves up or down over time, usually depending on differences in inflation rates across countries. Costa Rica, Hungary, and China are examples of this type of peg. Although soft pegs maintain a firm "nominal anchor" (that is, a nominal price or quantity that serves as a target for monetary policy) to settle inflation expectations, they allow for a limited degree of monetary policy flexibility to deal with shocks. However, soft pegs can be vulnerable to financial crises which can lead to a large devaluation or even abandonment of the peg and this type of regime tends not to be long lasting.

At the other end of the spectrum are *floating exchange rate regimes*. As the name implies, the floating exchange rate is mainly market determined. In countries that allow their exchange rates to float, the central banks intervene (through purchases or sales of foreign currency in exchange for local currency) mostly to limit short-term exchange rate fluctuations. However, in a few countries (for example, New Zealand, Sweden, Iceland, the United States, and those in the euro area), the central banks almost never intervene to manage the exchange rates. Floating regimes offer countries the advantage of maintaining an independent monetary policy. In such countries, the foreign exchange and other financial markets must be deep enough to absorb shocks without large exchange rate changes. Also, financial instruments must be available to hedge the risks posed by a fluctuating exchange rate. Almost all advanced economies have floating regimes, as do most large emerging market countries (Mark, Harald, and Romain, 2008)

A floating exchange rate, by definition results in an equilibrium rate of exchange that will move up and down according to a change in demand and supply forces. The process by which currencies float up and down following a change in demand or change in supply forces is, thus, illustrated in figure 2.1
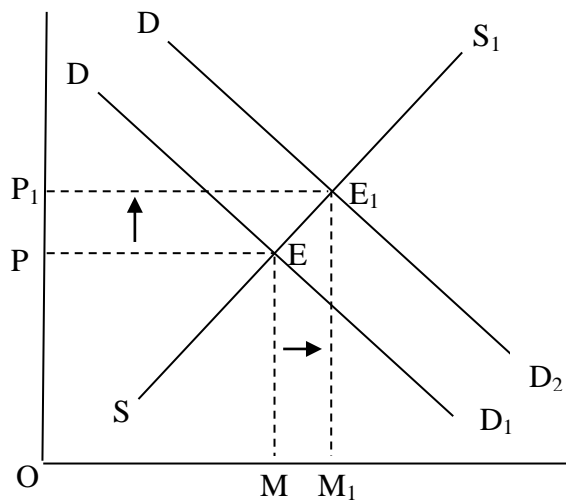
Figure 2.1
Equilibrium Exchange Rate

Assume that national income rises. This results in an increase in the demand for imports of goods and services and, hence, demand for dollar rises. This result in a shift in the demand curve from DD_1 to DD_2. Consequently, exchange rate rises as from OP to OP_1 determined by the intersection of new demand curve and supply curve.

2.1.3 Exports

Exports are the goods and services made in one country and transmitted to the other countries by trading. The sale of such goods adds to the producing nation's gross output. If used for trade, exports are exchanged for other products

or services. Exports are one of the oldest forms of economic transfer, and occur on a large scale between nations that have fewer restrictions on trade, such as tariffs or subsidies.

Exports is selling the domestic product produced by domestic producer to the oversea or out of the state. Out of State means, out of the customs area of the country or out of the jurisdiction of the State (Purba, 1997). Export is the attempt of doing the sales that the country have to deliver the goods or servicesto foreign country in accordance with the provisions of the Government expects payment in foreign currency (Amir, 2004). So the results obtained from the exporting activity is either a value of an amount of money in foreign currency or foreign exchange, which is also one of the sources of revenue of the state. So the export trade activities is stimulating the domestic demand that causes the shockof large factory industries, along with a stable positive structures and efficient social institution (Todaro, 2000).

Export is one of the sectors of the economy that play an important role through the expansion of markets and industrial sectors that will encourage other industrial sector and economy (Meier, 1996:313). In conclusion, export is a source of foreign exchange for market expansion plus the production of domestic goods and the expansion of the labor (Marie Muhammad, www.fiskal.depkeu.go.id). In Robert Mundell's theory of open economy state that the international trade will have a big influence to the trade balance and give an influence to the country if their export are bigger then import (X>M),

through this assumption many states stripped to open their economic and conducting international trade in order to achieves the export expansion.

There are at least three roles of export in the economy;

- Expanding several product to the worldwide market in order to achieves the economic growth, as mantioned by the clasical economic theory which state that, an industry can grow quickly if the industry can sell the results across oceans rather than only in the narrow country market.

- Export creates new effective demand. So, the domestic producers are looking for innovations that are intended to increase productivity.

- Expansion of export activities facilitates development, because of the narrowness of the domestic market due to a low rill income level or the relationship of adequate transportation.

Thus, beside of increasing the domestic production, exports increasing the domestic demand as well. Effective demand which constitute demand with the ability to buy from the people, can effect the welfare of the country. So that the external demand indirectly affect the domestic producers to optimizing their production.

2.1.6.1   Exports Type

According to Mankiw (2010), there are two type of exports, namely;

a.   Direct Export

Direct export is a way of selling goods or services via an intermediate or exporter located in another country of destination of the

export. Sales made through a distributor and representative of company sales. The benefit, the production is centered in the State of origin and the control of distribution is better. The disadvantage, transport costs are higher for products on a large scale and the presence of trade barriers and protectionism.

b. Indirect Export

Indirect export is a technique where the goods sold through intermediary or exporter country of origin then sold by middlemen. Through the export company's management, and exporting companies. The benefits of concentrated production resources, and do not need to handle export directly. His weaknesses, control over distribution less and knowledge against the operation in other countries are less.

2.1.4 Imports

Import is a good or service brought into one country from another. The word "import" is derived from the word "port," since goods are often shipped via boat to foreign countries. Along with exports, imports form the backbone of international trade; the higher the value of imports entering a country, compared to the value of exports, the more negative that country's balance of trade becomes.

In international trade statistic imports has the negative relationships with trade balance, mports are contrats with the exports. Imports demand are depend on relative price of domestic and foreign goods. The volume and value of imports will be affected by the domestic output and the relative price between

domestic goods and foreign goods. Imports are contrast with exports. We can say that exports is injection to the economics, but imports is vice versa.

$$m = {\Delta M}/{\Delta Y}$$

Where is

m = Marginal propensity to consume,

ΔM = added imports,

ΔY = added exports.

Imports are determined by the ability to produce the product that can compete the foreign product. Which mean, the imports value is depend on national income. The highest the national income, the weakest ability to produce the domestic product, which mean the highest country will imports. It will impact to the negative trade balance and national income. The relationship between imports and national income will be explain in this equation.

$$M = Mo + mY$$

Where : M = Total Exports

Mo = Unaccounted total export

m = Marginal propensity to import

Y = National income

2.1.5 The Real Exchange Rate and the Trade Balance

Suppose first that the real exchange rate is low. In this case, because domestic goods are relatively cheap, domestic residents will want to purchase fewer imported goods. For the same reason, foreigners will want to buy many of our goods. As a result of both of these actions, the quantity of our net exports demanded will be high. The opposite occurs if the real exchange rate is high. Because domestic goods are expensive relative to foreign goods, domestic residents will want to buy many imported goods, and foreigners will want to buy few of our goods. Therefore, the quantity of our net exports demanded will be low.

We write this relationship between the real exchange rate and net exports as.

$$NX = NX(\epsilon)$$

This equation states that net exports are a function of the real exchange rate. From the explaination above, there are two analysis that explain what factors that determine the real exchange rate. (Mankiw, 2006)

- The real exchange rate is related to net exports. When the real exchange rate is lower, domestic goods are less expensive relative to foreign goods, and net exports are greater.

- The trade balance (net exports) must equal the net capital outflow, which in turn equals saving minus investment. Saving is fixed by the consumption

function and fiscal policy; investment is fixed by the investment function

and the world interest rate.

2.1.6   Theories

2.1.6.1   *Trade Based on Absolute Advantage: Adam Smith*

According to Adam Smith, trade between two nations is based on

absolute advantage. When one nation is more efficient than (or has an

absolute advantage over) another in the production of one commodity but is

less efficient than (or has an absolute disadvantage with respect to) the other

nation in producing a second commodity, then both nations can gain by each

specializing in the production of the commodity of its absolute advantage

and exchanging part of its output with the other nation for the commodity of

its absolute disadvantage. Adam Smith (and the other classical economists

who followed him) believed that Free trade would cause world resources to

be utilized most efficiently and would maximize world welfare.

The illustration of absolute advantages theory will be shown below:

Table 2.1
Absolute Advantages

	U.S.	U.K.
Wheat (bushels/hour)	6	1
Cloth (yards/hour)	4	5

Source: D. Salvatory 11th edition (page 35)

Table 2.1 shows that in the U.S., one hour of labor time produce six

wheat and only one in the United Kingdom. On the other hand it shows the

one labor time produce five cloth in the United Kingdom but only four in the

United States. Thus, the United States is more efficient than, or has an absolute advantage over, the United Kingdom in the production of wheat, whereas the United Kingdom is more efficient than, or has an absolute advantage over, the United States in the production of cloth. With trade, the United States would specialize in the production of wheat and exchange part of it for British cloth. The opposite is true for the United Kingdom.

If the United States exchanges six bushels of wheat (6W) for six yards of British cloth (6C), the United States gains 2C or saves 1/2 hour or 30 minutes of labor time (since the United States can only exchange 6W for 4C domestically). Similarly, the 6W that the United Kingdom receives from the United States is equivalent to or would require six hours of labor time to produce in the United Kingdom. These same six hours can produce 30C in the United Kingdom (6 hours' times 5 yards of cloth per hour). By being able to exchange 6C (requiring a little over one hour to produce in the United Kingdom) for 6W with the United States, the United Kingdom gains 24C, or saves almost five labor - hours.(D. Salvatory *11th edition, 2012)*

2.1.6.2 *Trade Based on Comparative Advantage: David Ricardo*

According to the law of comparative advantage, even if one nation is less efficient than (has an absolute disadvantage with respect to) the other nation in the production of both commodities, there is still a basis for mutually beneficial trade. The first nation should specialize in the production and export of the commodity in which its absolute disadvantage is smaller (this is the commodity of its comparative advantage) and import the

commodity in which its absolute disadvantage is greater (this is the commodity of its comparative disadvantage).

The illustration of comparative advantages will be show below:

Table 2.2
Comparative Advantages

	U.S.	U.K.
Wheat (bushels/hour)	6	1
Cloth (yards/hour)	4	2

Source: D. Salvatory 11th edition (page 37)

The only difference between Tables 2.2 and 2.1 is that the United Kingdom now produces only two yards of cloth per hour instead of five. Thus, the United Kingdom now has an absolute disadvantage in the production of *both* wheat and cloth with respect to the United States. However, since U.K. labor is half as productive in cloth but six times less productive in wheat with respect to the United States, *the United Kingdom has a comparative advantage in cloth*.

On the other hand, the United States has an absolute advantage in both wheat and cloth with respect to the United Kingdom, but since its absolute advantage is greater in wheat (6:1) than in cloth (4:2), *the United States has a comparative advantage in wheat*. To summarize, the U.S. absolute advantage is greater in wheat, so its comparative advantage lies in wheat. The United Kingdom's absolute disadvantage is smaller in cloth, so its comparative advantage lies in cloth. According to the law of comparative advantage, both nations can gain if the United States specializes in the production of wheat and exports some of it in exchange for British cloth. (At

the same time, the United Kingdom is specializing in the production and exporting of cloth.). (D. Salvatory *11th edition, 2012*).

2.1.6.3 *The Opportunity Cost Theory*

In this form, the law of comparative advantage is sometimes referred to as the law of comparative cost. According to the opportunity cost theory, the cost of a commodity is the amount of a second commodity that must be given up to release just enough resources to produce one additional unit of the first commodity. No assumption is made here that labor is the only factor of production or that labor is homogeneous. Nor is it assumed that the cost or price of a commodity depends on or can be inferred exclusively from its labor content. Consequently, the nation with the lower opportunity cost in the production of a commodity has a comparative advantage in that commodity (and a comparative disadvantage in the second commodity).(D. Salvatory *11th edition, 2012)*

2.1.6.4 *Heckscher–Ohlin Theory*

The Heckscher–Ohlin theory is based on a number of simplifying assumptions (D. Salvatory *11th edition, 2012)*:

- There are two nations (Nation 1 and Nation 2), two commodities (commodity X and commodity Y), and two factors of production (labor and capital).

- Both nations use the same technology in production.Both nations have access to and use the same general production techniques. Thus, if factor prices were the same in both nations, producers in both nations would use

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exactly the same amount of labor and capital in the production of each commodity. Since factor prices usually differ, producers in each nation will use more of the relatively cheaper factor in the nation to minimize their costs of production.

- Commodity X is labor intensive, and commodity Y is capital intensive in both nations. Commodity X requires relatively more labor to produce than commodity Y in both nations. In a more technical and precise way, this means that the labor–capital ratio (L/K) is higher for commodity X than for commodity Y in both nations at the same relative factor prices. This is equivalent to saying that the capital–labor ratio (K/L) islower for X than for Y. But it does not mean that the K/L ratio for X is the same in Nation 1 and Nation 2, only that K/L is lower for X than for Y in both nations.

- Constant returns to scale in the production of both commodities in both nations. increasing the amount of labor and capital used in the production of any commodity will increase output of that commodity in the same proportion. For example, if Nation 1 increases by 10 percent both the amount of labor and the amount of capital that it uses in the production of commodity X, its output of commodity X will also increase by 10 percent. If it doubles the amount of both labor and capital used, its output of X will also double. The same is true for commodity Y and in Nation 2.

- Incomplete specialization in production in both nations. even with free trade both nations continue to produce both commodities. This implies that neither of the two nations is "very small".

- Equal tastes in both nations. demand preferences, as reflected in the shape and location of indifference curves, are identical in both nations. Thus, when relative commodity prices are equal in the two nations (as, for example, with free trade), both nations will consume X and Y in the same proportion.

- Perfect competition in both commodities and factor markets.Producers, consumers, and traders of commodity X and commodity Y in both nations are each too small to affect the price of these commodities. Perfect competition means that all producers, consumers, and owners of factors of production have perfect knowledge of commodity prices and factor earnings in all parts of the nation and in all industries.

- Perfect internal factor mobility but no international factor mobility. Labor and capital are free to move, and indeed do move quickly, from areas and industries of lower earnings to areas and industries of higher earnings until earnings for the same type of labor and capital are the same in all areas, uses, and industries of the nation. On the other hand, there is zero international factor mobility (i.e., no mobility of factors among nations), so that international differences in factor earnings would persist indefinitely in the absence of international trade.

- No transportation costs, tariffs, or other obstructions to the free flow of international trade. Specialization in production proceeds until relative (and absolute) commodity prices are the same in both nations with trade. If we allowed for transportation costs and tariffs, specialization would

proceed only until relativecommodity prices differed by no more than the costs of transportation and the tariff on each unit of the commodity traded.

- All resources are fully employed in both nations.

- International trade between the two nations is balanced. The total value of each nation's exports equals the total value of the nation's imports.

2.2 Previous Studies

The analysis about trade balance stability and exchange rate volatility has conducted by many researchers. Yet, this study still have to be enhance to get better perspective for economic world. Differend area, time release, or different variables may cause a different result. This previous studies are used, as a comaparison and supporting journal for this research.

Table 2.3
Previous Studies

No	Title	Model	Conclusion
1	Kusuma, Dimas. (2010). *Analysis The Impact of Exchange Rate Fluctuation Toward Export And Imports Performance In The OIC Member Countries.* "Economic and Trade Integration Among OIC Member Countries: Opportunities and Challenges".	VAR/VECM	The conclusion shows that there is evidence of long-run co-integrating relationship between variables in all countries, except for Malaysia. And majority of the observed countries, except Malaysia, seem to have no problem with the existence of exchange rate fluctuation.
2	Ng Yuen-Ling and Wai-Mun, Har and Geoi-Mei, Tan. (2008). *Real Exchange Rate and Trade Balance Relationship: An Empirical Study on Malaysia.* International Journal of Business and Management Vol. 3, No. 8.	VECM	The conclusion shows that long run relationship exists between trade balance and exchange rate.
3	Genc, ElifGuneren and Artar, OksanKibritci. (2014). *The Effect of Exchange Rates On Export And Imports of Emerging Countries.* European Scientific Journal edition vol.10, No.13.	Panel Model	The conclusions shows there is co-integrated relationship between effective exchange rates and exports-imports of emerging countries in the long run.
4	Rahman, Mohammad Zillur. (2011). *Existence of Export-Import Co integration: A Study on Indonesia and Malaysia.* International Business Research Vol. 4, No. 3; July 2011	VAR	This paper found export and import to have relationship in the long-run for Malaysian economy but similar relationship was not detected in case of Indonesia.

5	Rahutami, Angelina Ika. (2011). *Real Exchange Rate Volatility and International Trade: ASEAN Experience Toward ASEAN Economic Community.*Seminar and Di scussion Series of Nijmege n School of Management R adboud University.	ARCH and GARCH	The estimation result shows that the increasing of term of trade will induce the exports value. The income also has positively significant effect on imports value, but the real exchange rate has a negative significant effect.
6	Irandoust, Manuchehr and Ericsson, Johan. (2002). *Are Imports And Exports Cointegrated? An International Comparison.* Metroeconomica 55:1.	Cross-section	The results indicate that there exists a long-run steady-state relationship between imports and exports for most countries in the sample. The policy implications of our findings are that the countries are not in violation of their international budget constraints and, more importantly, there is no productivity gap between the domestic economy and the rest of the world, implying a lack of permanent technological shocks to the domestic economy.
7	Ramli, Norimah and M. Podivinsky, Jan.. (2010). *The effects of exchange rate volatility on exports: Some new evidence for regional ASEAN countries.*	ECM	The conclusion are shows that the real bilateral exchange rate volatility has a significant impact on exports for all the countries considered in the sample, and the impact overall is negative except for Indonesia.
8	Husein, Jamal. (2014). *Are Exports and Imports Cointegrated? Evidence From Nine Mena Countries.* Applied Econometrics and International Development Vol. 14-1 (2014).	ARDL	The findings of co integration between exports and imports for Iran, Israel, Jordan, and Tunisia indicate that these countries are not in violation of their international budget constraint.
9	Konya, Laszlo and Singh, Jai Pal. 2008. *Are Indian Exports And Imports Cointegrated?.* Applied Econometrics and		The result of this research journals found that Indian exports and imports are not co integrated, so macroeconomic policies of India have not been

	International Development Vol- 8-2 (2008).		effective to contain the trade imbalance.
10	Perera, Nelson and Varma, Reetu. (2008). *An Empirical Analysis of Sustainability of Trade Deficit: Evidence From Sri Lanka.* International Journal of Applied Econometrics and Quantitative Studies Vol.5-1 (2008).	ARMA	The empirical findings suggest that the current account (exports and imports) of Sri Lanka is not sustainable (and this violates its intertemporal budget constraint) in the long-run.

Source: References

The previous studies provide the information which is important for the researcher to enrich the empirical study. Based on the previous studies conducting by researcher, most of the literatures are using VAR/VECM analysis, to see the interaction between exchange rate and monetary policies. Due to the same variables, time release, or the research area so the previous studies are used as the comparison and as a resource to conducting this research.

2.3 Theoretical Framework

2.1.1 Trade Balance

Exports and imports are play an integral role in determining the trade balance performance and economic stability of the countries. Exports as the main role of countries international income and imports as the means of countries needs in order to get economic welfare. The relationship between two variables holds significant importance in maintaining the economic stability. According to expenditures method, an economy's annual GDP is the sum total

of C + I + G + (X – M), where C, I and G represent consumer spending, capital investment and government spending, respectively.

The standart equation of national growth invole the exports minus imports or net exports (X – M). If the countries exports are greater rather than imports, it is called trade surplus. Conversely, if the countries imports are greater than exports, it is called trade deficits or informally called "trade gap". The positive trade balance contribute to the economic growth. Higher exports mean that higher outputs from domestic producers, it is affect the high needs of labour in order to maintain the high quality product. The high exports also represent an inflow of funds to the country, which affect the costomers expenditures and contributes to economic growth.

Coversely, an unsustainable trade deficit indicates a violation of international budget constraints over time (Babatunde, 2014). The impact of long-term deficits is that the domestic interest will be increase which affect to the high needs of international debt. The final impact of course will affect the welfare of people in the country. In that case, the long-run stability of two variables are vital to economy. The occurance of cointegration relationship between exports and imports suggest that the trade imbalances are only short term and will sustainable in the long term and confirm the existance of an effective macroeconomic policy.

2.1.2 The Effect of Exchange Rate

The inter-relationship between exchange rate and exports, imports variables is quite disconcerting because the feedback loop beween them. The

exchange rate has the influence to the trade balance performance (surplus or deficits), while it is impact to the exchange rate volatility. The theoritical literature of Mundell-Fleming model states that if the domestic currency goes down, it will stimulate the exports and makes the imports more expesive. Coversely, a strong domestic currency will rise up the exports and makes the imports more cheaper.

According to Thorbecke (2011) on his working paper "The Effect of Exchange Rate Changes on Trade in East Asia" found that exports produced within regional production networks depend on exchange rates throughout East Asia. The continuous flow of parts and components within regional production networks also depends on relative exchange rate stability in the region. Labor-intensive exports depend on exchange rates in the exporting country.The findings also indicate that, while the Asian economies cooperated in the regional production and distribution network, they also compete in the export of labour-incentive manufacturing goods. This competition makes individual Asian countries are not allowing their currency appreciated relative to their neighboring currencies.In accordance with this findings, the researcher wants to make sure if the exchange rate really affect the trade balance and vice versa in selected ASEAN-5 countries.
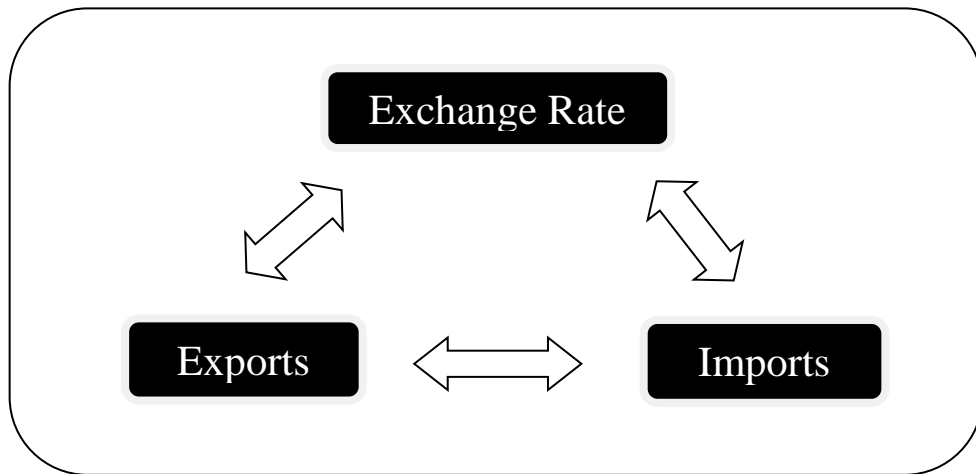
Figure 2.2
Research Framework

2.4　Hypotesis

Based on theoritical background, previous research, and research framework. This research develops these following hypotesis:

(a). **H1**: There is co-integration between trade balance variables, namely exports and imports.

(b). **H2:** There is bidirectional relationships between exchange rate and trade balance variables.