CHAPTER II

THEORITICAL FRAMEWORK

A. Theory of Variables

1. Foreign Exchange Reserve's Theory

Foreign exchange reserve which is often called by International reserve and foreign currency liquidity or official reserve assets defined as all overseas assets were controlled monetary authority and can be useful every time. Based on that definition, foreign exchange reserve of the country can be useful for protecting exchange rate stabilization and also pay deficit in the balance of payment.

Therefore foreign exchange reserve must be able used every time, then foreign exchange reserve normally as wealth in the form of currency that can be traded, gold and short-term invoice for non-resident which is liquid. Further, to protect liquidity of foreign exchange reserve, then foreign exchange reserve should in the form of asset which can be easily used at any time as needed.

Foreign exchange reserve is commonly measured by the ratio of official reserve to imports, if foreign exchange sufficient to cover import of country for 3 months, it means that in safety condition, but if reserve just

enough for 2 months or less, it created pressure on the balance of payment (Kamaludin 1998) (M.S 2001).

a. Component of Foreign Exchange reserve.

1) Monetary Gold

Monetary Gold is gold reserve which is owned by the monetary authority such as a gold bar which has International characteristic (London Good Delivery), pure gold and gold currency which available in the domestic and also in the board. This monetary gold is foreign exchange reserve which has not financial liability position like Special Drawing Rights monetary authority gives additional gold for example mine the new gold or buying the gold from the market.

2) Special Drawing rights

SDR in the form of fund allocation from IMF, special drawing rights is the facilitation which is given by IMF to the member. This facilitates have probability whether reduce or increase foreign exchange reserve that owned by member's countries. SDR has a purpose to add international liquidity.

3) Reserve Position in the Fund

RPF is foreign exchange reserve in the country which available in IMF's account and showed wealth position and invoice of the country as the source from transaction of the country toward IMF.as known, the member of IMF can have the position in Fund's General Resource Account which is noted on the foreign exchange reserve category. Foreign exchange reserve position of the member is the sum of reserve tranche purchase which can withdraw by the member (according debt agreement) that is ready to be given to members.

4) Foreign exchange consist of :

a) Convertible currencies and deposits.
b) Securities such as inclusion, stock, obligation and money market instrument (equities, bonds, and notes, money market instrument).
c) Financial derivatives

The Foreign exchange included monetary invoice to the nonresident in the form of currency, loan, securities and financial derivatives for example financial derivative that is forward, future, swaps, and option.

d) Other Invoice

Other invoice is the last kind which includes invoice which not included in the category above.

b. The Purpose of Foreign Exchange Ownership.

The purpose of foreign exchange reserve ownership can be analogous to the motive someone or individual to hold money (Roger, 1993). As known there is three motives to hold money, to keep, transaction and speculation

The country has various kind of foreign exchange reserve based on the economy characteristic in that country, the several purposes they are:

1) As the tool of monetary policy especially for muffle fluctuation of the exchange rate, by giving the intervention.
2) Giving the trust for market players if the country capable to fulfill their liability toward foreign country.
3) To help government for fulfilling the requirement and liability for foreign debt payment.
4) To fund transaction was noted in the balance of payment.
5) Indicate external asset in that country and also to back up domestic currency.

6) Protecting the reserve, when country faces emergency condition.

7) Indicate one of investment source in that country.

c. Foreign Exchange Reserve System**.**

Foreign exchange reserve system control the movement inflow or outflow of foreign exchange reserve from the country to another country, according to central Bank of Indonesia foreign exchange reserve have three system, they are:

1) Foreign exchange control system

   Foreign exchange in this system is owned by the country, because of that the foreign exchange which is held by people must be submitted to the country and every owner of foreign exchange must obtain the permission from the country, this system was applied in Indonesia based Act Number.32 Year 1994.

2) Semi-free foreign exchange system

   The specific foreign exchange in this system must be submitted and obtain the permission from country meanwhile other kinds of foreign exchange can use freely. It means

acquisition and uses foreign exchange from export result must be submitted to the country and general foreign exchange can use freely. This system applied in Indonesia based on Government Rule Number.64 Year 1970.

3) Free Foreign exchange system

Free foreign exchange system started and applied in Indonesia based on Act Number.1 Year 1982 replace UU Act Number.32 Year 1964 or Government Rule Number.64 Year 1970, it means the people can use foreign exchange freely without submit and obtain permission from the country, they can use foreign exchange from export result as well general foreign exchange.

d. The Factor which Influences toward Foreign Exchange Control.

Foreign exchange reserve control strategy is policy and activity which have relation with the purpose of foreign exchange reserve ownership. That purpose will give influence toward the decision for foreign exchange reserve adequacy or foreign exchange reserve composition which should available.

1) Foreign exchange reserve adequacy

Generally, the decision adequacy ratio is influenced by characteristic from monetary policy which has relation

with exchange rate value, open economy of that country and foreign debt policy in that country, they are several characteristics to determine the adequacy foreign exchange reserve.

2) The adequacy foreign exchange reserve and exchange rate system

The adequacy foreign exchange reserve has a relation to exchange rate system, the country which embraced fixed exchange rate system generally need bigger foreign exchange reserve to maintain exchange rate in level. if exchange rate which is decided on the market price, then the government will sell foreign exchange reserve or foreign exchange oppositely, so the government buy foreign exchange reserve, if exchange rate below the market price. The country which is embraced floating exchange rate, it means exchange rate value in that country is decided by the power between demand and supply in the market, so that there is no obligation for the government to maintain the specific exchange rate value.

3) The adequacy foreign exchange reserve and open economy

Economic openness in that country is reflected in higher trade transaction and the flow of funds among the country. If that country more open to economy, the adequacy foreign exchange reserve is bigger for purchase trade transaction. Usually the parameter which is used for measure adequacy foreign exchange reserve in connection with trade transaction among the country is marginal propensity to import. Theoretically, more higher number propensity it means the smaller adequacy foreign exchange reserve another parameter to measure the adequacy foreign exchange reserve if adequacy foreign exchange reserve can fulfill monthly import liabilities.

4) The adequacy foreign exchange reserve and foreign debt

Foreign exchange reserve control strategy also must consider foreign debt strategy. There is the correlation between foreign exchange reserve strategy and foreign debt strategy is very important for crisis prevention, external private debt in short-term is one factor to determine the adequacy foreign exchange reserve rate in the country.

e. The Source of Foreign Exchange Reserve

According (M.S 2001) (Dr.Kardoyo 2016) Amir in the theory and application of export and import, the sources of foreign exchange reserve divided into two sources, they are:

Table 2.1 The source of Foreign Exchange Reserve from domestic and aboard.

The source from domestic	The source from aboard
1.the source from export goods and services such as rubber source, coffee, oil, textile, webbing, hat, fish, wood, and other source ,and also source from services such as money of freight, province transportation and service commission from banking, premises insurance, and other tourism industry 2. the profit from the foreign direct investment such as profit which is transferred from the company that owned by the government and Indonesian people which have domiciliation in the aboard 3.the source from tourism activity such as money from mining, transportation, rent of hotel and also income from tourism guidance	1. The loan from the foreign country, international institutions and also foreign private such as the loan from IGGI (inter Governmental Group on Indonesia), credit from World Bank and Asia Development Bank and also supplier's credit from the private company from the foreign country 2. grant and also the aid from PBB institutions such as UNDP, UNESCO and also foreign government

Source: International Trade,2016

f. Foreign Exchange Policy in Indonesia

Several policies about foreign exchange in the history of Indonesia economy has been implemented accordingly with foreign exchange system which applied in Indonesia. The Controlled foreign exchange system has been replicated in Indonesia based on Act Number.32 the Year 1964 about the regulation of foreign exchange cross at that time, foreign exchange divided into two group, they are foreign exchange for export source and general foreign exchange.

Based on constitutions, every acquisition of foreign exchange, whether foreign exchange from export source or general foreign exchange is obligatory submitted to the country, through Indonesia bank or other banks which is addressed by country. Thereby every application of foreign exchange, whether for import or other necessity must accept the license from Indonesia bank. They create administration the movement of foreign exchange which in and out from Indonesia, so that the total of foreign exchange reserve, magnitude traffic of foreign exchange and other its use can be controlled and estimated more clearly.

Semi-controlled foreign exchange system ever applied in Indonesia based on Act Number.64 Year 1970 replace Act Number.32 Year 1964. The result of foreign exchange from export must be

submitted to the Indonesia Bank and its use must accept the license from Indonesia Bank, meanwhile general foreign exchange independently obtained and maintained by society. The acquisition and application of administration foreign exchange from export is held by Indonesia Bank, meanwhile the traffic of foreign exchange for general foreign exchange cannot be administrated and handled nicely.

Free foreign exchange system began applied in Indonesia based on Act Number.1 Year 1982 replace whether Act Number.32 the Year 1964 or Act Number.64 Year 1970. Based on this regulation, every society can independently own and maintain the foreign exchange. The application Act Number 1 Year 1982 create the problem from law side, confusions arises in national law stratification, from economic policy Act Number 1 Year 1982 did not arrange report obligation or controlling traffic of foreign exchange. There is no regulation about reporting obligation for traffic of foreign exchange causes monitoring foreign exchange whether in the form of debt or fund from foreign in short-term cannot be ruined effectively, but since 17 Mei 1999, both of problem can be solved by encouraging Act Number.24 year 1999 about foreign exchange and exchange rate system. Based on the new constitute, free foreign exchange system has regulation, if every people in Indonesia can independently use and

maintain foreign exchange, but they have obligation to give information about data of foreign exchange activity to the Indonesia Bank.

New policy about foreign exchange which is issued by Indonesia Bank is about the policy of foreign exchange from export and foreign debt of foreign exchange in September 2011. That policy is based of adequacy foreign exchange, especially if suddenly there is the capital reversal. Then Indonesia bank obliged the acquisition of foreign exchange from export and also withdrawn of the foreign debt taken from Indonesia bank. That obligation based on regulation of Indonesia Bank (PBI) Number .13/20/PBI/2011, beside that Indonesia bank also issued the regulation about monitoring foreign exchange activity in the bank. That policy is regulated in regulations concerning monitoring of foreign exchange activities at banks in PBI Number13/21/PBI/2011 in September 2011, as well as regulations concerning reporting obligation and withdrawal obligations from foreign debt of foreign exchange in PBI Number.q3/22/PBI/2011 in September 2011. Both of regulation in purposing to support PBI, foreign exchange from export and foreign debt of foreign exchange, so that if bank reports the transaction from their customer, Bank has

obligation to report the specific export transaction and its documents to the Indonesia Bank.

2. International Trade

Nowadays a lot of imported goods circulating around us, indeed, there is no country can produce itself what is needed. An economy country that is widely involved international trade is called an open economy. International trade is marked by import-export. The benchmark is a comparison of export and imports to total national income. The greater ratio of imported exports to national income, it means the economy of country more open than before (Kardoyo,2016)**,** the definition of International trade is selling and buy transaction cross country, involving 2 parties and exceeding national borders (Sutedi 2014)**,** international trade is the exchange of good and service between countries, this type of trade gave rise to world economy (Naqib Danesjho 2014)**,** International trade is the exchange of capital, goods , and service across national borders territories, the trade between one country and other countries (Adegbola 2017)

According to the definition above, the definition of international trade is the exchange of goods and service between one country and other country and exceeding national borders. International trade or international business

usually implemented through sell and get agreement, the agreement of international trade known as export and import. Selling activity is called by export and buying activity is called by import.

a**.** Mercantilism Theory

Mercantilism is a philosophy from about 300 years ago. The model was brought by William Petty, Thomas Mun, and Antonie de Montchretien, the base of this theory was the "commercial revolution" the transaction from local economics to national economics from feudalism to capitalism, from a rudimentary trade to a large international trade (Zhang 2008). Mercantilism was the economic system of the major trading nations during the 16th, 17th and 18th century based on the premise that national wealth and power, were best served by increasing exports and collecting precious metals in return.it supersedes the medieval feudal organization in Western Europe, especially in Holland, France, United Kingdom, Belgium, Portugal, and Spain. The monarch controlled everything, their policy concern to export to the countries that they control and there is no import (to have a positive balance of trade). The merchant people give the argument if the one source to make the country richer is increasing export value and decreasing import value, so that merchant people measure the wealth of nation with human resource, output

production of people and the wealth of nature for produce good and service. Mercantilist ideas did not decline until the coming of the Industrial Revolution and laissez-faire

b. Absolute advantage

In the second half of the XVIII century, mercantilist policies became an obstacle for the economic progress. Adam Smith (father of liberalism and economy science) brought the argument in his book “the wealth of Nations”, published in 1776, that the mercantilist policies favored producers and disadvantage the interest of consumers. Adam Smith’s theory starts with the idea export is profitable if you can import goods that could satisfy better the necessities of the consumer instead of producing them on the internal market. According to Adam Smith, the trade of the country is based on absolute advantage. If one country is more efficiency rather than other country to produce commodities, but it less efficient to produce commodities rather than any other countries. So both of country can get profit by specializing in producing the commodity which has the absolute advantage and changes them to the country which has the absolute disadvantage (Salvator 1990). Adam Smith argued that there should be

mutual benefits for trade because each country has absolute advantage in producing goods. For instance, if the two countries have free trade and each country specified in producing the good where it has an absolute advantage. In this example, England is specified in producing cloth and Portugal in producing wine. Also assume that in the international market, one unit of wine can exchange for 3 units of cloth in England in the open economy one can obtain one unit of with 3 units of cloth, while in the autarky system one unit of wine requires 4 units of cloth, we see that trade will give benefit in England. similarly, in Portugal in the open economy one can obtain one unit of cloth with 1/3 unit of wine instead of 2/3 unit of wine as in autarky system, trade also benefits Portugal.

c. Comparative Advantage

Although Smith's ideas about absolute advantage were crucial for the early development of classical thought for International trade, it is generally agreed that David Ricardo is the creator of the classical theory of international trade, even though may concrete ideas about trade existed before his principles, Ricardo showed that the potential giants from trade are far greater than Smith envisioned in the concept of absolute advantage. If a country or individual is relatively more efficient in the production of good and service than another country or individual then we say that she has the comparative advantage in the production of that good. Comparative advantage is measure efficiency in terms of relative

magnitudes. Since countries have limited resource and level of technology, they tend to produce goods and service in which they have a comparative advantage (Killic 2002), we now formally describe the Ricardian model, the assumption of the Ricardian model are as follows:

1) Each country has a fixed endowment of resource and all units of each particular resource are identical
2) The economy is characterized by using perfect competition
3) The factors of productions are perfectly mobile between sector within a country but immobile between countries
4) There is only one factor of production, labor and the relative value of a commodity is based solely on its labor content
5) Technology is a fixed and different country may have different levels of technology
6) The unit cost of production is constant
7) The factor of production are fully employed
8) There is no trade barrier, such as transportation costs or government-imposed obstacles to economic activity

d. The Heckscher-Ohlin theory

The classical distinction introduced by Ricardo and maintained by most of his followers has factors of production trapped within national boundaries, only final commodities can be traded. Heckscher-Ohlin theory

shows that international trade in commodities could alleviate the discrepancy between countries in relative factors endowments. This takes places indirectly when countries export those commodities that use intensively the factors in relative abundance.

e. The Neoclassical Theory

The Neoclassical theory holds that the determinants of trade patterns are to be found simultaneously in the differences between the technologies, the factor endowments and the tastes of different countries.as an illustration of the neoclassical trade theory, we show how Mill solved the trade equilibrium problem and how this problem can be solved with help of modern analytical tool, Mill introduced the equation of international demand, according to which the term of trade are determined so as to equate the value of export and the value of import. Mill argued: “the exports and imports between the two countries (or, if we suppose more than two, between each country and the world) must in the aggregate pay for each other, and, therefore be exchanged for one another at such values as will be compatible with the equation of the international demand.

3. Net Export’s Theory.

According to the (Mankiw 2005) net export is the value of goods and service which is exported to the other country reduced by the value of goods and service which is imported from other country. Net export have positive value if value of export more than value of import, meanwhile if value of import more than value of export it means the value of net export is negative. Net export show us the expenditure of net from board based on our goods and service, which gives income to the domestic producer. He explain if net export is foreign party purchase on several kinds of goods and service which is produced in exported country reduced by buying of people on goods and service which is produced in the foreign imported country. Every selling transaction to the foreign party, for example selling of aircraft made on boing toward british airways, that increasing net export, because the expenditure of import is entered to the expenditure of domestic (C+I+G), and imported goods and service from aboard is not part of output in the country, so this equation should reduce by expenditure of import (NX=EX-IM).

Net export = output –the expenditure of domestic

a. The Role of Net Exports

Consider the expenditure on an economy's output of goods and services, in a closed economy, all output is sold domestically and expenditure is divided into three components: consumption, investment, and government purchase.in an open economy, some

output is sold domestically and some is exported to be sold abroad. As can be seen in the formula expenditure on an open economy's output Y divide into four components:

C^d, consumption of domestic goods and services

I^d, investment in domestic goods and services

G^d, government purchase of domestic goods and services

X, exports of domestic goods and services

The division of expenditure into these components is expressed in the identity

$$Y = C^d + I^d + G^d + X$$

The sum of the first three terms, $C^d + I^d + G^d$, is domestic spending on domestic goods and services, the fourth term, X is foreign spending on domestic goods and service.A bit manipulation can make this identity more useful. Note that domestic spending on all goods and services equals domestic spending on domestic goods and services plus domestic spending on foreign goods and services. Hence, consumption total consumption C equals consumption of domestic goods and service C^d plus consumption of foreign goods and services C^f; total investment I equals investment in domestic

goods and service I^d plus investment in foreign goods and service I^f; and total government purchases G equals government purchases of domestic goods and service G^d plus government purchases of domestic goods and services G^f .thus

$$C = C^d + C^f$$

$$I = I^d + I^f$$

$$G = G^d + G^f$$

We substitute these three equations into the identity above:

$$Y = (C - C^f) + (I - I^f) + (G - G^f) + X$$

We can rearrange to obtain

$$Y = C + I + G + X - (C^F + I^F + G^F)$$

The sum of domestic spending on foreign goods and services $(C^F + I^F + G^F)$ is expenditure on imports (IM). The equation can be write the national accounts identity as

$$Y=C+I+G+X-IM$$

Because spending on imports is included in domestic spending (C+I+G) and because goods and services imported from abroad are not part of country's output, this equation subtracts spending on

imports. defining Net exports to be export minus imports (NX = X – IM) the identity becomes

$$Y= C+I+G+NX$$

This equation states that expenditure on domestic output is the sum of consumption, investment, government purchases and net exports. this is the most common form of the national income accounts identity. The national income accounts identity shows how domestic output, domestic spending, and net exports are related in particular,

$$NX = Y – (C+I+G)$$

Net exports = output – domestic spending

b. Characteristic and Factors of Export

According to the Siswanto in law of export and import book (S. M. Andrian Sutedi 2014) have to give the explanation about the characteristic of export, they are:

1) There is the territorial border of the country among exporter and importer.
2) There is difference exchange rate between exporter and importer.so that the payment often uses foreign currency for example, dollar America, pound sterling England or yen Japan.

3) There is limited knowledge from exporter and importer, include the payment ability or ability for supply the commodity.
4) Oftentimes, there is difference government policy between exporter country and importing in the international trade sector, monetary, foreign exchange, labeling, embargo and taxation.
5) There is the difference between exporter and importer for controlling technique and terminology transaction of international trade, also popular foreign language which is used in that transaction, for example, English language.

c. Correlation between Net Export and Foreign Exchange Reserve

The correlation between foreign exchange reserve is if country do export activity, so that country will receive amount of money as foreign exchange or called by Devisa, it also one of income to the country.so that export is trade activity which gives impulse for creating demand from domestic and cause emergence of big industry and company, along with the structure positive stable and efficient social institutions (Todaro 2008).this argument also suitable for the research was conducted by (Marulitua 2017) the goals of their research is net export have the positive impact toward foreign exchange reserve

d. The Advantage of Export Activity

The role of export activity toward the development of the economy in the country is very important. It, because there is many countries increase the competitiveness of international trade activity especially in export activity. Based on Sutedi's book about the law of export and import, there is several advantages of international trade, they are:

1) Export activity is one of the sources for increasing foreign exchange reserve in that country.
2) Increasing profit of company through market expansion and also to receive the best selling price (profit optimization).
3) An Open new market in the foreign country as the domestic market expansion.
4) Utilize the exceeding of idle capacity.
5) Get used to compete in international market among the country.

4. Exchange Rate's Theory.

The theory determination of movement exchange rate, in the beginning is developed by supporter's Keynesian ,Lerner (1936), Metzler (1942), Harbeger (1950), Laursen and Metzler (1950) and Alexander (1952),most of the study is focused toward the importance of demand elasticity and supply of export and import, demand and supply foreign

currency and the condition, whereas devaluation probably have effectively for increasing trade balance. This theory developed since 1960, such as Mundell-fleming model, sticky-prices monetary model, and portfolio balance model.

a. Model Mundell-Fleming .

Model Mundel-fleming is model which is widely used in the theory determination of exchange rate. this model can be said as derivative from IS-LM model and both of that model emphasize interaction between goods market and money market. both of them have the difference, IS-LM model usually is used in open economy. Mundell-fleming model basically has assumption if the price is constant and perfect foresight. Mundell-fleming applied three similarities, they are: exchange rate similarity, money demand and national income. three basic similarity in Mundell-fleming model, are as follows:

$$s = i - i^*$$

$$m = \sigma s + ky - \theta i$$

$$y = (a + \mu s - \varphi i - y)$$

Explanation (all of the variable in the form of logarithm, except interest rate variable)

s = the change of exchange rate.whereas exchange rate is declared by domestic price for foreign currency

i and I^* = domestic and foreign interest rate

m = supply price rate

y = domestic income

Mundel-fleming model has several important implications with the effectiveness of fiscal policy and monetary policy to create the balance of economy, whether internal or external.

b. The sticky prices monetary model.

The sticky prices monetary model was introduced by Dornbusch (1976) and allowed overshooting in short-term toward nominal and real exchange rate on the balance rate in the long term. this model has assumption if variables have flexibility in the system, they are exchange rate and interest rate as compensation for other sticky variables especially goods price. The basic characteristic of this model was noted in structural equation (the assumption of the variable from the foreign country and domestic income)

$$s = i - i^*$$

$$m = p + ky - \theta i$$

And

$$p = \gamma(a + \mu(s - p) - \bar{y}$$

Based on this equation, Mundell-fleming and sticky price have several similarities, but in sticky price model, output not determined by demand or additional in aggregate demand is more influence to the inflation rather than increasing in output

c. The flexible prices monetary model

The monetary approach toward exchange rate arise as exchange rate model which is dominant since the beginning implementation of floating exchange rate system at 1970.the fundamental differences between Mundel-fleming model, sticky price model, and flexible price are, in the Mundel-fleming model, output was determined by demand and the price is constant, in the sticky price Dornbush, output is natural in the long term and the price is adjusted rigidly toward demand additional, meanwhile inflexible prices, output is flexible to response demand additional directly.

The definition of the exchange rate is the price of a currency against another currency (Obstelfd 2003), meanwhile according (Sukirno

1985), a value indicating the amount of domestic currency required to get one unit of foreign currency. According to the (Mankiw 2005) exchange rate divided into two, they are nominal exchange rate and real exchange rate. The nominal exchange rate is a value that used by someone when exchanging currency of a country with currency other countries. meanwhile, the real exchange rate is the value one uses when exchanging goods and services from a country with goods and services from the state (price level)

exchange rate or kurs is fluctuation it means the value of exchange rate can increase and decrease, so that allows the occurrence of the following, they are:

1) Appreciation it means increasing the value of exchange rate in domestic against foreign currency, through the market mechanism.
2) Depreciation it decreasing the value of exchange rate toward foreign currency in domestic, through the market mechanism.
3) Devaluation it means the policy which is used by the government to reduce the value of exchange rate toward foreign currency in domestic, in order to increase value of export and foreign exchange to get surplus is the balance of payment.

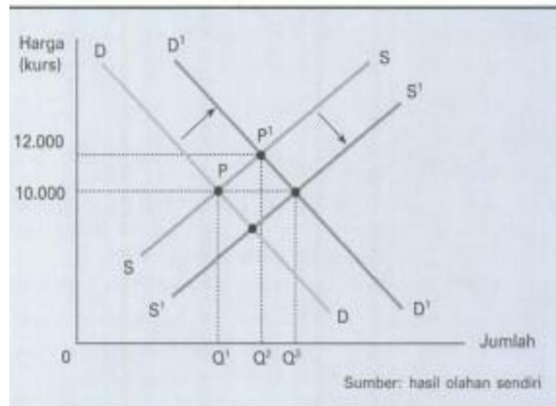
4) Revaluation it means the policy which is used by the government to increasing value of exchange rate toward foreign currency in domestic.

d. The System of Exchange Rate

According (Syarifuddin 2015) There is three system of the exchange rate, they are:

1) Fixed exchange rate

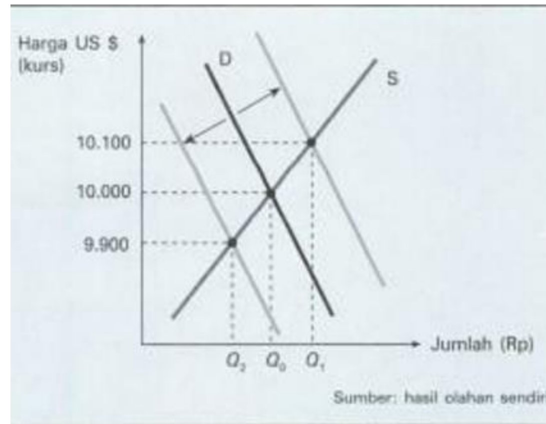
The value of exchange rate against other exchange rates is determined by the Central bank of Indonesia in the certain value. For example, if the value of exchange rate toward dollar America was pegged IDR 8000 each dollar, in this condition, Central bank of Indonesia will prepare for selling or buying the requirement of foreign exchange for defending the value of exchange rate. If that exchange rate can no longer be maintained, Central bank of Indonesia can do devaluation or revaluation toward exchange rate.



Curve above explain if fixed exchange rate is Rp 10.000. at the level 10.000 of fixed exchange rate, demand curve described by DD and supply described by SS. If import is increasing, the demand curve shift from DD to D1 or D2, as a result the price increases became P' at the level Rp 12.000. Government sell foreign exchange reserve as the total demand (Q3-Q1) for returning exchange rate at the level Rp 10.000.

2) Floating Exchange Rate.

Floating exchange rate system it means, the value of exchange rate depends on strength of supply and demand in the market system. Meanwhile, the exchange rate will toughen if there is excess demand of foreign exchange. Otherwise, exchange rate of domestic currency will depreciate if there is excess supply of foreign exchange.



The curve above explain if exchange rate be appointed Rp 10.000 each dollar AS with floating rate 1%. If exchange rate increasing or less than 1 percent, for example became Rp 10.050 or Rp 9.960 each dollar, the government not give intervention, but the government give intervention if exchange rate increasing or decreasing more than 1 percent, and return the exchange rate at the level Rp 9.900,- each dollar AS

3) Managed Floating exchange rate

Managed floating exchange rate system is the system between fixed exchange rate and floating exchange rate, in this exchange rate system. Central bank of Indonesia establishes limited a certain quantity from a movement of the exchange rate which is called by intervention band or boundary of the intervening band.

e. Nominal Exchange Rate and Real Exchange Rate.

The Nominal exchange rate is the price of currency toward other currency for example, if exchange rate between dollar AS and yen Japan is 120 yen/dollar, so we can change 1 dollar for 120 yen in world international for foreign currency. Japanese people, who want receive dollar will purchase 120 yen for every dollar which bought it by them, meanwhile American people will receive 120 yen for every dollar which they purchase it, when people referred to the exchange rate between two countries, they usually called it by the Nominal exchange rate. Real exchange rate itself has meaning is the relative price from goods both of country. Real exchange rate stated the stage, whereas we can trade goods from one country to the goods from other countries, real exchange rate randomly called by terms of trade. There is example for looking the correlation between nominal exchange rate and real exchange rate, there is many countries which produces car, and then the price of car is $10,000 and the price of can in japan is 2,400,000 yen, for comparison the price from both of car, we must change it into the general currency. if 1 dollar has value 120 yen, so the price of car in America is 1,200,000 yen, the comparison is the price of car in America (1.200.000 yen) and the japan price of car is (2.400.000 yen), we can take the conclusion if America car's price half price from Japan car's price.in other word, we can barter 2 car America for 1 car japan.

We can summarize it into the calculation:

$$\text{Real ER} = \frac{\text{Nominal ER x domestic price goods}}{\text{Foreign price goods}}$$

The formula for Nominal exchange rate and real exchange rate is below:

$$Q = E.P^{*}/P$$

Whereas Q = real exchange rate, E: nominal exchange rate, P= the price rate in the country and P^{*}= price rate in the foreign country

f. The Exchange Rate Changes

The causes of fluctuation in exchange rate is because demand change or supply in the exchanges of foreign exchange, whatever if demand curve on currency shift to the right or demand curve shift to the left that will invite the appreciation on that currency, meanwhile if demand curve shift to the left will be invite the depreciation on that currency, in the theory was noted if the demand will create supply. There are several causes for exchange rate changes they are:

1) The increasing domestic on the exported goods

The example if electronic tools from America which expressed in the dollar are increasing. The influence toward dollar demand will depend on elasticity of demand for goods in America. if the demand the elastic, probably because the other countries offer the same goods in the world market. The total purchasing of America's goods shrink, so that dollar decrease and dollar run into depreciate

2) The increasing foreign currency on imported goods.

The causes of increasing price toward imported goods which is offered for example, the price of whiskey scots in the Pound sterling value is increasing. The assumption, if the drinker of whiskey has elasticity on demand toward whiskey, because they can easily move to the substitutions other drink. They will purchase less pound sterling for whiskey rather than before, in other words, they must demanded less dollar to the foreign exchange. Then supply dollar curve shift to the left and the dollar value increase.

3) Capital flow.

The capital flow which has big scale can give strong influence toward exchange rate, investment fund will cause appreciation on currency from capital importing countries and appreciation on currency from capital exporting country.

4) The structural change

The Economy condition can run into the structural change which changes equilibrium of the exchange rate. The structural change is the general term which is applied on the cost structural change, if the product in that country cannot develop as fast as other countries, this situation will cause depreciation on currency that country because of demand currency will shift into the left.

5) General price rate change

Changes in exported goods, such as electronic calculators. There is change the entire price which is caused by inflation. The problem is change domestic price toward the price rate from trading partner

g. The Correlation between Exchange Rate and Foreign Exchange Reserve.

There is correlation between exchange rate and foreign exchange reserve, it means if there is much foreign exchange or foreign exchange reserve which is owned by government and people in that country, it means the country more capable to do the economy transaction and international finance. The value of exchange rate also toughen, beside of that if the value of exchange rate is increasing in that country, that means if the economy of that country more strength than before, so that that country can receive more foreign exchange reserves (Agustina 2014)

The choice of system exchange rate and foreign exchange is very important to determine monetary authority, because of that fixed exchange rate system usually accompanied by controlled exchange system to reduce foreign capital market and support monetary authority in that country (Simorangkir 2015).

5. Foreign Debt's Theory.

Foreign debt of the Indonesian population to non-residents both in foreign currency and/ or rupiah including in the form of financing based on sharia principles. Indonesia's foreign debt includes public sector (government and central bank) sectors and the private sector in the form of loan agreements, trade credits, debt securities, cash and deposits, and other liabilities.

According to the Michael (Todaro 2008) foreign debt is the financial source from external, both in form of grant or loan, have an important role for completing the lack of domestic natural resources so that it can increase foreign exchange growth and saving. The development country give assumption if one country face barrier as limited saving in domestic which haven't enough yet for handling all of the investment opportunity and also as well as the scarcity of foreign exchange that does not allow it to import capital goods and intermediate goods that are essential for the development of the country.

According to the (Sukirno 1985), the flow of funds from the foreign country is named by foreign debt, when it has characteristic such as the flow of funds which is not driven by the purpose for searching the profit and also the characteristic is more easy than the characteristic which is occur in international market.

a. Factors which Influence to The Foreign Debt in The Country

The consideration of country or company to borrow foreign debt is affected by several factors which can categorize into two push factors and an internal factor which pull the fund from outside (Pasaribu n.d.). The push factors can be divided into several points, they are:

1) The difference of interest rate US (Dollar America Serikat and developing country) in the middle of the year 1990 and cause the gap between interest rate and emerging market is bigger so that it pushes the investor from foreign country move their investment from developing countries to the emerging countries.
2) The Capital market which has integration. If the capital market in the world more integrated gives the convenience of market access and discretion to handle and do the transaction to hold foreign currency.
3) Additional of liquidity in the international market, the creditor from the foreign country at that time in the condition which have additional liquidity and give the score which excessive toward fundamental performance in the economy and the capability to return Indonesia’s foreign debt. The behavior which is confidence toward the capability of Indonesia and causes the increasing bravery to take the risk which gives influence to the increasing of private debt in Indonesia.

4) The variation of product financing, there are several variation product financing which is provided by the banking sector and foreign capital market can offer credit amenities which is more interest. The Financial support from banking in the foreign country, allows them to give credit in the longer term.
5) The limitation of bank’s capability to provide credit in the middle term which is caused by the lower financial source from banking sector in the long term. The number in the end of 2007 show if most of them or financial source from banking sector in the term 1 month, the financial source from banking only 0,6% in the term 1-2 month, because this financial structural, the capability domestic banking to give credit in the long term is limited, as a result the banking industry focus more to distribute their fund to the credit of consumption with relatively small amount.
6) The characteristic and procedures of loan are easy. One of the private obstacles to borrow fund from the domestic bank is complicated requirements, for example collateral problem always became the first requirements for the entrepreneur to receive the loan from the domestic bank, because of that problem and also asymmetric information. This weakness makes domestic bank for purchasing certain company’s projects which has bigger potential.

7) The competency and bank's reputation in the foreign country. Foreign bank of the foreign country often called have more competition and it has the best reputation.so that foreign bank is more trusted by Indonesian entrepreneurship. Besides that, there is International network and the best technology control, International banking can fulfill the necessity of debtor which have export-oriented.

b. The Types of Loan

The loan consists of the loan from aboard and domestic, there is several types of loan, they are:

1) Foreign loan.

The World Bank, the Asian Development Bank, the Islamic Development Bank, and the creditor from bilateral (Japan, Germany, France and other) and also the credit of export.

a) The program of the loan: for supporting the budget and their liquidity and there is the correlation with fulfillment matrix policy in the sector activity to reach MDGs (reducing the poverty, education and also corruption eradication), society welfare, and also the policy about climate change and infrastructure.

b) The project loan: for the financing of an infrastructure project in the several sectors (communication, energy, and other) the projects for poverty alleviation (PNPM).

2) The domestic loan.

   a) The government regulation Act Number.54 Year 2008, about the paradigm of procurement and forwarding loan in the domestic by government.

   b) The source from BUMN, regional government, and the regional company.

   c) For activity financing in the framework of industry empowerment in the domestic and also infrastructure development to the general service, investment activity which generates acceptance

   State securities (SBN) in Rupiah and foreign exchange, tradable and non-tradable, fixed and variable.

3) Government Bonds (GB).

   The treasury of country (SPN/T-Bills): GB, the obligation of the country, sharia securities (SS)/ Sukuk of the country in Rupiah and foreign exchange with any kind of structural, for example ijarah, musyarakah, istisna ext. SS in the short term (Islamic T-Bills); SS retail (Sukri); SS in the long term (IFR/ ijarah fixed rate; Global Sukuk; SDHI/ Fund of Sukuk for Indonesian hajj)

The perspective of donor country, at least there is two important things which give motivation and also became principal of foreign aid to the debtors of countries. The two important things, that is political motivation and economy motivation, whereas both of them have the close correlation between each other.

c. The Management of Foreign Debt.

The debt problem should receive the right management, because if there is the fault in the debt management, so that cause increasing nominal debt value which cannot uncontrollable. Generally, the nominal debt value increase is caused by several factors, they are:

1) There is the deficit in APBN every year.
2) The requirement of refinancing mature debt.
3) The changes of rupiah value which cause the changes nominal debt value in rupiah.
4) The payment expenditure for risk funding and government participation to support program infrastructure development and also reduced non debt finance source of APBN, for example privatization of BUMN and the result of asset management.

This condition makes the government can manage the debt well. so that the debt can useful continuously for fulfilling the requirement of financing which is decided by debt management, it includes planning

activity, strategy preparation, important communication and including market development, execution, debt publishing, administration, obligation financing and debt evaluation. Generally, to manage the debt, there is several indicators which is used by Indonesia, they are:

1) Debt to GDP ratio.
2) Debt to export ratio.
3) Debt service ratio.

This debt management has several purposes that will be reached by the government, the general purpose of debt management can divide into several terms or period, they are:

1) Long-term purpose.
   a) To secure the requirements APBN financing through the debt with minimizing cost at a controlled level of the risk, so that fiscal continuity can be protected.
   b) Support effort to create state securities which is active and liquid.

2) Short term purpose.

Ensure the liquidity of fund to cover the deficit and obligation purchasing principle of debt at the right time and efficiency. There is the concept of debt management strategy, the policy in the budget revenue and expenditure of country have role important role in the last decision to determine the amount of loan or debt for covering deficit in APBN.

d. The Correlation between Foreign debt and foreign exchange reserve

The source of finance from external (whether grant or loan) have role important for completing lack of resources as foreign exchange reserve or domestic saving, this approachment is called by analysis of foreign aid (Todaro 2008). Other research was conduct by (Febriyanti 2013) the result is foreign debt have positive impact toward foreign exchange reserve, because if foreign debt increase, so capital account of Indonesia increase and it also give influence toward balance of payment, increasing balance of payment can add foreign wealth of Indonesia, it means foreign wealth making foreign exchange reserve increase.

B. Previous Research

There is the different argument among several researchers previously in their research, according to the (Agustina 2014), they found if import, exchange rate didn't give influence toward foreign exchange reserve but export give positive impact and inflation give negative impact toward foreign exchange reserve. The other research was conduct by (Silitonga 2015) also found there is equilibrium in short-term among foreign exchange reserve with export, import and exchange rate with using ECM (error correction model) method. The research was conduct by (Beny 2013) have other goals, he found if export has the positive impact toward foreign exchange reserve meanwhile import give negative impact toward it. Mohammad Aslan Chadhany and Ghulam Shabir in their research in Pakistan found if import is also positively related foreign reserve. (Maulana 2014), he found if foreign debt and exchange rate have the significant impact toward foreign exchange reserve (Rizieq 2006) also find out in his research if exchange rate has the positive impact toward foreign exchange reserve.

Based on their research previously and background the problem, the researcher want to learn more and find out about the influence of net export, exchange rate and foreign debt toward foreign exchange reserve with using ECM (error correction model) model, to know the equilibrium in short term and long term among the variable. Other empirical study showed if ECM is one of the ways which is suitable for estimate the model when economy variables are individual non-stationery and have cointegration among each other

Table 2.2 Previous Research

Title	Variable	Methodology	goals of research
Analysis determinant of foreign exchange reserve (Pundy Sayoga 2017)	Dependent variable : foreign exchange reserve Independent variable : exchange rate, export, foreign debt	Secondary data Econometric OLS (ordinary least square)	Export and foreign debt has positive impact toward foreign exchange reserve, meanwhile exchange rate have negative impact toward foreign exchange reserve
The influence export and import toward foreign exchange reserve in Indonesia Jimmy benny,	Dependent variable : foreign exchange reserve Independent variable : import and export	Secondary data Econometric OLS (ordinary least square)	The goals is export have positive impact toward foreign exchange reserve, and import have negative impact toward foreign exchange reserve
Analysis factors that influence toward Foreign exchange reserve Rahmatullah Rizieq,2006	Dependent variable : foreign exchange reserve Independent variable : PDB, exchange rate, credit domestic	Secondary data Regresi sederhana	The goals is contribution of income and credit domestic have significant effect toward foreign exchange reserve and exchange rate have positive impact toward foreign exchange reserve

Contribution export import toward GDP empirical study : Indonesia and Saudi Arabia (Kamalia 2011)	Empirical study Indonesia and Arab Saudi	Secondary data Qualitative method	The goals is contribution of export and import toward GDP in Indonesia around 1 -9 % and contribution of export and import in Saudi Arabia around 15%-30%, which is mean if contribution of export and import in Saudi Arabia more contributed rather than export and import in Indonesia
The influence of inflation, kurs, foreign debt, export toward foreign exchange reserve Asep Maulana Rochman,2014	Dependent variable : foreign exchange reserve Independent variable : inflation, kurs, foreign debt and export	Secondary data Quantitative method OLS (ordinary least Square)	The goals is inflation, kurs, foreign debt and export simultaneously give impact to the foreign exchange reserve, partially inflation did not give impact to the Forex reserve
Analysis factors that influence to the economy growth in Indonesia 1986-2014 Destri Tama Arum D,2017	Independent variable :Inflation, unemployment, investment Dependent variable : GDP growth	Secondary data Quantitative method OLS	The goals is inflation not significantly give impact to the GDP, but unemployment, investment give positive and significantly toward GDP in Indonesia
Analysis factor that influence to the foreign exchange reserve in Indonesia	Dependent variable : foreign exchange reserve Independent variable : foreign direct investment	Secondary data Regressi OLS	The goals is export and foreign divestment have significant influence

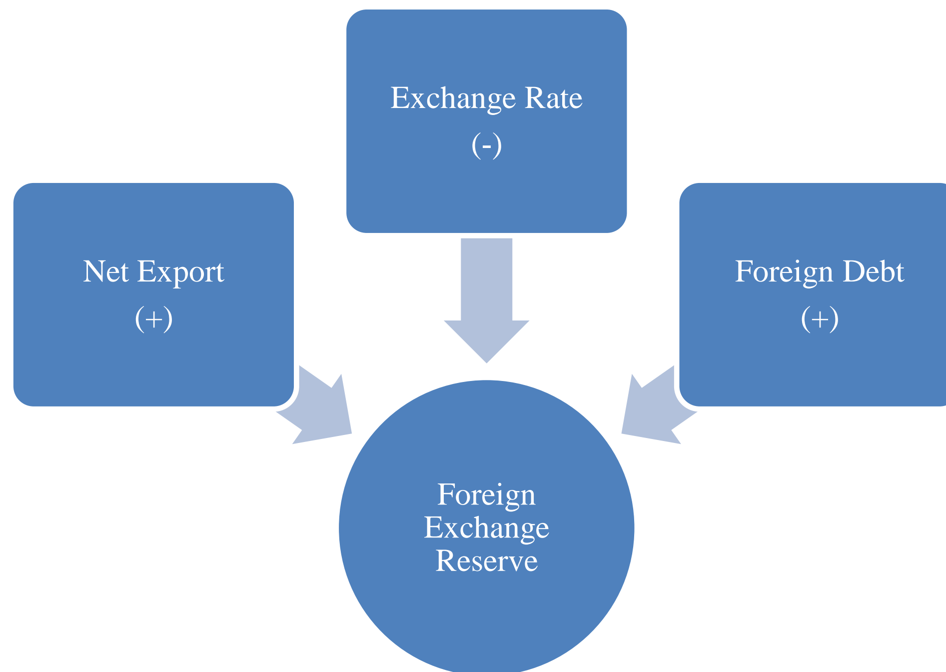
1986-2015 (wiguna 2016)	Export		toward foreign exchange reserve
Analysis factors that influence to the foreign exchange reserve in Indonesia 2000 : Q1 – 2014:Q4	Dependent variable : foreign exchange reserve Independent variable : PDB, BI rate, Inflation	Secondary data ECM model	The goals is kurs, and BI rate have significant influence toward foreign exchange reserve
analysis the influence of export, import and exchange rate toward foreign exchange reserve Roma Dear Silitonga,2015	Dependent : foreign exchange reserve Independent : export, import and exchange rate	Secondary data ECM model	The goals is all of independent variable give influence significantly in long term
Pengaruh hutang luar negri, net ekspor dan belanja wisatawan dengan cadangan devisa (Marulitua 2017)	Dependent : foreign exchange reserve Independent :net export, hutang luar negri, belanja wisatawan mancanegara	Secondary data OLS	The goals is net export, foreign debt, income from foreign have positive and significant toward foreign exchange reserve

C. Research Hypothesis

1. Net export have the positive impact toward Foreign exchange reserve
2. Exchange rate has the negative impact toward foreign exchange reserve
3. Foreign debt has the positive impact toward foreign exchange reserve

D. Research Framework of Analysis

Based on theory and literature review was noted above, the conceptual framework from this research is:



Picture 2.1 Figuring Research Framework Analysis