ADDIS ABABA UNIVERSITY
SCHOOL OF GRADUATE STUDIES

IMPACT OF EXCHANGE RATE REFORM ON TRADE IN ETHIOPIA

BY
WUBIT FEKADE

MAY 2012
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A PROJECT SUBMITTED TO THE SCHOOL OF GRADUATE STUDIES OF ADDIS ABABA UNIVERSITY IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF ART (IN ECONOMICS)

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This is to certify that the project prepared by Wubit Fekade, entitled: Impact of Exchange Rate Reform on Trade in Ethiopia and submitted in Partial Fulfillment of the Requirements for the Degree of Master of Arts in Economics (Applied Trade Policy Analysis) complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

Approved By Advisor:	Signature	Date
Wassie Beshah		13/6/12

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ACRONYMS

A	Domestic Absorption
BOP	Balance of Payment
CPI	Consumer Price Index
E	Exchange Rate
EB	External Balance
EPRDF	Ethiopian Peoples Republic Democratic Front
ERCA	Ethiopian Revenue and Customs Authority
GDP	Gross Domestic product
GNP	Growth National Product
IB	Internal Balance
IMF	International Monetary Fund
LDC	Less Developed Countries
MoFED	Ministry of Finance and Economic Development
NBE	National Bank of Ethiopia (Central Bank)
NER	Nominal Exchange Rates
OFEX	Official Exchange Rate
OPEN	Openness
PAREX	Parallel Exchange Rate
PPI	Producer Price Index
PPP	Purchasing Power Parity
REER	Real Effective Exchange Rate
REERI	Real Effective Exchange Rate Indices
RGDP	Real Gross Domestic Product
SSA	Sub-Saharan Africa
TB	Trade Balance
TGE	Transitional Government of Ethiopia
USD	United States Dollar
WTO	World Trade Organization

ABSTRACT

Exchange rate reform combined with other liberalizing trade policy reforms in Ethiopia's economic reform program was anticipated to diversify the export base of the economy which is highly dominated by coffee export, still with limited supply. Parallel to diversification of export base of the economy, reducing the imports especially the consumer goods was objective of the reform. The study investigates the effect of exchange rate reform in Ethiopians trade performance during the period 1970/71 to 2009/10. The overall performance generally viewed under fixed exchange rate policy (1970/71-1991/1992) and flexible exchange rate (1991/1992-2009/2010). Literatures justified that the fixed exchange rate policy critically affects the country's trade balance. As a result of fixed exchange rate policy the country's domestic currency has been assumed as overvalued. The effect of this over valuation lower the export volume and makes import very cheap hence the trade balance deficit would be widened. Such problem and other related conditions demanded the exchange rate to be flexible. Findings of this study justified positive and significant change in diversification of export base after the exchange rate reform has been observed. The export mix which was dominated (actually it is still dominating) by coffee, fairly increased by non-coffee exports through the depreciation of the values of the country's currency.

On the other hand it has been observed that the structure of imports which is pro-consumer goods remained unchanged even after adoption of persistent devaluation of the exchange rate. Exchange rate reforms were found not to constrain imports as anticipated rather they stimulate imports because diversification and facilitation of export items mostly requires imputes partly imported as raw materials/capital goods. A major policy lesson is that exchange rate reforms (devaluation) are not sufficient to diversify the economy and change the structure of imports. Other major incentives that create conducive environment for domestic production like effective infrastructure and accessibility and supply of credit that could lead to significant improvement in competitiveness are required.

CHAPTER ONE

INTRODUCTION

1.1 Background

Apart from factors like inflation interest rate, exchange rate is one of the most important determinates of a countries relative level of economic health. Exchange rates play vital role in a country's level of trade or terms of trade, which is critical to most every free market economy as well as developing economy in the world. For this, reason exchange is the most watched analyzed and governmentally manipulated economic measures.

Following the currency proclamation of 1945 the exchange rate of the Ethiopian currency with US dollar was created, i.e. official exchange rate of 2.48 birr for each single US dollar.

A periods before massive devaluation in October 1992 the Ethiopian currency was considered as over-valued which has been included in the list of factors that contributes to the poor performance of Ethiopian economy and that of export sector in particular in 1970s & 1980s researchers, using theoretical and empirical models have justified this phenomena under their different studies. Overvaluation of the exchange rate causes the miss allocation of resources in production and promotes investment of resources in rent-seeking in the form of smuggling (illegal trading) and socially unproductive but privately profitable activities and hence, reduces the growth rate of output.

The exchange rate policy of Ethiopia before the 1990s, under both Imperial and Derge regimes can strictly be regarded as fixed exchange rate, which was criticized in the pre-reform periods for various reasons. The major one is that, the policy has stimulated imports and suppresses export. On the official market the rate was been kept below its market clearing rates and never reflect the country's fundamental economic conditions (Narendra et al 1989).

Among the liberalization measures which were designed to remove all institutional impediments and constraints from within or without, so that, resources are put to their best and more effective use with the direction of market force, liberalization of foreign exchange control was one of major external sector related reforms since 1991 which was aimed to alleviate the above stated macroeconomic problems.

A traditional criticism of flexible exchange rate regimes is that, flexible rate increases the level of exchange rate uncertainty and thus reduce incentives to trade. This criticism has generated a large literature that focuses in the impact of exchange rate volatility on trade. However, Mudell's (1961) optimal currency area hypothesis suggests an opposite direction of causality, where trade flows stabilize real exchange rate fluctuations, thus reducing real exchange rate volatility. These two seminal ideas of international trade imply the existence of a standard identification problem: is the correlation between trade and exchange rate volatility indicative of the effective volatility on trade and vice versa? More over depreciation lowers the foreign currency price of export and probably increases the quantity of exports and export revenue in domestic currency. Conditions may exist, however, where export revenue falls. Highly inelastic foreign import demand leads to falling export revenue. Ambiguity also arises if export production incorporates high import contents since the domestic cost or price of export rises with depreciation. During periods of exchange rate appreciation, exporters might price to market, lowering their domestic currency price to maintain export market share (http://www.econ.conn.edu). Still theory and empirical evidence exhibits ambiguity as to the effect of exchange rate on exports and export revenue.

Given these controversial arguments this study examines how trade responds to exchange rate movements in Ethiopia that is the study focuses on the effect of exchange rate adjustment(devaluation) on trade in general and trade components (import, export and balance of

payment) in particular. The conclusion and recommendations of this study will end up measuring the significance of exchange rate movements and outcome of trade positions (terms of trade) respectively. The study will answer the question "is the consistent birr devaluation for the past 30 and above years is correcting/improving the Ethiopian trade deficit problem? or not?

Most less developed countries (LDCs) including Ethiopia are highly dependent on the export of few agricultural products, coffee being a single dominant export of the country for a long period of time. Ethiopia's subsistence agricultural out puts account for 50 percent of GDP and 90 percent of export revenue. On the contrary, the country is extremely dependent on importation of capital goods, fuel, raw materials, semi-finished and consumer goods to satisfy industrial input and sustain consumption of the people (Tura, 1994).

The above argument leads to the basic idea of trade balance (the difference between the exports of goods and services and import of goods and services). The imbalance between Ethiopia and its trading partners devastates the economic development of the country in such a way that it's foreign earning and hence trade balance is significantly low. The country emphasizes on the improvement of the performance of external sector notably exports in order to increase foreign exchange earnings. To do so maintaining appropriate policy instrument is very important. This is strong argument for developing countries where traditional exports suffered from volatile world market (Sentayehu, 1996).

One of the policies that are designed and implemented in Ethiopia is structural adjustment programs (SAPs). SAP is an economic recovery program that is designed with the intellectual and financial support of the World Bank (WB) and the international monetary fund (IMF) to be implemented in a number of developing countries including Ethiopia.

The program contains package of policies substantial devaluation of domestic currencies (Gashaw, 1993).

Devaluation is defined as a deliberated increase in the exchange rate (domestic currency price of the foreign currency) by the nation's monetary authorities from one fixed or pegged level to another (Salvatore, 1994:452). It implies an increase in the domestic price of foreign currency. In other words it is a decrease in the value of country's currency in terms of other currencies (Ibid).

Like many other African countries, Ethiopia face serious economic crisis in the mid 1970s and entire 1980s. this economic crisis manifested itself in various forms such as lower growth rate of GDP (2.4% per annum) in the period 1973 to 1995, negative growth rate of per capita income, an increase in the BOP deficit etc. the transitional government of Ethiopia (TGE), to mitigate the general economic problem, began implementing comprehensive macro-economic reforms and adopted the structural adjustment program (SAP) in 1992. Devaluation of the Ethiopian birr against dollar was one of the undertaken measures in stabilizing the economy. The birr was devalued 59% in terms of dollars. The objective of devaluation, according to TGE, stated to improve the current account balance especially trade balance (Sentayehu, 1996).

Recently, hot controversial issue is being raised, that whether SAP in general and devaluation in particular would result in improving the trade balance by improving the volume of exports, decreasing the import bills, emanating market distortion, and economic growth. Hence, by looking at the performance of the balance of trade as a result of exchange rate, changing policy measures is found to be important.

1.2 Statement of the Problem

The Central Bank (The National Bank of Ethiopia) being representative of the Ethiopian Government adopts continuous devaluation to improve the trade balance as well as the external sector. Yet trade deficit of the country is continued to be widen, for instance, according to 2009/10 annual report of National Bank of Ethiopia (NBE), merchandise trade deficit continued to be negative reaching US dollar (USD) 6.3 billion during 2009/10 compared to USD 3.6 billion in 2004/05. On the contrary the weighted average exchange rate of the Birr reached birr 12.89/USD during 2009/10 compared to birr 8.6518/USD in 2004/05, showing a year-on-year depreciation rate of 23.7 percent (NBE annual report), from this result more improvement in external competitiveness of the country is expected. So far there are no clear cut justifications for the effect of devaluation on the economy in general and more specifically on the trade balance. Therefore, the impact of exchange rate on the Trade Balance of the country is the main issue to be investigated in the study through analyzing the Marshal-Lerner condition (when the sum of demand elasticity for exports and imports, in absolute terms, is greater than unity, devaluation reduces the balance of trade deficit). Hence the focus of this paper lies on analyzing the real effect of devaluation as an economic policy to improve the national economic performance in particular to the external sector by comparing the period where the exchange rate was fixed i.e. the Imperial and Derge regime and flexible exchange rate policy widely applied by EPRDF since 1991/1992 to date. The following hypothesis have been drawn in order to identify the real problem of the study,

The hypotheses that will be tasted in this study are:

- Managed floating exchange rate regime is more important than fixed exchange rate regime for trade balance to improve.
- Testing the Marshal- Lerner condition does it hold in Ethiopian case or not?

1.3 Objective of the Study

The general objective of the study is to investigate the relationship between the exchange rate adjustment and trade balance in Ethiopia the specific objectives are:

- To examine the feasibility of Marshal-Lerner condition in Ethiopia
- To examine the effect of the two exchange rate regimes i.e. fixed exchange rate regime and managed floating exchange rate regime on Ethiopia's trade balance.
- Importance of devaluation for trade balance improvement in Ethiopia.

1.4 Significance of the study

As indicated in the problem of the study, there are limited studies that have examined the response of trade to exchange rate fluctuations. Therefore, the importance of this project study lies in contributing some for the extensions to the pre-existing literature on the understanding of how visible the response of trade to the persistent exchange rate adjustments, that could have large economic implication in terms of trade and export performance to improve the country's competitiveness in international markets and to promote export. The project outcome also will be used as a secondary source, for further understanding about the relationship between trade and exchange rate movements in Ethiopia. Last but not list, the project output can also be used by policy makers to design an appropriate policy regarding the macro determinants of external sector.

1.5 Methodology

1.5.1 Data source and type

In organizing the study and mainly to come up with some empirical results, the paper employs secondary data. The data used in this study are obtained from National Bank of Ethiopia compiled for different purpose and for different periods like quarterly and annually. Data obtained from the National Bank of Ethiopia includes various

exchange rate indexes, values and volume of exports and imports. Annual data on Gross Domestic Product (GDP) and trade balance positions also obtained from the research department and the information center of the Bank. Some supporting data and information to verify consistency figures the Ethiopian Revenue and Customs Authority (ERCA) and the Ministry of Finance and Economic Development (MoFED) have been consulted.

1.5.2 Empirical model specification and Variable description

To show weather the Marshal-Lerner condition holds or not, the study uses log-log or constant elasticity model as follows:

X=f(RGDP,OFEX,PAREX,OPEN, DD)

M=f(RGDP,OFEX,PAREX,OPEN, DD)

Where X=export

M=import

RGDP= Real gross domestic product

OFEX=Official exchange rate

PAREX= Parallel exchange rate.

OPEN= openness (the ratio between the sum of export and import to RGDP i.e. X+M/RGDP)

DD= dummy variable (0 when fixed exchange rate regime and 1 when flexible exchange rate being applied.)

The above function can be expressed in natural logarithmic form as follows:

$$lnX=a_o+a_1lnRGDP+a_2lnOFEX+a_3lnPAREX+a_4lnOPEN+DD+U_1$$

$$lnM=\beta_o+\beta_1lnRGDP+\beta_2lnOFEX+\beta_3lnPAREX+\beta_4lnOPEN+DD+U_2$$

Theoretically RGDP has a positive relation with both export and import because it will increase the capacity to export by increasing production. Import also increase since increase in income will raise demand for imports. Official exchange rate has a positive relationship with export because as official exchange rate increases (devaluation)

export price will decrease and export volume will increase hence international competitiveness increase. On the other hand official exchange rate has a negative impact on import. Because as official exchange rate increase (devaluation), import price will be higher relative to domestically produced items hence devaluation discourage imports.

The effect of parallel exchange rate on export is negative because with high rate of same, exports will be diverted to either contrabands or domestic markets. A rise in the parallel exchange rate will also augment import because high PAREX means cheap official exchange rate, thus it will increase import. Another phenomenon that explains the growth in import and export is the trade liberalization (openness). Because of reduction of both export and import barriers including the cut in export and import tax, openness will have positive relationship in both export and import.

The other model to be specified here, assumes Trade Balance as a function of Real Gross Domestic Product (RGDP), Real Effective Exchange Rate (REER), premium (the ratio between parallel exchange rate and official exchange rate), openness (OPEN) and policy dummy (DD), to show the effect of exchange rate regimes on trade balance. Thus:

TB= f (RGDP, REER, PREM, OPEN, DD)

Where: TB= trade balance

RGDP= real gross domestic product

REER= real effective exchange rate

PREM=premium (the spread between the exchange rate of Birr in the official and parallel market, i.e.; the ratio between parallel exchange rate and official exchange rate).

OPEN= Openness

DD= policy dummy { 0- Fixed exchange rate regime
1 -Floating exchange regime

Using natural logarithmic form we can rewrite the above equation as follows:

$lnTB=C_o+C_1lnRGDP+C_2lnREER+C_3lnPREM+ C_4OPEN+ C_5DD+ U_3$

The effect of Real GDP on trade balance is ambiguous because it may increase export since an increase in Real GDP increase production of export item at the same time it may increase imports' by increasing demand for imports as a result of increase in income. REER will expect to affect trade balance negatively because REER decrease if there is real devaluation of domestic currency , then increased competitiveness in price or the domestic currency, will result in export more and import less hence trade balance increases, the effect of premium on TB is negative because high premium discourages export and facilitate imports there by creates the trade balance deficit, and policy dummy (d) will affect trade balance negatively before devaluation and positively after devaluation.

This part of the study will be briefly explained in chapter Four (titled Model specifications, estimation and interpretation of results).

1.6 Scope and Limitation of the study

To analyze the effect of exchange rate regime on trade balance this study has a period of span starting from last season of the Imperial regime to the current EPRDF regime. Due to unavailability of data, limited attention on the area by government/private institutions including researchers this study is restricted only within the mentioned periods.

This study also deals only with visible parts of trade balance. I.e. it deals with only goods that are exported and imported. It doesn't include intangible or invisible items in the sense that service received and paid, are not recorded at the port of entry and exit. The study focuses only on the effect of exchange rate and exchange rate regime on foreign trade (trade balance) although it affects other items of the balance of payment. Similarly for simplicity and consistency among the exchange rate movements against different currencies the study

deals mainly with the variations in the exchange rate of Ethiopian birr against the US dollar only.

1.7 Organization of the Study

The paper is organized in five chapters. The first chapter gives some highlight about background of trade and exchange rate policies of Ethiopia. The problems, methods, objectives, scope and limitation, data sources and methodologies are also described in this chapter. Literature reviews of conceptual, theoretical and empirical evidences on definition and measurement of exchange rate, exchange rate devaluation and trade balance are discussed in the second chapter. Chapter three tries to provide a brief overview of Ethiopian economy with particular reference to exchange rate policy and foreign trade regime. Chapter four briefly discusses model specifications, estimation and interpretation of empirical results obtained from the estimated models. Finally, chapter five provides the conclusion to the study as well as recommendations emerging from the study.

CHAPTER TWO

2. LITERATURE REVIEW

2.1 Theoretical review of literature

2.1.1 Definitions and Concepts

Exchange Rate

The exchange rate expresses the national currency's quotation in respect to foreign ones. Exchange rate is a conversion factor, a multiple or a ratio depending on the directions of conversion. In a slightly different perspective, the exchange rate is a price. If the exchange are can freely move, the exchange rate may turn out to be the fastest moving price in the economy, bringing together all the foreign goods with it.

Types of exchange rate

The basic distinguishing category of types of exchange rate is Nominal Exchange Rates from Real Exchange Rates. Nominal exchange rate is the relative price of two currencies.

Nominal Exchange Rates (NERs) are established on currency financial markets called "forex Markets, which are similar to stock exchange markets. Rates are usually established in continuous quotation, with news paper reporting daily quotation (as average or finishing quotation in the trade day on a specific market). Central bank may also fix the nominal exchange rate.

NER: can be defined as the price of one country's money in terms of that of another country (Ethier, 1983:285).It is a price and, like other prices, conveys information and incentive to guide decisions about what to produce and consume.

The importance of nominal exchange rate is that, it is a policy intervention variable that a government can announce or fix at any time and as such it shows the intervention of government in the foreign exchange rate market.

Real Exchange Rates (RER) are nominal rate corrected somehow by inflation measures; usually real exchange rate is defined as the price

of tradable goods divided by the price of none tradable goods. It measures the cost of domestically producing traded goods In terms of non-traded goods.

In defining the **RER**, there are two approaches. The first and more traditional approach is based on the purchasing power parity (PPP) approach, which defines the RER as the value of the nominal exchange rate (P) corrected by the ratio of the foreign price level (P*) to the domestic price level. The appreciations of RER mean that the cost of producing tradable gods is increasing and hence the country looses competitiveness in international markets.

Another classification of exchange rates is based on the number of currencies taken in to account. Bilateral exchange rates clearly relate to two countries' currencies. They are usually the results of matching of demand and supply on financial markets or in banking transaction. In this latter case, the central bank acts usually as one of the sides of the relationship.

Multilateral exchange rates are computed in order to judge the general dynamics of a country's currency toward the rest of the world. One takes a basket of different currencies, select a (more or less) meaningful set of relative weights, then computes the "effective" exchange rate of that country's currency.

An increase in RER makes the tradable sector of the economy more profitable causing resource to move from the non-tradable sector to the tradable one. Hence, the depreciation of the real exchange rate shows an increase in the country's external competitiveness.

Although the definition of RER given above is analytically useful, it is difficult to calculate in practice. A more operational definition of the real exchange rate is therefore, the purchasing power parity (PPP) approach.

Exchange Rate Determinants.

Fixed exchange rates are changes chosen by central banks and they may turn out to be more or less accepted by financial markets.

Changes in floating rates or pressures on fixed rates will derive, as for other financial assets from three broad categories of determinants:

i. Variables on the "Real" side of the economy:

ii. Monetary and financial variables determined in cross-linked markets;

iii. Past and expected values of the same financial market with its autonomous dynamics.

To view them separately for the case of the exchange rate, we have to see them separately.

i) Real Variables

- Exports, Imports and their difference (the trade balance) influence the demand of currency aimed at real transactions.

A rising trade surplus will increase the demand for country's currency by foreigners, so that there should be a pressure for appreciation. A trade deficit should weaken the currency, where exports and imports largely determined by price competitiveness and were the exchange rate very reacting to trade unbalances, then any deficit would imply depreciation, followed by booming exports and failing imports. Thus, the initial deficit would be quickly reversed, i.e. Net trade balance would almost always be zero.

This is hardly the case in contemporary world economy. Trade unbalances are quite persistent, as you can verify with these real world data.

Additionally, so seldom, exchange rates go in the opposite direction than one would infer from trade balance only.

An even more radical form of real determination of exchange rate is offered by the "one price law", according to which any good has the same price worldwide, after taken into account nominal exchange rates.

ii) Monetary and financial variables in cross linked markets

➢ Interest rates on Treasury bonds should influence the decision of foreigners to purchase currency in order to buy them. In this case, higher interest rates attract capital from abroad and the currency should appreciate. Decisive would be the difference between domestic and foreign interest rates, thus a reduction in interest rates abroad would have the same effects

Similarly, other fixed-interest financial instruments could be objects of the same dynamics. Accordingly, an increase of domestic interest rates by the central bank is usually considered a way to "defend" the currency. As a temporary conclusion, interest rates should have an important impact on exchange rate but one has to be careful to check additional conditions.

Inflation rate is often considered as a determinant of the exchange rate as well. A high inflation should be accompanied by depreciation. The more so if other countries enjoy lower inflation rates, since it should be the difference between domestic and foreign inflation rates to determine the direction and the scale of exchange rate movements.

The balance of payments can highlight pressures for devaluation or revaluation, reflected in large and systematic trend of foreign currency reserves at the Central Bank. In particular, large inflows, due for instance to a rise in the world price of main export items, tend to raise the exchange rate. Conversely, a collapse in the trust of government to manage the economic conditions might provoke a flight of capital, the exhaustion of foreign currency reserves and force devaluation/ depreciation.

iii) Autonomous dynamics on the forex market

Past and expected values of the exchange rate itself may impact on current values of it. The activities of forex specialists and investors may turn out to be extremely relevant to the determination of market

exchange rate also thanks to their complex interaction with central banks.

Sophisticated financial instruments like futures on exchange rates may play an important role. Imitation and positive feedbacks give rise to herd behavior and financial fashions;

Fears and confidence in a currency are heterogeneously distributed across agents, with special events (as unexpected news) realigning them and generating large movement in the exchange rate.

Impact on other variables

Levels and fluctuations in the exchange rate exert a powerful impact on exports, imports and the trade balance. A high and rising exchange rate tends to depress exports, to boost import and to deteriorate the trade balance, as far as these variables respond to price stimuli, consumers find foreign goods cheaper so the consumption composition will change. Similarly, firms will reduce their costs by purchasing intermediate goods abroad.

A devaluation or depreciation should work in the opposite direction, improving the trade balance thanks to soaring exports and falling imports.

If, however, imports have elasticity to price less than 1, their values in local currency will grow instead of failing. Moreover, if the state, the citizens and/or the enterprises have a debt denominated in a foreign currency, their principal and the interests to be paid soar because of the devaluation. They usually squeeze other expenditures and launch a recessionary impulse throughout the economy.

Exchange rate devaluation (or depreciation) gives rise to inflationary pressures: imported good become more expensive both to the direct consumer and to domestic producer suing them for further processing. In reaction to inflation (actual and feared), the central bank can rise the interest rates, thus sending a recessionary impulse.

Currency crisis have a sweeping impact on income distribution. The few rich able to borrow (because they have collateral and the banks

trust them) will get richer and the people purchasing imported goods facing inflation and reduction of real incomes.

Symmetrically, the central bank may use a fixed exchange rate as a nominal anchor for the economy to keep inflation under control, compelling domestic producer to face tougher competition as soon as they decide to increase prices or accept to pay higher wages.

2.1.2 Theory of Devaluation

A devaluation refers to a deliberate increase in the exchange rate by the nation's monetary authorities from one fixed or pegged level to another. Devaluation should be distinguished from depreciation. Currency depreciation is the result of market action i.e. it takes place when the market demand for foreign exchange exceeds the supply of foreign exchange market. (Salvatore, 1993)

Devaluation is undertaken in different countries among other policy packages mainly to improve the external balance of a country which in turn improves the overall performance. Market situation for foreign exchange may have played an important and indirect role in promoting governments to undertake such actions, nevertheless, devaluation is an official government action undertaken deliberately and legally (Manure, 1998).

The international monetary arrangements established in 1994, by the Britton woods agreement, and which endured until its collapse in 1971 approved official changes in exchange rates as a policy instrument to combat a "fundamental disequilibrium in the BOP of a nation". Lowering of the par value constitutes an act of devaluation. A major objective of the Britton woods agreement was to promote exchange rate stability and the agreement, Therefore, did not contemplate frequent use of devaluation it was meant to be used only as a last resort i.e. when all other measures to correct balance of payment(BOP) disequilibrium exhausted of proved (Manure,1998).

There are different approaches to the BOP. These approaches of analysis of currency devaluation preceded under three different but

complementary approaches elasticity approach, absorption approach and momentary approach.

2.1.2.1 The Elasticity Approach

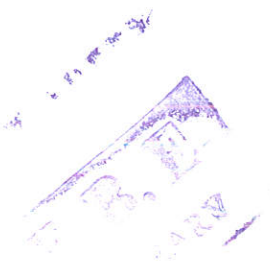
The elasticity approach to devaluation analysis was pioneered by Alfred Marshal, Abba Lerner and later extended by Joan Robinson (1937) and Fritz Machlup (1955) as cited by Keith Pilbeam (1998:58).This approach is the first of non-classical or Keynesian approach to the analysis of current account deficit to change exchange rate or devaluation. It states that the elasticity of demand for exports by foreigners and that of imports by domestic residents determine trade balance or balance of payments. This approach provides an analysis of what happen to the current account balance when the country devalues its currency.

The Marshal-Lerner condition upon which the theory is built states that a devaluation/depreciation of a domestic currency improves the current account only as long as the sum of elasticity of foreign demand for exports and elasticity of domestic demand for imports exceeds unity. However, if this sum is less than unity, then devaluation will worsen the current account.

It was argued that devaluation might work better for industrialized countries than for developing countries. Many developing countries are heavily dependent upon imports so that their price elasticity of demand for imports is likely to be very low. While for industrialized countries that have to face competitive export markets, the price elasticity of demand for their exports may be quite elastic. The implication of the Marshal-Lerner condition is that devaluation may a cure for some countries balance of payments deficits but not for others (Pilbeam, 1998).

The mathematical derivation of Marshal-Lerner condition is indicated by Pilbeam (1994) as follows:

The current account expressed in terms of domestic currency is given by:



CA=PXv- EP*Mv---------- (2.1)

Where P is domestic price level, CA the current account, Xv the volume of domestic export, E the nominal exchange rate(domestic currency per unit of foreign currency), P*and Mv stands for foreign price level and the volume of imports respectively. For simplicity, Pilbeam set the domestic and foreign price level at unity so that the volume of domestic export (PXv) is given by X and the foreign currency value imports (P*Mv) is given by M and hence, equation (2.5) becomes:

CA=X-EM---------- (2.2)

Partially deriving equation (2.6) with respect to exchange rate (E), we obtain:

dCA/dE=dX/dE-E dM/dE – M---------- (2.3)

Let the elasticity of for export and imports be denoted by ŋx and ήm respectively, where

ήx=dX/X/dE/E---------- (2.4)

ήm=dM/M/dE/E---------- (2.5)

Where dX/X/dE/E is the percentage change in export value over the percentage change in the exchange rate, and dM/M/dE/E percentage change in imports over the percentage in their price as presented by percentage change in exchange rate.

From equation (2.4)

dX=ήx. dEX/E---------- (2.6)

And from equation (2.5)

dM=ήm. dEM/M---------- (2.7)

Now, substituting equation (2.6) and (2.7) into equation (2.3) and rearranging it we get

dCA/dE=M (ήx+ήm- 1) ---------- (2.8)

Equation (2.8) is known as the Marshal-Lerner condition. More specifically, the Marshal-Lerner conditions suggest the following rules for effectiveness of devaluation:

i. If the sum of elasticity's of demand for export and import, is greater than 1 (or exceed unity), devaluation would improve trade balance (i.e. narrow trade balance deficit).

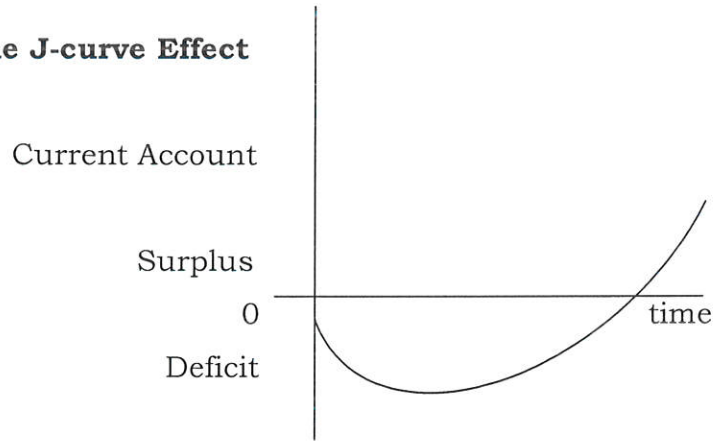
ii. If the sum of those elasticity's, is equal to 1 or unity, devaluation would leave the trade balance unchanged.

iii. If the sum of those elasticity is less than 1, devaluation would result in worsening trade balance i.e. it would widened the trade balance deficit (Manure, 1998:334).

The possibility that in the short run the Marshal-Lerner condition may not be fulfilled although it generally holds over the long run leads to the phenomenon of what is popularly known as the J-curve effect. One explanation for the J-curve phenomenon is that the prices of imports rise soon after real depreciation price effect but quantities take time to adjust downward because current imports and exports are based on orders placed some time back. On the other hand, domestic export becomes more attractive to foreign markets but quantities do not adjust immediately for the same reason (price effect). An increase in value of imports against a constant or a small change in the value of exports results in a trade deficit in the short run. As time passed by, importers have enough time to adjust their import volume with respect to the rise in prices while quantity demand for exports increase hence export volume increase(volume effect) and this result in an improvement in the trade balance. In the long run the volume effect dominates the price effect of a real devaluation.

The idea underlying the J-curve effect is that in the short run export volumes and import volumes do not change much, so that the price affects out ways the volume effect leading to deterioration in the current account. However, after a time lag export volume start to increase and import volume start to decline, consequently the current deficit starts to improve and eventually moves into surplus.

Figure 1: The J-curve Effect



The above figure shows the effect of a devaluation/depreciation of the currency on the trade balance or current account. In the short run the trade balance worsens as the deficit grows and it will improve in the long run. This is the so called J-curve effect.

2.1.2.2 The Absorption Approach

One of the major defects of the elasticity approach is that it is based upon the assumption that all other things are equal. However, changes in export and import volumes will have implications for national income and consequently income effects need to be incorporated in a more comprehensive analysis of the effects of devaluation. Alexander (1952) as cited by Keith Pilbeam (1998, pp. 65-66) gave an important evaluation of this effect, focusing on the fact that a current account imbalance can be viewed as the difference between output and domestic spending (absorption). The absorption approach predicts that if currency devaluation is to improve an economy's trade balance, output must rise relative to absorption. This means that the country must increase its total output by reducing its absorption (domestic savings). According to Cooper (1972), the absorption approach operates as follows:

> "---------*with the economy operating below maximum capacity the price incentive of devaluation would tend to direct idle resources into the production of goods for export, beside encouraging*

spending away from imports to domestically produced substitutes. And the case of an economy operating at full employment, the only way in which devaluation can improve trade balance is for the economy to somehow cut domestic absorption, freeing resources needed to produce additional export goods and import substitutes."

Its central message is that, raising domestic income relative to domestic spending (absorption) will improve the trade balance. In this respect, devaluation is more likely to succeed if it is accompanied by economic policy measures that concentrate on raising income while reducing absorption.

2.1.2.3 The Monetary Approach

The monetary approach to devaluation analysis was pioneered by M .Whitman, K. Frennekel and H. Johnson (Carbough, 1992). According to the elasticity and absorption approaches monetary consequences are not associated with balance of payment adjustment or the extent that such consequence exists, domestic monetary authorities can neutralize them. In other words the elasticity and absorption approaches apply to the trade account of the balance of payment neglecting the implication of capital movement. Thus, the monetary approach to devaluation addressed this short coming. Carbough (1992) explained the monetary approach as follows:

"--------a devaluation of home currency would increase the price level (i.e. domestic currency price of importable and exportable). This increases the demand for money because larger amount of money is needed for transaction. If that increased demand is not fulfilled by domestic sources, an inflow of money from overseas occurs. This inflow result in balance of payment surplus and arise in international reserve. But the surplus does not last forever. By adding to the component of the home country money supply, the devaluation leads to an increase in spending (i.e. absorption) which reduces the surplus. The surplus eventually disappeared when the equilibrium is restored in the home

country's money market. The effect of devaluation on real economic variables is thus temporary. Over the long run currency devaluation merely raises the domestic price level."

According to Salvatore (1990), analysis of new monetary approach is an extension of domestic monetarism to the international economy in that it views the balance of payments as an essentially monetary phenomenon. That is, money plays the crucial role in the long run both as a disturbance and adjustment in the nation's balance of payments.

Thus, a devaluation of the nation's currency, increase the domestic price of internationally traded commodities. The increase in domestic price resulting from devaluation leads to an increase in the demand for nominal money balance in the nation. If this increase in demand for money is not met by the intervention of the nation's monetary authorities, it will be satisfied from an inflow of money or reserves from abroad (a balance of payment surplus) until the excess demand for money is entirely satisfied and the equilibrium between the stocks supplied is re-established. If, however, the nation's monetary authorities increase the money supply to the exact increase in demand for money resulting from devaluation, then devaluation will not lead to an inflow of money or resolves the excess demand from abroad. Here, the devaluation would be completely ineffective in improving the nation's balance of payment as well as the trade balance problem.

2.1.3 Economic Policy in the Open Economy

The main goals of economic policies can be divided into two. The first one is maintaining internal balance i.e. full employment and price stability. The other is maintaining external balance i.e. the trade balance and the balance of payments (BOP) equilibrium.

2.1.3.1 Swan Diagram.

Swan diagram is one of the most important economic policies that show how to maintain internal and external balance.

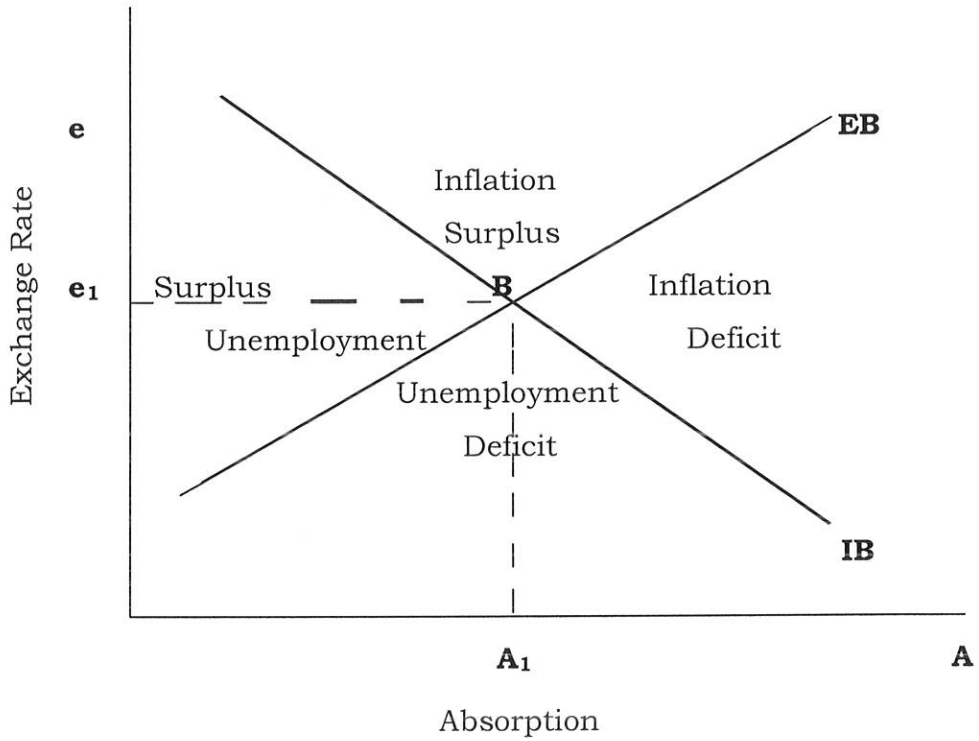
Internal Balance (IB): is a combination of domestic absorption (A) (the sum of consumption, investment and government expenditure) and exchange rate (E) such that the economy maintains internal balance (full employment and price stability). IB is negatively sloped because, by assuming IB at the initial level, if E increases (devaluation), export will increase and through the multiplier process output (Y) will increase resulting in over employment (inflation) because initially there is full employment. Hence, to get back to full employment, domestic absorption (A) must be decreased. Therefore IB is negatively sloped.

From the figure 2 for a given exchange rate (e_1), if domestic absorption is beyond A_1, there exist over employment and hence inflation. On the other hand, for a given exchange rate (e_1), if domestic absorption is below A_1, There exists unemployment.

External balance (EB): is a combination of domestic absorption and exchange rate such that BOP is in equilibrium. EB is positively sloped. Because, by assuming EB at the initial stage, as absorption (A) increases, output (Y) will decreases hence import will decrease. Therefore, trade surplus will prevail. To avoid this surplus, exchange rate must be decreased (revalued) to eliminate the surplus by decreasing exports and increase imports.

From figure 2, for a given exchange rate (e_1) if domestic absorption is more than A_1, output is higher and also import increase, as a result there exits BOP deficit. On the contrary, for a given exchange rate (e_1), if domestic absorption is less than (A_1), output is lower and also import will decrease, as a result BOP surplus will reveal. Generally, both internal and external balance achieved only at the point B (see figure 2).

Figure 2: The Swan diagram



From the above figure, at point B there is no surplus, deficit, unemployment and inflation. This will achieved at exchange rate (e_1) and domestic absorption (A_1). This is called The Swan diagram.

2.1.3.2 Mundel-Flaming Model

The Swan diagram is one of an important model in an open economy. But it has two main limitations. The first is it does not take into account capital flow. The other is it does not make no distinction between monetary and fiscal policies. The Mundel-Flaming model is an improvement of Swan diagram which takes into account the two main limitations.

In Mundel-Flaming model internal balance is indicated by money market and goods market and external balance is indicated by BOP.
Fixed exchange rate effectiveness of fiscal policy with perfect capital immobility is an increase in interest rate but there is no change in

output. Hence, fiscal policy is ineffective and it results in full crowding out of private investment (an increase in interest rate will only decrease investment). When capital is mobile but less responsive (steep BP), fiscal policy is effective to a certain extent. And there exist partial crowding out of private investment. When capital is mobile and very responsive fiscal policy is effective to a great extent. When capital is perfectly mobile (horizontal BP) fiscal policy is the most effective and there is no crowding out of private investment since there is no increase in invest rate (i.e. domestic interest rate is equal to world interest rate). In conclusion, the effectiveness of fiscal policy with fixed exchange rate increases with the degree of capital mobility. I.e. the more mobile capital becomes, the more effective fiscal policy is. On the other hand, the fixed exchange rate effectiveness of monetary policy decreases with the degree of capital mobility. I.e. the more mobile capital becomes, the less effective monetary policy is.

Under flexible exchange rate, monetary policy is influencing output (Y) where as it was ineffective under fixed exchange rate. Further, the degree of effectiveness under flexible exchange rate increases with the degree of capital mobility. Fiscal policy, on the other hand, is much less effective under flexible exchange rates than under fixed exchange rate as a capital becomes very mobile internationally, since expenditure-switching effects dampen initial expansionary effects. The impacts of fiscal policy on output are the strongest when capital is immobile. The flexible exchange rate system does, however, give the country more policy options than a fixed exchange rate system since the external balance is always in balance. If a country wishes to attain several domestic targets, the coordinated use of monetary and fiscal policies can be helpful (Appleyared and field, 2001).

2.1.4 Devaluation and Expenditure Switching Policy

A country devalues it's currency in order to correct its BOP disequilibrium/deficit. Currency revaluation is undertaken to solve the BOP surplus problems. But it is the BOP deficit problem (disequilibrium) which presents a more serious problem to deal with.

For this particular study, therefore the focus will be restricted to the discussion of devaluation associating it with the problem of disequilibrium/deficit in the TB/BOP of a country. In the mean time it should be noted that devaluation is used to switch domestic and foreign spending away from foreign goods and services to the domestically produced one. This is the reason, why devaluation considered as an expenditure switching policy. Such practice is applied in most of the time in Ethiopia. Mean while parallel with the BOP problem particular emphasis is given to the Term of Trade (the ratio between export and import prices) changes caused by devaluation. Devaluation reduces export prices and raised import prices and thereby it turns the term of trade against the home (or devaluing) country.

Precisely, devaluation is supposed to encourage exports and discourage imports of goods and services and there by improve current account balance. It also tends to encourage unilateral transfer in to the devaluing country and discourage unilateral transfer out of the country, re-in forcing current account surplus tendencies.

The effect of devaluation on agriculture of developing countries is small in the short-run. According to Johanson (1987), the reason is lengthy gestation period of tree crops make the short-run elasticity's of supply much lower than that of the long-run. He further noted that, even in the case of annual crops, capacity constraints are often important limiting factors because of land shortage and rudimentary technology. Financial constraints have also a significant effect on the elasticity of exportable. That is, though farmers are markets oriented and have the will to employ themselves fully, they may not have access to enough land and limited access to capital or they may face income constraints to use fertilizers and machinery. Domestic market constrains also have significant influence on the elasticity of export. Mostly, the expected response (what ideally farmers want to produce and sell) is different from the practical situation (what farmers are

able to accomplish). This indicates that transport and storage bottlenecks are often considerations in farmers' decision to produce for subsistence, domestic market or export. Extending this analysis to the manufacturing sector, in many semi-industrialized and middle income countries, the substantial part in the cost of production is the cost of imported raw materials and capital goods. So the volume of imports can affect the volume of exports through the production process (Johanson, 1987).

2.2 Empirical Literature

The short- run and long-run relationships between the trade balance and exchange rate have been subject to many empirical studies. Here a brief overview is provided of results of the literature for developed and developing countries. This will demonstrate that the variety of results may stem from empirical evidence being extracted from different time periods and different methodologies.

According to Krugman and Taylor (1978), at least in the short-run, devaluation may not work the way we usually assume. The argument is in the short- run the balance of payments deficit is "structural" that is both imports and exports are not very sensitive to price changes for a given level of domestic output. As a consequence, any favorable short-run effects of devaluation on the trade balance come primarily through economic contraction rather than substitutions. Thus, devaluation is costly cure, and devaluation big enough to reduce the balance of payment deficit substantially in the short-run may be unacceptable.

Tumovsky (1981) analyzed the effects of devaluation under the condition of rational expectations. According to his study, real output can be the cause to the unanticipated component of changes in exchange rate in the short-run devaluation which is under predicted will lead to a less than proportionate increase in the price of domestic output, together with an expansion in real domestic activity. A devaluation which is over predict will lead to a more than

proportionate increase in the price of domestic output, causing the level of domestic output to fall. A correctly anticipated devaluation will lead to an exactly proportionate increase in the domestic price level, leaving the level of domestic real output unaffected. Thus it is possible for a devaluation to have a perverse contractionary effect on the economy and this will be the case if it does not measure up to previously held expectations. Similar study by Driskill (1981) stated that the current trade balance depends on Prior expectations of current relative prices captures the idea of that there are lags in production process and consumption decisions regarding import and export. Note that if the bulk of traded goods are subjected to these lags, then the trade balance might exhibit a J-curve effect, where an anticipated change in relative price creates a perverse trade balance responses.

Evidence presented by Cooper (1971) appears to substantiate the claims that, for the first twelve months after devaluation, the rise in price and wage are considerably less than the size of devaluation. This seems to opposed the evidence of Donovan (1981), which confirmed that devaluation in developing countries initially and directly increases the price level and may raised the underlying rate of inflation, there by tending to reduce the extent by which the real exchange rate depreciates over time. On the other hand, Cannoly and Taylor (1976) found out that over the two years' post-devaluation periods, the price of traded goods rose by an amount near to the extent of devaluation for eight devaluated country they investigated.

Bahmani-oskoee, Mohsen, and Aise (1994) tested 41 developed and less developed countries for the existence of co-integration and the J-curve effect. The result indicated that the trade balance and the real effective exchange rate are co-integrated for only fourteen countries. In the countries exhibiting co-integration, there was some evidence of the J-curve effect.

Edwards (1989) examine 39 devaluation episodes using the "with-without" approach and regression analysis and found that in many

cases devaluation have negatively affected the growth of output (at least in the short-run) and real wages but improve the current account. In addition to these multi-country studies other country specific studies by Agenor (1991)as indicated in Haile (1994) analyzed the impact of devaluation, on the above macro-economic aggregates also found mixed results but most correlate the above results that devaluation may be contractionary (at least in short-run) while it improves external balance.

Kamin (1988) study of devaluation and macroeconomic performance finds that devaluation does improve trade balance because it stimulates exports. In their study Junz and Rhomberg (1973) recognized the possibility of lags in the quantity responses to price changes in international trade. They estimated that, it takes about three years for 50 percent of long-run quantity responses to take place and five years for 90 percent to occur. By measuring the quantity response only during the year of the price change, these econometric studies greatly under estimated long-run elasticity.

Guilherne Moura and Sergio Da Silva (2005) conducted a study on the existence or non-existence of a Brazilian J-curve. They find that the Marshall Lerner condition holds true for Brazilian trade balance, and no evidence of a short-run J-curve.

Ben U.Omojimite and Godwin Akpokodje, in their study which assess the exchange rate reform and response of trade in Nigeria: the study investigates the effect of exchange rate reforms on Nigeria's trade performance during the period 1986-2007. According to the study exchange rate reform in Nigerian economy was anticipated to diversify the export base of the economy from oil to non-oil exports through competitiveness in the relative price of non –oil exports, in addition; to reduce imports especially of consumer goods. However the study finds a small positive effect of exchange rate reforms on non-oil exports through the depreciation of the value the country's currency. It was also found that the structure of imports is pro consumer goods

remained unchanged even after the adoption of exchange rate reforms. Exchange rate reforms were found not to constrain imports as anticipated. Rather, they stimulate imports, albeit insignificantly.

The stimulation of non-oil exports is the major focus of exchange rate reforms through competitiveness in the relative price of non-oil exports to be occasioned by the depreciation of the naira (the Nigerian currency) and also other incentives such as the abolition of export licenses, retention of 25% of foreign currency proceeds (later increased to 100%) for the exporter's use, and the abolition of agricultural commodity marketing boards. Despite these incentives, the response of non-oil exports to exchange rate reforms has not been too impressive. The performance of oil and non-oil exports in 1970- 2005 shows that there has been virtually no change in the share of both oil and non-oil exports in total exports over the years, except a moderate increase in the share of non-oil exports in the period immediately following the commencement of exchange rate reforms in 1986. The figure reveals an increasing trend in the share of non-oil exports in 1987 and 1988 after which the share dropped in 1989. Another moderate increase in the share of non-oil exports was recorded in 1999. Since this period, the share of non-oil exports remained virtually as it was during the mid-1980s. The share of oil exports with that of non-oil exports before and during exchange rate reforms reveals that the share of non-oil exports dropped from an annual average of 8.2% before reforms (i.e., 1970-1985) to 3.6% during reforms (1986-2005). On the other hand, the share of oil export rose from an average of 91.7% before reforms to 96.4% during reforms. This development is in spite of the positive growth experienced in the non-oil sector during the period under consideration. The positive growth was recorded in non-oil exports in 1987- 89, 1994-95, 1998-99 and 2002-05, periods during which the country also experienced real exchange rate depreciations.

On the other hand, raw materials, capital goods and consumer goods imports are the major categories of imports in Nigeria. Exchange rate

reform is expected to shift expenditure on imports from consumer goods to raw materials and capital goods. A declining trend in the share of imported consumer goods between 1986 and 1990, after this period, the share began to rise. Although there was a decline in the share of consumer goods imports between 1994 and 1996, the general pattern was that of an increasing share.

According to Albert Makochokanwa, Zimbabwe has exercised different types of exchange rate policies during 1975 – 2007. Prior to independence in 1980, Zimbabwe operated a dual exchange rate system, a system which had been put in place in 1979, with the Zimbabwe dollar fixed to the South African Rand, and to a trade weighted basket of fourteen currencies which included the US dollar, the British pound among others. This dual exchange rate system was however abandoned in March, 1980. The main reason behind the abandonment of this system was the fact that it had become unsustainable because of the realization that, although South Africa continued to be the country's major trading partner, removal of trade sanctions at independence implied that Zimbabwe, in its exchange rate policy had to consider other new trading partners. Some of the policies which are relevant to this particular study have been viewed hereunder.

- Beginning January 1994 The two tier exchange rate system was effectively introduced – one quoted by the RBZ and the other one determined in the interbank market. The two tier exchange rate regime was however only required for a transitional period since use of two rates was bound to cause distortions. To avoid distortions in the economy and move towards a market determined exchange rate, it was imperative that these two exchange rates be unified with most restriction on current account transactions removed and therefore, making the Zimbabwe dollar more convertible for such transactions. The convergence of the two-tier exchange rate system was formally achieved on July 2, 1994. Unification implied that the RBZ had to

stop quoting its exchange rate and that all foreign transaction would be conducted on the basis of the market determined exchange rates.

- Managed Float Exchange Rate Regime July 1994 – March 1999

Adverse balance of payments developments in 1997, particularly from the last quarter, combined with rising domestic inflation, exerted immense pressure on the exchange rate. As market confidence declined, speculative behavior about probable currency depreciations intensified. This led to prepayment of lines of credit, hoarding of foreign exchange and further attacks on the Zimbabwe dollar. These developments intensified exchange and further attacks on the Zimbabwe dollar. These developments intensified from October 1997, as evidenced by significant build up of foreign exchange balances of companies at banks. Finally the currency collapsed on 14 November 1997, depreciating sharply by 31.4% from Z$13.7/US$ on 13 November to Z$18/US$.

- Export Support Rate 19 February 2003 – 12 January 2004

An Export Support Rate of Z$800 per US dollar was introduced in February 2003 in order restore exporter viability and increase the capacity of the key sectors of the economy to generate foreign exchange. Government undertook to review the exchange rate on a quarterly basis in line with macroeconomic developments in the country and purchasing power partly with the country's major trading partners. Although after the introduction of the export support scheme, monthly foreign exchange inflows improved, nevertheless, the capacity of exporters to fully benefit from the export support rate was undermined by high inflationary environment coupled with constraints on production.

- Tradable Foreign Currency Balance System 24 October 2005

The Tradable Foreign Currency Balance System which was implemented since October 2005 places more emphasis on market forces. Under this system, exporters and other users of foreign exchange in the inter-bank market at a market determined exchange rates. On the demand side, importers and other users of foreign

exchange, bought foreign exchange from the interbank at a market determined exchange rate. Thus under this regime, the country continued to operate a two tier exchange rate system with the inter-bank and the official exchange rate.

2.2. The Effects of Devaluation

2.2.1 In Developed Countries

Developed countries, especially the United States, have received most of the attention in this field of research. In their seminal paper, Rose and Yellen (1989) employed disaggregated, bilateral data and do not find support for the J-curve effect or evidence of a long-run relationship in the case of U.S data for the period 1960 to 1985. Neither did Bahmani-Oskoee and Brooks (1999), analyzing bilateral disaggregated U.S trade data with respect to six major trading partners and find evidence of a J-curve effect. However, they did report a significant long-run relationship between the trade balance and the exchange rate, indicating that a real depreciation of the U.S dollar has a favorable effect on the U.S trade balance.

Papell (1994), estimated model of exchange rate and price for six countries: Canada, France, Italy, Japan, the United Kingdom, and the United States and three measures of the price level; the Consumer Price Index (CPI), Producer Price Index (PPI) and Growth National Product (GNP) deflator. And he found considerable variation in the effect of exchange rates on prices depending on the measure of the price index, with the effect strongest for the PPI, followed by CPI and GNP deflator. He also found considerable variation across countries, with effects strongest for the United Kingdom, followed by Canada and United States.

Jacques (1975) had studied the 1967 devaluation of the pound sterling. According to the study, the volume of exports, including semi-finished and manufactured goods of a United Kingdom had expanded rapidly following a devaluation of the pound. By 1971, the effect of devaluation account for 18% of the increase in export volume

of the semi-finished and 20% of the finished manufactured goods. On the other hand, the import of finished goods has been substantially reduced by about 10.5% from the period prior to the devaluation.

R.Scott Hacker and Abdulnasser Hatemi (2004) tasted the trade J-curve for three transition central European countries the Czech Republic, Hungary and Poland in their bilateral trade with respect to Germany. They find that there are some characteristics associated with a J-curve effect for each country i.e. after a (real or nominal) depreciation the export to import ratio briefly drops to bellow its initial value within a few months and then rises to a long-run equilibrium value higher than the initial one.

France had also devalued its currency in 1969. According to Dapple (1976), the devaluation had affected the export volume. Specially, export volume has increased by about 10-20% while imports where reduced. As a result, the country's balance of payment had improved.

However a sample of developed countries shows that devaluation of currency will not produce an automatic improvement in balance of payment of a country. This is because in the short run foreign exchange demand would be unstable (Salvatore, 1986). However, after an adjustment period of one year, the Marshall-Lerner conditions hold for most of the developed countries in the sample.

2.2.2 In Developing Countries

When we come to the case of African countries, Bhagwati and Onisuka (1974) after having an empirical study in 46 African countries which devalued their currencies, concluded that imports continued to grow after devaluation and in the majority of cases, the growth rate exceeds the devaluation growth rate, i.e. conditions that requires the elasticity of export and import demand to be more than unity is not satisfied. This is because of the very strong demand for imported necessities and inelastic foreign demand for Africa exports. Thus, with relatively inelastic demand for exports and imports,

devaluation has little or no effect in changing trade balance in the context of African countries (UNECA, 1990).

A case study by Swamy (1994) indicated that, discrete devaluation's depreciated the real exchange rate during the 1980's: as a result manufactured export growth picked up (10 percent a year increase during the adjustment period). Despite this, the overall export grows only at the same rate as GDP in the second half of the 1980's. But this overall result is due partly to the still relatively large share of primary commodities in the export structure, for which growth is modest. The rate of manufactured export sharply, increased, suggesting that production may be shifting from supply for mainly domestic markets to exports of manufacturing.

In the world bank study (1993), essentially using 'before-after' approach, out of twenty-nine Sub-Saharan Africa (SSA) 'adjusting' countries fourteen had an improvement in GDP growth where as fourteen had showed a decline between the period 1987-1991 (World bank, 1993). The World Bank study further confirms that in almost all cases, rates of growth, investment and saving were not at levels required to sustainable development (World bank, 1993).

Frank W. Agbola (2004) studied the effect of devaluation on trade balance of Ghana on annual data spanning the period 1970 to 2002. He finds that devaluation does not improve the trade balance of Ghana in the long run.

According to World Bank (1994) report, most Sub-Saharan African countries require real depreciation to compensate for the worsening term of trade in 1980's. In addition, many African countries started with large premiums in the parallel foreign exchange rate. By and large countries with flexible exchange rates have made significant progress in increasing their international competitiveness, while those with fixed rate are still struggling to make the much needed real depreciation in part because fiscal policies was not supportive. According to this report, between 1987 and 1991, the median rate export growth for African adjusting countries was 3.6 percent a year.

The study on the impact of exchange rate reform on Nigerian trade has shown that exchange rate reforms accounted for a marginal improvement in the country's trade balance. The study does not support the view that exchange rate reforms discourage the importation of consumer goods. The study shows that during the reforms, the importation of raw materials and capital goods did surpass the pre-reform era. The Zimbabwe's exchange rate policy was not as such stable rather fluctuating, such practice will expose to high premium in parallel markets.

In most developing countries two major problems have been seen in the application of devaluation, which are

1/ Persistent Balance of payment problems,
2/ High inflation

On the other hand most developed countries' best policy tools of stabilization and structural adjustment programs are monetary (interest rate) and fiscal (tax) policies. Whereas the developing countries mostly apply devaluation as the main stabilization and structural adjustment program measure. Therefore, the outcome could be:

- Raise the domestic currency prices of traded goods and at the same times its price relation to those non-traded goods
- Encourage production of more of traded goods than that of domestically consumable goods that means in general production will shift from non-traded goods to tradable goods that will possibly leads to current account surplus for the moment. But creating shortage of production and supply of non-tradable goods to domestic demand especially food items. The Ethiopian case shows such symptom.
- Increase export of primary in most case agriculture products, prices of which are very fluctuating as a result problem of BOP as well as problem Trade Balance will be widened.

The long lasting problem of BOP in Ethiopia registered deficit. The size or magnitude of in the terms of trade or external sector in Ethiopia is under pressure with highly deficit.

The cause of the higher deficit can be mentioned as:

- Higher domestic rate of inflation than major trading partners
- Price fluctuation of export in an international market
- Low level of export production due to backward production technology
- Domestic price increase in tradable goods.

2.2.3 Empirical Evidence in Ethiopia

The main justification for devaluation in Ethiopia is to raise the relative price of export commodities there by making them more profitable and stimulate production ultimately leading to higher exports. But it is often argued that supply responses to higher prices in Africa might not yield as high results as can be expected in developed economies, where there is more room for flexibility and adaptability.

However, studies (World bank, 1987) indicate that the short-run and long-run price elasticity's for Ethiopia's total agriculture are 0.24 and 0.56 respectively. These results are higher in the long run than in the short-run. And long-run elasticity's calculated for nine Sub-Saharan African countries which were 0.18 and 0.21 respectively.

Although the values of both export and imports have increased following the 1992 devaluation of the birr, the current account balance deteriorated over the period of 1991/92 to 1998/99. The current account deficit increased from 310.6 million birr in 1991/92 to birr 3655.8 million by the end of 1998/99. This means the current account deteriorated at an average rate of 50.7% (Andualem, 1999).

Befekadu and Kibre (1994) analyzed the impact of devaluation on the supply of coffee. According to them the supply response of coffee to devaluation is not exciting in the short to medium run because of its

gestation period which, at the minimum, extended over three years. Second and most importantly, expected increase can materialize only if we assume farmers price expectations to run a head of four years or more. Given the host of uncertainties over hanging in the production process of such perennial crops and experience of farmers regarding price volatility, such an assumption is an over stretched one.

Edossa (2000) has also analyzed the effect of devaluation on the trade balance of Ethiopia using absorption approach. The study found out that the disparity between gross domestic expenditure and total output has narrowed down following the 1992 devaluation of the birr. However he also disclosed that the rate of increase in imports is much higher than that of export following the devaluation. As a result, the trade deficit did not decline as expected.

The Marshall-Learner condition states if the absolute value of the sum of marginal propensity to import and marginal propensity to export is greater than one. Then devaluation or depreciation will improve the trade balance. And according to Haile (1994) for import and export demand function of Ethiopia, this condition is satisfied. Thus, to the extent that a simple Keynesian open economy model is applicable to Ethiopia and one has faith in the elasticity approach, therefore, devaluation will improve the trade balance. But according to him, the elasticity of demand for imports with respect to change in exchange rate is strongly elastic while that of exports is very inelastic (0.2). These suggest that any improvement in the trade balance due to devaluation mainly comes from a decrease in imports not from an increase in exports.

Anteneh (2001) examined the Marshall-Lerner condition using the before- after approach to analyze whether devaluation or depreciation will improve the trade balance. And he found that import elasticity of 0.164 and export elasticity of 0.52 and the sum of 0.68 which is less

than unity. And he concludes that devaluation would result in worsening trade balance i.e. it would increase size of the deficit.

Sintayehu (1996) made a study on the impact of devaluation on macro-economic variables like price, trade balance and output, argued that devaluation may not improve trade balance of Ethiopia since the country's rate of import is much higher than the rate of export. Thus, he argued that the trade balance of the country will deteriorate further in the near future.

From above, it is clear that neither theoretical nor empirical studies have established definitely weather a devaluation of a country's domestic currency would improve its trade balance. This clearly suggests in studying the implication of the change in exchange rate (devaluation) on the trade balance.

CHAPTER THREE

AN OVERVIEW OF ETHIOPIAN ECONOMY, FOREIGN TRADE AND EXCHANGE RATE REGIME OF ETHIOPIA

3.1 Background

Ethiopia is a country, which is rich with huge human resource (actually unskilled manpower), arable land and natural resources. However much of its potential is not yet exploited. To start with, out of sixty percent of its landmass, which is known to have the potential for agricultural development, only 15 percent have been developed. Although its contribution to the national economy is very limited the country's livestock wealth is the second largest in Africa. The mineral resource potential is also high, much of it yet to be exploited. A few of them are gold, platinum, marble, tantalite, copper, potash, soda-ash, zinc, nickel, iron, and natural gas (Eshete).

The Ethiopian economy remains heavily dependent on agriculture, which accounts for about 50 percent of the GDP. An estimated 85% of the population gains its livelihood directly or indirectly from agriculture production. The Ethiopian commodity export sector is basically characterized by the dominant share of agriculture law commodities in generating the greater proportion of the export earning of the country. These export commodities together have accounted for more than 90% of the total merchandise export earnings. (Eshete)

The level of development of the manufacturing sector in Ethiopia is at its infancy; and the country's industrial base is very low. The share of intermediate and capital goods industry is very insignificant. The Industrial sector is heavily dependent on imports of semi-processed goods, raw materials, spare-parts and fuel. In addition to imported inputs, the factories depend upon backward and subsistence agriculture for their raw material demand.

The economic policy of the Derge regime (1974-1991) could be considered as the major internal cause. Internal factors include

macro-economic mismanagement such as overvalued real exchange rate and excessive fiscal deficit. During the Derge regime Ethiopia's economy was characterized by large budget deficits, overvalued exchange rate and persistent deficit in the balance of payment. Moreover, the fiscal imbalance was largely financed by money creation and through domestic bank borrowing during the Derge period. Apparently, such financing has led to price rise of non-tradable. However, the domestic price of tradable increases roughly at the lower international rate. Hence, the real exchange rate, at a fixed nominal exchange rate, declined (appreciation of the rate). As these external and internal factors affected the real exchange rate of country, it is worthwhile to look in to the performance of national economy at large. In particular, there are important linkages between exchange rate misalignment and the macro-economic condition of a given nation in the sense that a persistent misalignment of exchange rate has a negative impact on investment, productivity and hence, no economic growth.

Moreover the Derge regime (1974-1991) was characterized by command and central planning where the public sector covers almost all major economic activities. However, in the post 1991 period, Ethiopia began moving from a state run economy to the market oriented economy and it follows the private sector to play an active role in the economy. During this period, the country is in the process of taking various reform measures. Among the economic reform packages, foreign exchange liberalization and devaluation of the currency were the very important measures.

An economic reform programmed developed in collaboration with the World Bank and the international monetary fund (IMF) and on a series of structural adjustment programmers since 1992 supports the countries development strategy. Major gains have been made from the reform program, particularly as a result of liberalization, low inflation, fiscal discipline and low government borrowing, infrastructure and the growth of the private sector.

3.2 The External Sector

3.2.1 The Export Sector

The export sector has played an important role to bring about rapid economic growth in developing countries. However, most of them largely depend, for their source of currency earning on a single product or a very narrow range of low value of products, mostly agricultural commodities and minerals. Basically these traditional exports face limited demand due to their low-income elasticity.

Likewise, the Ethiopian commodity export sector is basically characterized by the dominant share of agricultural raw commodities in generating the greater proportion of the export earning of the country. The export commodities together have accounted for about 90% of the total merchandise export earnings. The major export items, in order of their significance in the total commodity export value include coffee, hides and skins, oil seeds, pulses, chat, fruits and vegetables. Export of "chat" has become one among the most important items in the post reform periods (table 2 and annex I).

Since agriculture, in general is under the vagaries of nature, particularly in the Ethiopian case, the high concentration on non-traditional export goods results in an unstable export performance. What is more, the sector is highly susceptible to the erratic nature of prices and unpredictable demand in the international market.

The total amount of export value in 1970/71 was 430.5 million birr. It has steadily increased to 857.5 million birr in 1979/80. However, fluctuated and reached 279.0 million birr after the reform period i.e. 1991/92. Export earnings increased with little fluctuations and recorded 26,115.3 million birr in 2009/10.

Starting from 452.9 million birr in 1974/75, the export earnings increased to 948.5 million birr in 1979/80. In the 1980s export earnings declined and reached 318.4 million birr 1991/92. Exports contribution to GDP during the Derge regime was on the average 2.08 percent of GDP which is much lower than 8.01, which is the contribution of exports to GDP during the EPRDF regime. The major

policy factors, which contributed to the poor performance of the external sector in this period, are the overvalued exchange rate, which was a disincentive for exports, heavy taxation of exports and the marginalization of the role of the private sector.

After the reform, post 1992, the government made a new policy to promote the export sector, which includes the abolition of tariffs and incentives to exporters. In the post 1992 period, export has increased from 802.2 million birr in 1992/93 to 26,115.3 million birr in 2009/10. The share of export averaged about 6,380.55 annually but its contribution to GDP, however, does not show significant improvement; it was on the average 8.01 percent during the period of the EPRDF regime.

Table 3.1: Average Annual share of Exports, Imports to GDP

Period	Avg. Exports (in millions of Birr)	Percentage contribution of Exports to GDP	Avg. Imports (in millions of Birr)	Percentage contribution of Imports to GDP	Avg. GDP (in millions of Birr)
Imperial regime (1970/71-1973/74)	432.4	1.36%	454.2	1.43%	31803.48
Derge regime (1974/75-1990/91)	873.39	2.08%	1575.83	3.75%	42037.99
EPRDF regime (1991/92-2009/10)	6380.55	8.01%	26435.87	33.20%	79629.04
The whole period (1970/71-2009/10)	3533.53	6.10%	13612.5	23.50%	57933.36

Source: National Bank of Ethiopia

The major factor that contributed to poor performance of the export sector for the whole period is its dependence on agricultural products and lack of diversification in the exportable commodities. Since agriculture in Ethiopia depends on weather, backward technology with unskilled labor of production process and the high concentration of exported goods resulted in an unstable export performance.

3.2.1.1 The Structure of Exports

Ethiopia's export sector is characterized over dependence on few agricultural products, with very limited exports of manufactured and semi-manufactured goods. This structure of concentrating on few agricultural commodities has not significantly changed over time. The achievements of current reform program are below expectations, as it has not lead to a radical shift in the structure of exports. Most of the export items directly originated from the agricultural sector. Besides, coffee has still remains to be the dominant export commodity, through its share in the value of total exports fluctuates from time to time. It accounted for an average of 45.48 percent of export earnings between 1970/71 and 2009/10. Oilseeds, chat, hides and skins, Gold, pulses, live animals, fruit and vegetables, meat and meat products, sugar and Bees' wax contributed 14.69 percent, 9.79 percent, 7.18 percent, 7.12 percent, 5.37 percent, 2.36 percent, 1.31 percent, 1.30 percent, 0.55 percent, and 0.14 percent respectively (see table 3.2 and appendix I). This indicates that the dominant shares of Ethiopian export sector are agricultural commodities and it confirms that the diversification of the export sector is limited to these agricultural raw commodities.

The absence of diversification and the high dependency on specific commodities make the export sector to be exposed to external shocks. Accordingly, the value of major export items fluctuated from year to year in terms of value due to the volatile and erratic behavior of prices and unpredictable demand in the international market. Similarly, on the supply side, these agricultural items are influenced by a large number of factors that are endogenous to the suppliers' production decision and behavior.

Although there have been occasionally relative increases, the value of exports has decline from birr 948.5 million birr in 1979/80 has gone down to birr 318.4 million birr in 1991/92 (see annex II). The major reason behind Ethiopia sluggish export growth had been the reduced competitiveness of exportable. This weakness ran across virtually all

exports and was largely the result of the appreciation of the country's real effective exchange rate.

The year before devaluation (1974/75to 1990/91), the contribution of coffee to the value of total export declined. However, on average, coffee contributed more than 60% of total export earnings during the above period. Hides and skins, oil seeds, pulses, chat, meat and meat products, fruits and vegetables and live animals constituted 12.06 percent, 2.89 percent, 3.86 percent and 1.83 percent, 0.60 percent, 1.09 percent and 2.04 percent during the above period respectively (see table 3.2 on page 100).

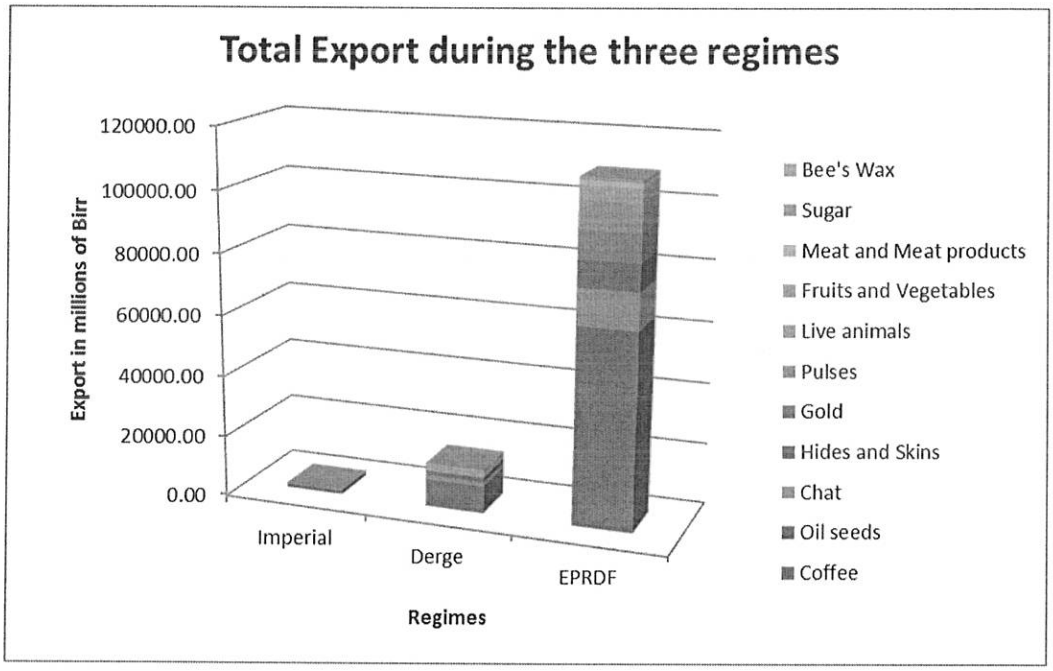
From table 3.2, we can understand that coffee constituted to take the highest share of total export value and has not changed over the period under consideration. However the contribution of oil seeds and pulses declined during the Derge as well as the EPRDF regime. The contribution of chat from total export value has increased shapely to 9.62 percent as compared to its share during the Imperial as well as the Derge regime with amount of 0.82 and 1.68 percent respectively At the same time the contribution of Gold which were nil in the Imperial and Derge regime stood at 5.56 percent in the EPRDF. All other items as stated in table 3.2 showed a declining tendency from the starting period to the end.

Problems of Ethiopian's foreign trade can be classified in to broad categories, namely, demand and supply side problems. The world demand for agricultural products (Ethiopian's major export items) is limited due to slow growth of population, low-income elasticity of demand for these goods, the development of agricultural substitutes in industrial countries. Moreover, the world price of primary products are characterized by price fluctuation and deteriorating terms of trade. On the supply side, policy problems, structural constraints and natural factors (drought, diseases, etc) are major factors, which constrain Ethiopian's foreign trade. Demand side and supply side problems together have led to ever growing trade deficit, which directly

affects the size and a sign of the current account balance. As a result, the deficit in the current account of the balance of payment of Ethiopia has been widening from time to time. This deficit is covered mainly through external finance and this would lead to ever increasing debt burden.

As a whole, a few agricultural products had categorized the export sector of Ethiopia, a few market directions, trade restrictions and other unnecessary subsides and fixed exchange rate policy. All these made the export sector to remain at its lowest level. Its poor performance, intern, contributed to widening deficit in the trade balance as well as balance of trade of the country.

Figure 3



3.2.2 The Import Sector

In order to undertake investment projects, expand production and ensure the availability of consumer goods, Ethiopia has to import those goods that are not domestically produced or whose substitutes are not domestically available. Imports have been above exports in all the years under consideration except in 1972/73 and 1973/74. In

contrast to export, imports continuously increased throughout the whole period. Imports as a proportion of GDP was 1.43 during 1970/71-1973/74, 3.75 during 1974/75-1990/91 and 28.85 during 1991/92- 2009/10 (see table 3.3 on page 101 and appendix II).

According to Shiferaw (1995) as cited by Mehret (2006), between 1945 and 1960 imports remained at low levels and averaged about 67 million birr, reflecting the low level of economic performance. However, as with exports, imports assumed increasing importance starting from the 1960's and began to grow more steadily with economic expansion. The value of merchandise imports increased from about 73 million birr in 1950 to 208 million birr in 1959, rising at annual average of 11.6 percent. This was considerably higher than the rate of increase in exports (9.3 percent). Imports as a proportion of GDP was 4.03 on the average during 1970/71 to 1990/91.

During the Derge regime, the government made a strong effort to implement an import substitution strategy to curtail imports. However, due to misguided policy in the industrial sector, import payment increased from 668.80 million birr in 1974/75 to 1,824.10 million birr in 1990/91 (see appendix II). Unlike exports, imports increased continuously in the Derge regime and are above export for the whole period.

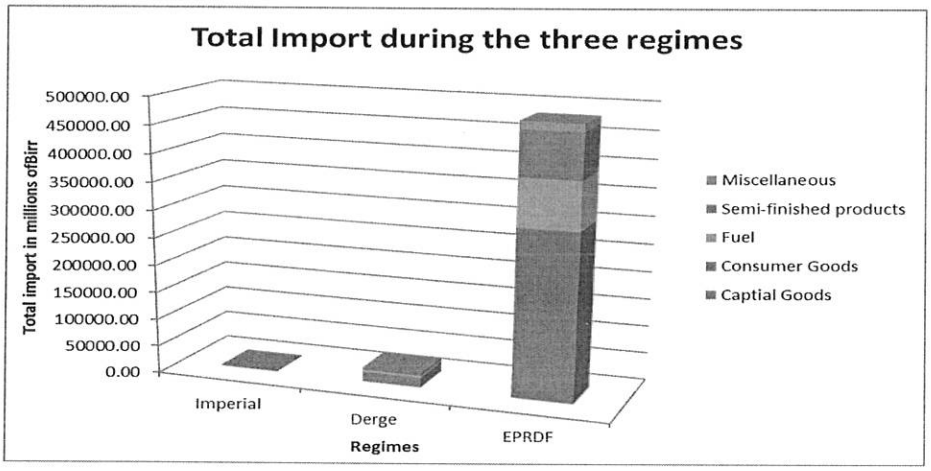
Even after the devaluation of the national currency in 1992, imports showed no sign of decrease. Starting 1,810.90 million birr in 1992/93, import payment reached 45,126.4 million birr in 2009/10 and increases with annual average share of 13,606.29. However, export could not catch-up and cover the import payments. Imports as a proportion of GDP in this period recorded the highest at 15.78 on the average. The main reason for the increase of imports during this period was trade liberalization, ease of foreign exchange control, the rationalization of tariffs and the abolition of quantitative restriction polices adopted by the government.

3.2.2.1 The Structure of Imports

The structure of Ethiopian imports, like exports, has remained rigid as the production and absorptive capacity of the economy failed to show any significant structural changes. By the end use, the Ethiopian imports could be classified in to five major categories: raw materials, semi-finished goods, fuel, capital and consumer goods. Table 3.3 shows the share of total value imports by end use. (See table 3.3 on page 101)

As table 3.3 shows capital goods, consumer goods (consumer durables and non-durables) and fuel take a large share of Ethiopia's imports in value terms. During 1970/71- 2002/03, imports of capital goods accounting 33.22 percent of the total imports was dominant followed by consumer goods (durables and non-durables) which accounts 30.95 percent of the total imports. The other two categories, which are fuel and semi-finished good, account on the average 15.77 and 15.1 percent of total imports respectively. The share of imports of raw materials, however, is insignificant with a share of only 2.75 percent of the total imports. From the total share of consumer goods 28.8 percent the largest share of which is 19 percent to non-durable whereas the durable consumer goods take only 9 percent in general as compared to raw materials and other durable goods it takes a highest share.

Figure 4



3.2.3 Trade Balance

The central theme of this study is to examine the effect of exchange rate changes/devaluation on trade balance of Ethiopia. Economic theory determines a number of key variables that have significant effect on imports, exports and trade balance. To see the effect of changes in exchange rate on trade balance of Ethiopia, it is desirable to examine its effect on exports and imports independently.

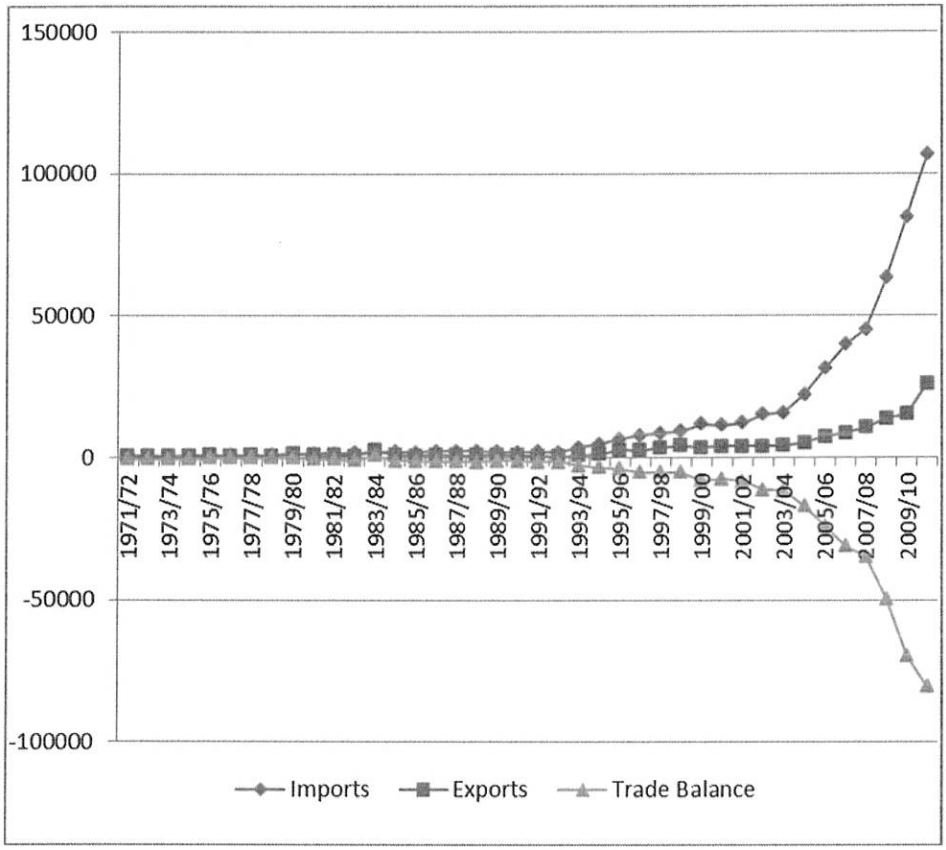
Except the 1972/73 and 1973/74 as stated in the above discussion surplus due to substantial increase in the export of oil seeds and pulses, the trade balance has been in deficit and it is widening from time to time. The deficit widens from 0.07 percent of GDP in 1970/71 to 20.28 percent of GDP in 2009/10. The deficit was 0.02 percent of GDP in the Imperial regime (1970/71-1973/74), 2.01 percent of GDP in the Derge regime (1974/75- 1990/91) and 10.42 percent in the post reform period (1991/92-2009/10). The widening trade deficit is also reflected by the decline of foreign exchange earnings from exports of goods that cover imports. For the Imperial period (1970/71-1973/74), foreign exchange earnings from exports of goods used to cover about 94.13 percent of total imports. For the Derge period (1973/74-1990/91), the corresponding figure decline to 55 percent. During the EPRDF regime (1991/92-2009/10), foreign exchange earnings from exports of goods have further declined to finance only 24 percent of the country's imports. (See figure 3).

Table 3.4: Trade Balance (in millions of Birr)

Period	Imports	Exports	Trade Balance
Imperial regime (1970/71-1973/74)	1804.64	1768.80	-35.85
Derge regime (1974/75-1990/91)	26564.29	14783.74	-11780.55
EPRDF regime (1991/92-2009/10)	494818.58	106852.88	-387965.69
The whole period (1970/71-2009/10)	523187.51	123405.43	-399782.08

Source: National Bank of Ethiopia

Figure 5: Trends of Ethiopian Export value, Import value and Trade Balance



Source: National Bank of Ethiopia

Figure 5 shows the steady growth of both import and export following the 1992 devaluation.

During the period from 1992/93 to 2009/10, both import and export grew. However, the growth of import is higher than the growth of export and the trade deficit has been increasing persistently.

Two reasons could be given to this deteriorating trade balance. First, by comparison, the slow growth of exports and the substantial increase in imports caused by escalating demand for consumer goods and capital goods led to an ever widening trade deficit. Secondly, like any developing country, the merchandise trade is still dependent on export of few primary products and import of raw materials, intermediate goods, fuel, capital and consumer goods. The fluctuation

and the declining trend of price of primary commodities greatly affected export earnings, and the trade balance.

Generally, high susceptibility to external shocks, high dependence on agricultural commodities, high price and low-income elasticity of demand and low supply response characterized the Ethiopian export sector. On the other hand, imports intrinsically are higher price inelastic which are either necessities in production or consumption or very strategic commodity and are invariably required by the country.

3.3 Current Status of Ethiopian Economy (From African Economic Outlook 2011)

Ethiopian Overview

Although growth remained strong in 2010, macroeconomic management had its fair share of problems, namely rising inflation and a sharply depreciating national currency. Monetary policy in 2009 and 2010 focused on fighting inflation. Exchange rate management, despite its negative impact on inflation, was also an important monetary policy in 2010 as it addressed the shortage of foreign exchange.

In 2010, the government managed to contain rising inflation through a combination of monetary instruments, the principal one being contraction of credit and money supply growth. The culprits behind inflation in Ethiopia in the last three years are expansion in the money supply, rising prices of imported goods, a significant markup by traders and producers, and higher inflation expectations. The National Bank of Ethiopia (NBE) sought to keep monetary growth below 20% in 2008/09 and below 17% in 2009/10. The growth in broad money supply has been driven by domestic credit both to private and public enterprises. Growth in net lending to government contracted from 12.8% in 2007/08 to 0% in 2008/09 as well as 2010. A cap on credit placed on private banks in 2010 limited the expansion of credit to the private sector. This monetary policy kept inflation to

about 11% in 2010 but inflation has since risen to over 17% (February 2011).

Another monetary policy development in 2010 relates to exchange rate policy. The exchange rate in Ethiopia is characterized by managed floating with strong government control. The year 2010 witnessed a continuous depreciation of the local currency against major currencies. The strain on the country's foreign exchange reserves was such that they remained below the equivalent of two months of imports in 2010. There has also been a nonstop depreciation of the currency in the parallel (black) market, aggravated by the government's devaluation of nearly 20% in September 2010. The official exchange rate has declined from ETB 13.60 (Ethiopian birr) per USD to ETB 16.50 per USD in 2010. Currency depreciation combined with oligopolistic pricing by most distributors/traders in Ethiopia forced the government to establish price controls in January 2011 on 18 major commodities identified as "basic".

The government's plan for 2010-15 includes a monetary policy target for the next five years of below 10% inflation. Money supply is expected to grow at a level consistent with real GDP growth targets, annual inflation targets, and at the economy's monetization rate. However, containing inflation to a single digit is a huge challenge for monetary policy. The projected high GDP growth and investments required to achieve it will have an impact on foreign exchange demand and could lead to a further depreciation of the national currency.

External Position

Ethiopia experienced a marginal decline of 1.2% in the nominal value of merchandise exports in 2008/09 after hitting annual growth of 25.5% from 2003/04 to 2007/08. Exports as a percentage of GDP were 4.5% in 2008/09 and remained fairly unchanged in 2009/10 (about 4.6% of GDP). The drop in merchandise exports in 2009 was

due mainly to the global economic crisis hurting demand for key traditional export commodities; however, demand bounced back in 2010 for some of Ethiopia's key commodity exports such as coffee. Two of the major exports (coffee and oil seeds) saw a small decline in volume in 2010 compared with their 2009 level. The decline in the volume of coffee exports, however, was compensated by a rise in the international price of coffee in 2010. On the other hand, the international price of oilseeds declined in 2010. Among the other two key exports (khat and pulses), pulses had exhibited a rise both in volume and price while khat has only increased in volume, with minor drop in its price. The combined effect left the level of exports in 2010 fairly unchanged compared to its level in 2009. Foreign exchange earnings in 2010 are helped by the positive change in service balance. This improvement reflects the excellent performance of Ethiopian Airlines. The year also saw a large level of current transfer (about 14.6% of GDP), up from 13.3% in 2009.

Imports remained strong in 2010 at about 27.2% of GDP, compared with 24.0% of GDP in 2009. According to the government's new five-year plan, this figure is projected to grow over five years starting from a projected 30.5% in 2011 to an estimated 35.0% of GDP in the years to follow. According to the National Bank of Ethiopia, imports of consumer goods, raw materials, capital goods and fuel remained important in 2010, as in 2009. Despite the global economic crisis in 2009, Ethiopia's net service exports expanded at a remarkably high rate of 145% in 2008/09, as compared with its 31% contraction in 2007/08. The figure for 2009 was 1.3% and increased a little further in 2010 to 1.6% of GDP. Net service exports are projected to increase to about 2.1% in 2010/11. The government's projection is a little lower, about 1.5% of GDP in 2011 and again in 2012.

Europe remains the largest export market for Ethiopia though its share declined from 47.6% in 2006/07 to 42% in 2007/08 and further to 41.7% in 2009. Ethiopian exports to Asia, by contrast, went from

30.2% in 2007 to 35.2% in 2008 and to 35.6% in 2009. China, Saudi Arabia and United Arab Emirates have become increasingly important partners in 2009 and 2010. Among European importers of Ethiopian goods, Germany, Italy and the Netherlands, in order of importance, were the most important trading partners in 2010. About 65% of Ethiopia's imports came from Asia, followed by Europe at 24.8%.

The growing divergence between imports and exports is a striking feature of Ethiopia's external sector. Growth in exports is not keeping pace with imports. The result is a large trade and balance-of-payment deficit. The current account balance deteriorated from -5.0% of GDP in 2008/09 to -6.6% in 2009/10. This is expected to worsen to about 12% in 2010/11, based on the government's five-year Growth and Transformation Plan.

This five-year plan projects the export of goods to grow at a faster rate in response to measures to promote exports. The plan calls for exports to grow by 36.6% in 2010/11 and average 28.4% annually in the remaining period. Exports of non-factor services are expected to increase by 31.1% in 2010/11 and average 22.9% per year. Imports of goods, on the other hand, will continue to boom. By the end of the plan period, the bill for imports is expected to reach 34.8% of GDP. The government's own projections point to an external trade deficit of 21.1% of GDP in 2009/10 though it may decline to 17.8% by 2014/15. The plan clearly runs the risk of an unsustainable external balance that could lead to macroeconomic instability.

Ethiopia's external debt declined to a historic low in 2006/07. Ethiopia received debt relief to the tune of 21% of GDP in 2006/07 mainly because of the World Bank's 100% cancellation of the country's debt to the International Development Association. Total external debt fell sharply from 85.4% of GDP in 2002/03 to 11.7% in 2006/07 before steadily rising to reach 14.8% in 2008/09 and hitting 19.2% in 2010. This trend is expected to remain intact in 2011 and

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2012. Similarly, the external debt service ratio declined from 7.3% in 2002/03 to 1.2% in 2007/08. However, it has risen to 3% in 2008/09 and remained at the same rate of 3% in 2010. One aspect of Ethiopian debt worth watching is the rapid rise in debt owed to non-traditional partners such as China.

Accession to WTO

Currently international trade is becoming rule based transaction like being a member of WTO. Negotiations, pricing, quantity and quality of the overall transactions governed not only by national laws of member countries but also the international chamber rules and regulations which would be equally applied on and by each member nations. Passing the different cyclical stages for the fulfillment of requirements of the organization (WTO) currently 154 countries have been registered for full membership, so that they could maximize their benefits from the share of global competitiveness. The motivations and practical justifications of member countries experience allows almost all nations in the world are going to satisfy the membership criterion. In an optimistic view the globalization and the common trade laws under WTO will bring acceptable and rational ground for the determination of exchange rate that will be accepted by the trading partners based on mutual benefits. Once this mutual understanding established the exchange rate of currencies between trading countries will reflect the real exchange rate as well as the market price of the currencies that will involve between member countries. By now Ethiopia is completing almost more than half of the pre-conditions to be a full member of the organization, hence it is the right time to evaluate the country's exchange rate policy in particular currency devaluation.

3.4 Exchange Rate Developments in Ethiopia

Derrese Degefa (2001) Ethiopia's trade policy, which became increasingly inconsistent with some of the macroeconomic policies especially during the Degree regime, has long been characterized by

controlled foreign exchange allocation, import quotas, high tariffs, state owned marketing exports, export prohibitions, export subsidies and export taxes (Naude and Abu Girma, 1994) as cited by Deresse; for nearly half a century up until October 1992, the exchange rate of Ethiopian currency against its reference or reserve currency, the US dollar, was determined by government decree.

The currency proclamation of 1945, as noted above, defined the monetary unit of the country as the Ethiopian dollar (hereafter Ethiopian birr as it replaced the Ethiopian dollar in September 1976) with a value of 0.355745 grams of fine gold. The linkage with fine gold, which was in accord with Bretton Woods Agreement of 1994, automatically established the exchange rate between the national currency and other currencies with the same arrangement.

Accordingly the official exchange rate of Ethiopian currency with US dollar was created (with the official exchange rate of 2.48 birr per US dollar) on July 23, 1945. After almost two decades, that is, on 1 January 1964, the Ethiopian birr was slightly devalued to 2.50 birr per US dollar.

Following the collapse of the Bretton woods System in 1971, the birr was revalued to 2.30 birr per US dollar on 21 December 1971. The subsequent 10% devaluation of the US dollar had temporarily brought about undervaluation of the birr. To realign the Ethiopian birr, it was again revalued to 2.07 birr per US dollar in February 1973. From then on, the Ethiopian currency was pegged to the US dollar at the rate of 2.07 birr per dollar until massive devaluation of October 1922. This fixed official exchange rate was left unaltered for two decades despite the floating of the major world currencies including the US dollar. In effect Ethiopian birr became over-valued in terms of the US dollar as well as many other foreign currencies.

In the Imperial era, except for some essential consumer items, imports were free from licensing or other quantitative restrictions and exporters were required to surrender their foreign exchange to commercial banks at the prevailing official exchange rate. The

existence of macroeconomic stability and a relatively liberal trade regime probably reduced misalignment of the actual exchange rate from its equilibrium in this regime (Tameru Kifle, 1994). However, the Degree regime was characterized by persistent fall in real official exchange rate and steadily rising real parallel exchange rates, signifying the over-valuation of the currency. With an over-valued exchange rate, exports have been stagnating while imports have been rising over time since 1975/76.

The Derge regime respond to the falling competitiveness of legal exports and to smuggling by tightening its control regime through stricter rationing of foreign exchange, by prohibiting the domestic trade of many exportable (notably coffee) and by providing export subsidies for loss-making state-owned exporters. In this history of the Degree regime, significant change occurred in the exchange and trade system during 1977.

Realizing the negative effect on an over-valuation of the birr on the country's trade balance and, hence, on balance of payments the Transitional Government of Ethiopia (TGE) devalued the birr seven times with an official exchange rate gradually reaching 6.25 birr per US dollar before the date of unification in the late 1995. The TGE also introduced the auction for foreign exchange market so as to achieve market determined exchange rate. The belief at the center of successive devaluations of official exchange rates and the adoption of the auction system is to attract foreign exchange in the parallel market back to the official line and thereby strengthen official reserves.

From May 1993 up to the unification of the official and the auction exchange rates on 25 July 1995, the exchange rate was partly determined by government decree (applicable to the official rate and partly by quasi-market forces 9applicable to the auction rate) as represented by auctions. Since the date of unification, the exchange rates of the birr against the US dollar and the resultant cross-rates have been determined only through the auction system. From the date

of unification up to the present day, we have a quasi-market determined exchange rate.

As components of the stabilization-cum-liberalization program adopted in 1992, the government of Ethiopia abolished

- Taxes on exports (except coffee) in December 1992, and in August 1993 reduced differences between tariff rates.
- All export subsidies to Ethiopian industries in December 1992 by replacing them with an incentive that allows duty-free importation of raw materials.
- Negative list import of the National Bank of Ethiopia on February 3, 1995.
- Franco valuates imports in July 1996.

The total demand for US dollars in the auction system excludes those demanders of foreign exchange who do not fulfill the requirements set by the national Bank of Ethiopia for participation in a bid. The requirements include: a permanent import license, supplementary documents such as a copy of registered trade balance, the birr equivalent of the foreign exchange, and pro forma invoices indicating the price as well as transport expenses from at least two suppliers. The minimum bid allowed for participation in the auction was US$ 5,000 for the first three years after the adoption of the auction system which was then raised to US$10,000 on 1 December 1995. All these and other restrictions together discourage potential participants in the auction system, and partly simulate demand of foreign exchange in the parallel market.

As of 26 July 1996, the following reforms were made:

a. The 25% auction cover was reduced to 2%,
b. Commercial banks were allowed to bid in the auction system,
c. Foreign exchange auction as conducted every week,
d. Importers who wish to acquire foreign exchange for imports outside the auction market were allowed to obtain from the domestic commercial bank bureaus at freely negotiated rates,

e. Eligible exporters of goods gained the right to retain 30% of their export earnings and use the same in accordance with the condition and guidelines of exports retention scheme.

As of 1 October 1996, however, 50% of the export earnings or remittances has to be surrendered to the National Bank of Ethiopia via local banks at the prevailing marginal exchange rate within five days of the receipt while eligible customers (eligible exporter or recipient of regular foreign exchange remittances) have the right to retain 10% and 40% percent of their export earnings or remittances in foreign currency in retention Account A and retention Account B, respectively.

Upon request of a beneficiary, the 10% of the inward foreign exchange remittance that is deposited in Account A of the beneficiary may be debited with business related current payments, while the 40% of the forex earnings or inward remittances that is deposited in forex retention Account B will have to be offered for sale by the account holder not later than 21 days from the date of entry to commercial banks at negotiated rates, or to the foreign exchange auction market through their bankers.

In order to further liberalize current external transactions and decentralize import and export licensing procedure, the measures taken by the National Bank of Ethiopia and put onto effect as of 31 August 1998 with the establishment of wholesale foreign exchanged auction are:

- The commercial banks are empowered to handle the licensing of foreign exchange for merchandise imports and the issuance of export permit with the exception of that for coffee, which remains with the NBE.
- There is automatic provision of foreign exchange for merchandise imports by commercial banks for an amount not exceeding $ 400, 000 US dollars

- The surrender of foreign exchange proceeds from exports to commercial bank is subject to the following procedures: 10% of export proceeds may be indefinitely retained in the exporter is own foreign currency account in a domestic bank while the remaining 90% may be converted into local currency at any legal exchange deemed favorable by the exporter within a period 28 days.
- With the exception of a US$ 1,200 limit on the purchase of foreign exchange for holiday travel abroad, clients may purchase any amount of foreign exchange at the forex bureaus for educational, medical, business travel and other similar expenses abroad.
- Foreign employees working in Ethiopia may transfer abroad any amount of foreign exchange up to individuals' net salary earnings.
- The weekly retail foreign exchange auction is replaced by the weekly wholesale foreign exchange auction for participants bidding not less than US$500,000.

3.5 Exchange Rate Regime in Ethiopia

For nearly half a century up until October 1992, the exchange rate of Ethiopian currency against its reference or reserve currency, the US dollar, was determined by the government decree. the country's legal tender currency, the then called Ethiopian dollar (hereafter Ethiopian birr as it replaced the Ethiopian dollar in September 1976) was issued and the official exchange rate of this currency with US dollar was created (with the official exchange rate of 2.48 birr per US dollar) on July 23, 1945. After two decades, that is, on January 1, 1964 the Ethiopian birr was slightly devalued to 2, 50 birr per US dollar (Equar Desta, 2001).

Following the collapse of the Britton woods system in 1971, the birr was revalued to 2.30 birr per US dollar on December 21, 1971. The subsequent 10% devaluation of the US dollar, and temporarily

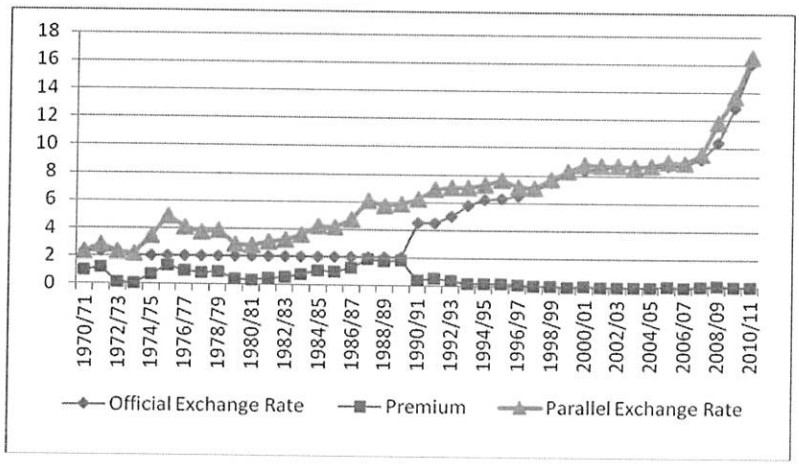
brought about undervaluation of the birr. In order to realign, the Ethiopian birr was again revalued to 2.07 birr per US dollar in February 1973. Since then, the Ethiopian currency has been pegged to the US dollar at the rate of 2.07 birr per US dollar until massive devaluation of October 1992. This fixed official exchange rate was left unaltered for two decades despite the floating of the major world currencies including US dollar. In effect the Birr became over valued in terms of the US dollar as well as many other foreign currencies. One of the disadvantages of fixed exchange rate is that the exchange rate is not periodically adjusted to the fundamentals of the economy. Like many developing countries, Ethiopia's exports are not diversified and they are predominantly agricultural products whose price in the international market is declining against persistently rising prices of imports. The country therefore faces deteriorating term of trade and overvaluation of the domestic currency or under competitiveness of the economy. This implies exports are unnecessarily dearer while imports are very cheap. In other words exports are over taxed and imports are subsidized which in turn discourages domestic production. Compiled with restrictive trade policies this causes for the development of controlled border trade and parallel foreign exchange market. Ultimately, this results in external disequilibrium and balance of payments deficit (Equar Desta, 2001).

In the imperial era, except for some essential consumer items, imports were free from licensing or other quantitative restriction and exporters were required to surrender their foreign exchange to commercial banks at the prevailing office exchange rate. The existence of macro-economic stability and relatively liberal trade regime probably reduced misalignment of the actual exchange rate from its equilibrium in this regime. However, the Derge regime was characterized by persistent fall in real official exchange rate and steadily rising real parallel exchange rate signifying the overvaluation of the currency. Under this overvalued exchange rate exports have been stagnating while imports have been rising over time since 1975/76.

Realizing the negative effect of an overvaluation of birr on the country's trade balance and hence, on balance of payments, transitional government of Ethiopia (TGE) devalued official exchange rate seven times with an official exchange rate gradually reaching 6.25 birr per US dollar in the late 1995(see table 3.5 on page 102). The TGE also introduced a fortnightly auction for foreign exchange in May 1993 in an effort to liberalize the foreign exchange market and, hence, to achieve market determined exchange rate. The belief at the center of successive devaluation of official exchange rate and the adoption of the auction system is to attract foreign exchange in the parallel market back to the official line and there by strengthen official reserves.

From May 1993 up to the unification of the official and auction exchange rates on July 25, 1995, the exchange rate was partly determined by the government decree (applicable to the official rate) and partly by quasi-market force (applicable to the auction rate) as represented by fortnightly auctions. After the date of unification, the exchange rate of birr against US dollar and the resultant cross-rates have been determined only through the auction system. Then the official and auction exchange rates were unified on July 25, 1995. From the date of unification up to the present day, we have a quasi-market determined exchange rate.

Figure 6: Trends in the official exchange rate, parallel exchange rate and premium of Ethiopia

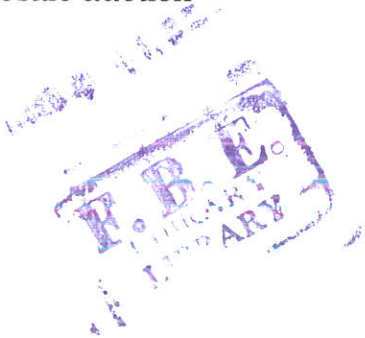


3.5.1 Auction System

Following the devaluation of the birr the government took major steps that allowed the exchange rate to be market determined. In line with this, fortnightly, auction market for foreign exchange was introduced in May 1, 1993. Following these two rates, namely the official exchange rate and marginal rate emerged. The official rate was applicable to imports classified as 'essential' commodities (such as petroleum, pharmaceuticals, fertilizers, as well as official debt servicing). The marginal rate was determined only through the auction system and applied to other imports (other than the above stated imports). Since the inception of the auction system no sporadic foreign exchange supply has been observed and it is plausible to argue that exchange rate remained relatively stable. The national bank of Ethiopia declares in advance the total supply of foreign exchange for each auction and the marginal rate is announced on the day the auction is held. In order to attend the auction, importers are required to have an import license for the commodity they want to import.

In order to avoid multiplicity of rate, the official and marginal rates were unified as of July 25, 1995 because the government bans the privilege or implicit subsidy enjoyed by the so called essential commodities. Hence the official rate was irrelevant. Since then one auction determined official exchange rate system has been applied for all imports. Furthermore, the frequency of auction was also changed from fortnightly to weekly basis, starting August 1996, to accommodate the growing demand for foreign exchange. Thus, there was significant increase in demand for foreign exchange in the auction market.

Since its inception, several important modifications have been made to the operation of the auction; the retail auction (whereby the national bank of Ethiopia sells foreign exchange to final users) was replaced by wholesale auction in September 1998. Like the retail auction, the wholesale foreign exchange auction has been conducted openly in the presence of prospective bidders every Saturday. The wholesale auction



is different from that of the previous one in that the participant are not the final users of the foreign exchange but authorized commercial banks and investors who want to bid for at least half a million U.S dollar. All foreign exchange won from the auction, other than by commercial banks, for which L/C(letter of credit) is not established or transfer is not made, will be cancelled within 60 days from the date the bid is won. The marginal rate serves as an official rate for all transactions and it applies until the next auction date.

3.5.2 Foreign Exchange Bureaus

In an attempt to further liberalize the exchange rate and to move towards a fully realistic rate, the National Bank of Ethiopia (NBE) allowed the establishment of foreign exchange bureaus in 1996. Only authorized commercial banks are allowed to establish foreign exchange bureaus. These banks are authorized to allow importers and exporters, excluding coffee, and provide associated services against submission of the required documents. They can approve imports for any values; but values USD 1 million and above are subjected to open international competitive bidding backed by relevant documents.

Liberalization of external sector of Ethiopia economy has been taking place in progression since the start of structural adjustment program in October 1992. Before the introduction of the reform, there were relatively substantial restrictions on current account transactions; all international transactions were virtually under the control of the National Bank of Ethiopia (NBE). All transfers and payments abroad for exports, imports and invisible transactions required license issued by the NBE. There were quantitative restrictions on foreign exchange for personal travel abroad, business and medical purposes. Furthermore, exporters are required surrendering all foreign exchange earned to the NBE.

3.5.3 The Parallel Foreign Exchange Market

Even though there is no consensus among researchers about the inception of the Ethiopian parallel market exchange rate, some of the opinion that it was non-existent or at its nominal before the Derge gained power. Befekadu Degefe (1994) state that the significance of the illegal parallel market for foreign exchange has growth to the extent that impairing the operation of the official foreign exchange market during the post 1974 and particularly since 1980/81 fiscal years. William Naude and Abu Girma (1994) as cited by Equar Desta (2001) noted that illegal parallel exchange rate system in Ethiopia developed in the 1970s, and expanded considerably during the 1980s. Given this, one can intuitively say that the parallel market for foreign exchange started to expand and flourish during the 17 years of the Derge regime. Like many developing countries, the main factor that were behind the emergency of the parallel exchange market in Ethiopia, among others, were persistent external imbalance and fixed exchange rate policy, which led to overvaluation of the birr since 1970s.

Undoubtedly, export performance of this country was virtually poor and export earnings remained scanty. Therefore, the National Bank of Ethiopia allocated foreign exchange to importers through rationing. These measured worsened the foreign exchange problem and aggravated it extremely. Most of the private importers who could not get access to the official foreign exchange market resorted to the alternate parallel market. On the other hand, those who acquire foreign exchange through private transfer from abroad continuously showed their preference for the parallel market, as official exchange rate was artificially low.

The Ethiopian parallel foreign exchange rate market is a very volatile market, which at times has showed a drastic fluctuation even after the economic reform program of 1992. This high degree of volatility was due to both economic and non-economic factor.

As the activities of the parallel market are often illegal measuring of its size is almost impossible. However, it is believed that the market accommodates significant transaction because contrabands are financed from the black market. Nowadays, the course of supply to the parallel market has showed fluctuation even in some cases have a seasonal behavior. As a matter of fact during holidays the amount of transfer sent from abroad by Ethiopians to their family shows an increased and this to some extent pushes up the supply of foreign exchange in the parallel market.

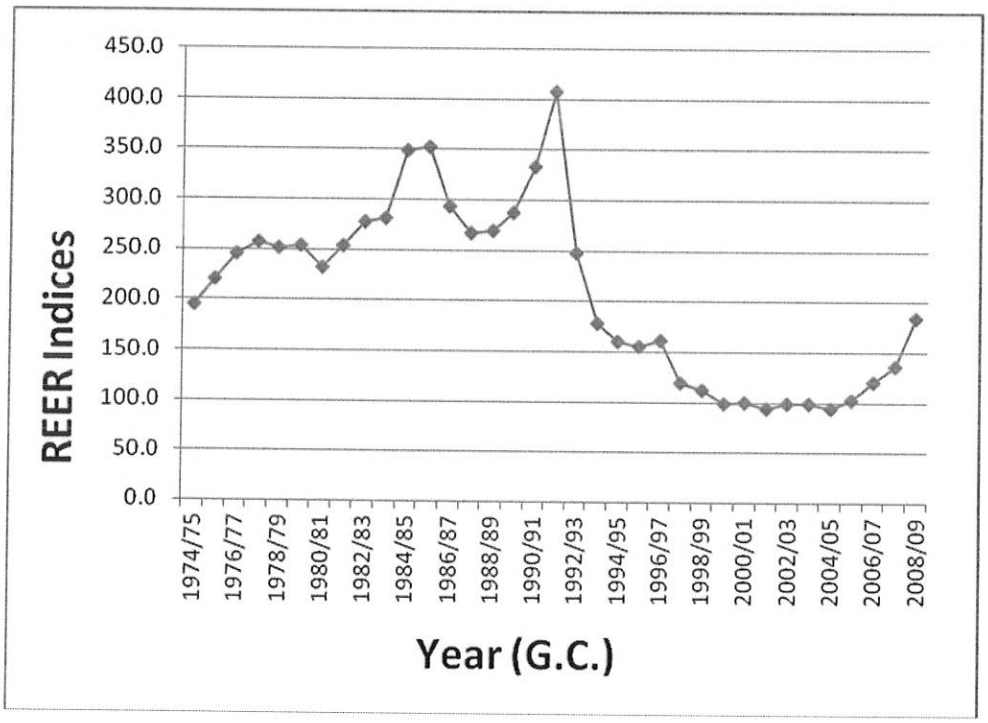
This shows sensitivity of this market to seasonal factors. Recently, the premium for foreign exchange declined and the source of supply of foreign exchange to this market also decreased. Nevertheless, due to different factors, the demand for foreign exchange in this market is still strong. This is due to; first, the amount of foreign currency which is allowed for personal travel abroad is 1200 USD, travelers who wanted an additional foreign currency in access of the allowed amount try to fill the gap from this market. Secondly, there is a need to finance illegal imports (contraband). Thirdly, according to some reliable sources, there are some agencies owned by foreigners, which are engaged in receiving or sending money from or to abroad illegally. To put it briefly, the stated supply and demand side problems of the market mostly explain the observed volatile nature of the exchange rate in the parallel market and it is more or less a floating one (as it is governed by supply and demand of the currency) when compared with the official exchange rate.

3.6 Movements in the Real Effective Exchange Rate

In order to make quantitative assessment of the competitiveness of the Ethiopia's export sector vis-à-vis the rest of the world, it is important to construct the real effective exchange rate index (REERI), which is the measure of the price of the country's goods relative to the price of its trading countries, both expressed in domestic currency.

When the value of REERI falls, either because of a decrease in Exchange rate (E) or a decline in the inflation deferential or both, we speak of a real depreciation of the exchange rate and thus enhanced competitiveness of the country's goods vis-à-vis foreign goods. On the other hand, an increase in REERI represents a real appreciation implying decline competitiveness of the home economy. The following figure shows the trend of annual Real Effective Exchange Rate Indices (REERI) of Ethiopia for the years 1975/76-2009/10. (also see table 3.6 on page 103)

Figure 7: Trends in Real Effective Exchange Rate Indices of Ethiopia



Source: National Bank of Ethiopia

As shown in the above figure, observations of the trend of real effective exchange rate index from 1975/76 to 2009/10 reveals about certain distinctive periods with few exceptions: that high value in some years and low in another but in most cases fluctuating that implies the price volatility in the world trade.

Still exchange rate in Ethiopia is being set by the Central Bank (National Bank of Ethiopia). Currently 17 types foreign currencies are listed with the corresponding conversion rate against local currency BIRR. In the process of quoting the daily exchange rate, there is no confirmation that justifies the determination is purely based on supply and demand analysis. Whatever the case the NBE sets the daily rate and communicates to all Commercial/Developmental Banks operating in the country. This rates also applied in negotiations and borrowing/debt settlement activities by higher ministerial or agencies at national level. The commercial banks by their turn add certain margin and apply on all international transaction demands from their respective customers.

CHAPTER FOUR

MODEL SPECIFICATION, ESTIMATION AND INTERPRETATION OF RESULTS

4.1 Data source

The analysis is made using data for the period 1976/77 up to 2009/10. All the data are obtained from different sources; data for Export, Import, Real GDP of Ethiopia and Real Effective Exchange Rate, the import and export data are obtained from the National Bank of Ethiopia. In the previous section only statistical descriptions are used to explain trends in exchange rates, volume and values of exports and imports and Balance of Trade. In this section, however, econometric models will be used to show the net effect of nominal official exchange rates and other variables on the value of the nation's export and import and thereby on the balance of trade.

4.2 How to measure elasticity: The natural-logarithm model

Consider the following regression model:

$$Yi = Ax_1^{B2} x_2^{B3} \ldots\ldots\ldots\ldots \quad (4.1)$$

Let us express equation (4.1.1) in alternative but equivalent as follow

$$\ln Yi = \ln A + B_2 \ln x_1 + B_3 \ln x_2 \ldots\ldots\ldots\ldots \quad (4.2)$$

Where ln = the natural log, that is, logarithm to the base e now if we let $B_1 = \ln A$

We can rewrite equation (4.2) as

$$\ln Y_i = B_1 + B_2 \ln x_1 + B_3 \ln x_2 \ldots + U_i \ldots (4.3)$$

One attractive feature of the natural logarithmic model, that has made it popular in empirical work is that the slope coefficients (B_i) measures the elasticity of Y_i with respect to X_i that is the percentage change in Y for a given (small) percentage change in X.

Now letting

$Y^*_i = \ln Y_i$ and $X^*_i = \ln x_i$

$$Y^*_i = B_1 + B_2 X^*_i + B_3 X^*_{ij} \ldots\ldots U_i \ldots\ldots\ldots\ldots\ldots\ldots \quad (4.4)$$

In calculus notation we define the elasticity coefficient, E as:

E=dY/dX * X/Y

For the transformed model

$$E = Bi = \frac{\Delta Y}{\Delta X} = \frac{\Delta lnY}{\Delta lnX} = \frac{\frac{\Delta Y}{Y}}{\frac{\Delta X}{X}} = \frac{\Delta Y}{\Delta X} * X/Y \quad \text{..... (4.5)}$$

4.3 Model specification for Export, Import and Trade Balance function

4.3.1 Model specification for exports

For this study, export value is stated as function of Real Gross Domestic Product (RGDP), official exchange rate (OFEX), parallel exchange rate (PAREX), openness (OPEN) and Dummy variable(DD). Hence, it takes the form

X=f(RGDP, OFEX, PAREX, OPEN, DD) .....(4.6)

When X=Export

RGDP = Real gross domestic product

OFEX = official exchange rate

PAREX= Parallel Exchange Rate

OPEN = openness (the ratio of export(X) and import (M) to GDP i.e. X+M/GDP)

DD= Dummy variable of floating exchange rate

Let us transfer the function (4.6) in to natural logarithm model:

$$lnX=a_o+a_1lnRGDP+a_2lnOFEX+a_3lnPAREX+a_4lnOPEN+ a_5DD+ U_{1...} \quad (4.7)$$

$a_1 > 0$, $a_2 > 0$, $a_3 < 0$, $a_4 > 0$, $a_5 < 0$

Theoretically the effect of GDP (income) on the nation's economy mean, values of export is expected to be positive but insignificant. That is, exports of the nation are the import of trade partner or the rest of the world and as such dependent not on the exporting nations level of income but on the level of income of the trade partners or the rest of the world. Official exchange rate (OFEX) has a positive

relationship with export because as official exchange rate increase (devalue) cost of export will decrease and export volume will increase hence international competitiveness increase. There for total value of export increase.

The effect of parallel exchange rate on export is negative because with high parallel exchange rate exports will be diverted to either contrabands or domestic markets. One basic justification behind trade liberalization (openness) is its capacity to bring about significant increase in export earnings. On the other hand policy dummy (devaluation) will have a positive effect on export value by decreasing export price there by increasing competitiveness.

4.3.2 Model specification for import

In this study, import value is stated as function of gross domestic product (RGDP), official exchange rate (OFEX), parallel exchange rate (PAREX), openness (OPEN) and dummy variable (DD) hence, it takes the form.

M=f(RGDP,OFEX,PAREX,OPEN,DD)----------(4.8)

M= import

RGDP = Real gross domestic product

OFEX = Official exchange rate

PAREX = Parallel exchange rate

OPEN = Openness

DD = Dummy variable

Let us transfer the function (4.8) into a natural logarithm model:

$$lnM=\beta_o+\beta_1 lnRGDP+\beta_2 lnOFEX+\beta_3 lnPAREX+\beta_4 lnOPEN+\beta_5 DD+U_2 \ldots\ldots \quad (4.9)$$

$\beta_1>0$, $\beta 2<0$, $\beta 3>0$, $\beta 4>0$, $\beta 5<0$

Theories and empirical evidences have long established a positive correlation between GDP and import i.e. the income elasticity of demand for imports is positive. As the GDP increases the volume of imports tends to increases basically for two reasons. The first is the well-established fact that as income (GDP) increase, consumption also increases and since the consumption bundle includes imported

commodities, the value also increases. The second factor driving imports are the demand for capital goods. An increase in GDP sends positive signals to investor who would purchase more investment goods from abroad. The combination of these two factors increases imports with an increase in RGDP.

On the other hand official exchange rate has a negative relationship with import because as official exchange rate increases (devaluation) import price will be higher relative to domestically produced items hence devaluation discourage imports, therefore volume of imports decreases. An increase in a parallel exchange rate will also augment import because high of this rate means cheap official exchange rates, thus, increases imports demand. Another phenomenon that explains the growth in imports is the policy domain of liberalization (openness). Because of the reduction of imports barriers including the cut in tariff rates (import tax) import will increase. The floating exchange rate dummy variable has a negative effect on import because of increase in domestic price of importable goods.

4.3.3 Model specification for trade balance

The model specified here takes trade balance as a function of Real Gross Domestic Product (RGDP). Real Effective Exchange Rate (REER) and policy dummy (DD). To show the effect of exchange rate regimes on trade balance. Thus;

TB=f (RGDP, REER, PREM, OPEN, DD)..... (4.10)

Where TB= trade balance

RGDP= real gross domestic products

REER= real effect exchange rate

PREM= Premium

OPEN= Openness

DD= policy dummy { 0- Fixed exchange rate regime
1- Managed floating exchange rate regime

Using a natural logarithm model we can rewrite the above equation (4.10) as flows:

$lnTB=C_o+C_1lnRGDP+C_2lnREER+C_3lnPREM+ C_4OPEN+ C_5DD+ U_3$--------(4.11)

C_1=?, $C_2>0$, $C_3<0$,$C_{4=?}$ $C_5>0$

Real GDP is the value of goods and services measured using a constant set of price. That is, real GDP shows what would have happened to expenditure on output if quantities had changed but price had not. Because a society's ability to provide economic satisfaction for its members ultimately depends in the quantity of goods and services produced. It states that the trade balance is affected by the rise of domestic income. Increases in home country income would lower the trade balance due to increases demand for imports. However, it was revealed in recent years that adverse trade balance response to the rise of domestic income is not so certain prior, as arise of domestic incomes can increase both the demand for country's export and imports. Moreover, if the rise of domestic income items from an increases in the production of import-substitute goods, imports may decline. That is why the sign of coefficient of real GDP is ambiguous, i.e. either positive or negative.

The data on real effective exchange rate (REER) obtained from National Bank of Ethiopia is based on the IMF definition of nominal exchange rate (USD per Birr) in which a decline in nominal exchange rate (E) shows currently depreciation. When the value of REER falls, either because of decrease in E or a decline in the inflation differential or both, we speak of a real depreciation of the exchange rate and thus enhanced competitiveness of the country's goods vis-à-vis foreign goods. On the other hand, an increase in REER represents a real appreciation implying declining competitiveness of the home economy. The impact of exchange rate changes on trade balance is ambiguous, that is, it could be positive or negative. If there is a real depreciation or devaluation of the domestic currency, that is REER decreases, then the increased competitiveness in prices for the domestic country should result in it exporting more and importing less (the "volume

effect"). However, the lower REER also increases the value of each unit of import (the "import value effect"), which would tend to diminish the trade balance. It is argued that in the short run import value effects prevail, whereas the volume effects dominate in the long run.

In regression analysis, a dummy variable (DD) is known as indicator or bound variable is that takes the value 0 or 1 to indicate the absence or presence of some categorical effect that may be expected to shift the outcome. In this paper dummy variable (DD) is an exchange rate policy dummy change with value unity after 1992/93 when the exchange rates become managed floating exchange rate and a zero otherwise (fixed exchange rate). D will affect trade balance negatively before devaluation and positively after devaluation. Because devaluation increase countries competitiveness in international market by decreasing export price. And decrease import, by increasing price of imported goods relative to price of domestically produced goods.

4.4 Estimation of Models

4.4.1The Unit Root test for Stationary

A stochastic process is said to be stationary if mean and variance are constant over time and the values of the covariance between two time periods depends on the distance or lag between the time periods not on the actual time at which the covariance is computed.

$E(y_t)=U$

$Var(Yt)=E(Y_t-U^2)= \sigma^2$

$E(Y_t-U)(Y_tk-u)=Yk$

Where Yk is the covariance between the values Y_t and Y_{t+k}, U is mean and σ^2 is the variance. If Y_t is to be stationery the mean, variance and auto covariance of Y_{t+n} must be the same as that of Y_t.

Non stationary of time series data has often been regarded as a problem in empirical analysis. Working with non-stationary variable leads to spurious (false) regression result with which further inference is meaningless (Gujarati, 1995). Thus, in order to estimate a more specific relationship between dependent variables and there

determinants, a test that help to check stationary must be carried. There are several methods of testing stationary of time series data and among these methods, we will employ Augmented Dickey-Fuller (ADF) test.

Table 4.1: unit root test

Table 4.1a Unit root test for variables at level

Variables at level	Augmented Dickey fuller statistics(ADF) without trend	Critical value at 5%	Augmented Dickey Fuller statistics (ADF) with trend	Critical value at 5%
LNX	-0.315800	-2.9499	-2.061717	-3.5468
LNM	1.557187		-0.550889	
LNTB	6.54838*		6.702560*	
LNOFEX	0.062127		-2.099761	
LNRGDP	1.766762		-0.720874	
LNPAREX	0.565733		-2.993255	
LNREER	-0.999219		-1.454731	
LNOPEN	0.471881		-1.484864	
LNPREM	-1.144391		0.411812	

Note: * stationary at 1% critical value

Table 4.1b unit root test at first difference

Variables at first difference	Augmented Dickey fuller statistics(ADF) without trend	Critical value at 5%	Augmented Dickey Fuller statistics (ADF) with trend	Critical value at 5%
DLNX	-7.075731*	-2.9527	-7.194834*	-3.5514
DLNM	-5.610741 *		-6.108296*	
DLNTB	6.251527*		6.027655*	
DLNOFEX	-5.587567*		-5.585310*	
DLNGDP	-4.866274*		-5.401816*	
DLNPAREX	-4.715354*		-4.797102*	
DLNREER	-4.327227*		-4.266507*	
DLNOPEN	-6.219046*		-6.379825*	
DLNPREM	-2.974581**		-3.200236***	

Note: *- * stationary at 1% critical value*

***stationary at 5% critical value*

****stationary at 10% critical value*

As shown in the above table, except trade balance all the variables are not stationary at level I(0) with and without trend. To get stationary variables we have taken the first difference of all variables and test for stationary. According to Gujarati (1995), if a time series is differentiated at once and the differenced series is stationary, we say that the original series is integrated of order I and denoted by I(1). In general, if a time series has to be differenced d times and if it becomes stationary, then it is integrative of d or I(d). Hence, all variables in the above table 4.1b are stationary at 1st difference

4.4.2 Co-integration test

Once the order of integration of the non-stationary variables has been determined and of variables is found to be non-stationary the next step is Co-integration. The test for co-integration is to check for the existence of co-integrating relationships between non stationary explanatory variables, are co-integrated. Even though the individual series are non-stationary their combination of series data may be stationary if there is co- integration. In other words, we want to test for the stationary of the liner combinations of these variables.

There are a number of methods for testing co-integration regression; the Engle Granger two step residual based procedures, and Johansen procedure. In this paper, the co-integration test carried out is Engle Granger two step procedures. This model first estimates the relationship between the variables by ordinary least square (OLS) and test for stationary of the error term. If the error term is found to be stationary then the variables are co-integrated. In economic terms, variables will be co-integrated if they have a long term equilibrium relationship between them (Maddala, 1992).

Results of unit root test for residual series at level

Table 4.2a: Import model

		T statistics	Prob.
ADF statistics	-5.131891		0.0002
Test critical value	1%	-3.6353	
	5%	-2.9499	
	10%	-2.6133	

Table 4.2b: Export model

		T statistics	Prob.
ADF statistics	-4.317166		0.0015
Test critical value	1%	-3.6353	
	5%	-2.9499	
	10%	-2.6133	

Table 4.2c: Trade balance model

		T statistics	Prob.
ADF statistics	-4.201740		0.0023
Test critical value	1%	-3.6353	
	5%	-2.9499	
	10%	-2.6133	

As it is stated above for co- integration to exist the residual has to be integrated of order Zero (stationery at I (0)) or at level. Accordingly the tables display that the residual for models are found to be stationary at level.

Results and Interpretation of Regression results: Long run OLS estimation results

Table 4.3a: Export function

Dependent Variable: LNX				
Method: Least Squares				
Sample: 1976 2010				
Included observations: 35				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
LNRGDP	0.088113	0.388025	0.227081	0.8220
LNOPEN	1.103094	0.198018	5.570663	0.0000
LNPAREX	-0.393448	0.250004	-1.573770	0.1264
LNOFEX	0.886298	0.513766	1.725101	0.0952
DD	-1.019310	0.438759	-2.323166	0.0274
C	21.47040	9.685628	2.216728	0.0346
R-squared	0.968288	Mean dependent var		21.39706
Adjusted R-squared	0.962820	S.D. dependent var		1.150233
S.E. of regression	0.221788	Akaike info criterion		-0.019387
Sum squared resid	1.426504	Schwarz criterion		0.247244
Log likelihood	6.339272	F-statistic		177.0964
Durbin-Watson stat	1.411185	Prob(F-statistic)		0.000000

..... **(4.12)**

EXPLANATION

From the above table, we can conclude that two variables RGDP and PSREX have no significant contribution (effect). The rest of the variables are significant. The coefficient of RGDP (0.088) tells us even though the result is consistent with the prior expectation, it is not statistically significant, and 0.088 coefficients imply that, one present increase/decrease in RGDP leads to 0.08 percent increase/decrease in the export value. This is due to the fact that economic growth (measured by RGDP) is one of the sources of export. On the other hand highly contribution comes from openness. Positive coefficient of 1.1030 implies that, if openness is increased/decreased by one percent export will increase/decrease by 1.1 percent. From this result we can see the existence of multiplier effect of openness on export. Parallel exchange rate which is one of the problems of economic progress has negative and insignificant relationship with export. It has

a coefficient of -0.3934. This implies that 1 percent change leads to 0.39 percent change to export level in the opposite direction. Official exchange rate which is one of the policy measures to boost export performance has positive and significant contribution (0.88 coefficients) at 10 percent critical value. Fey policy dummy have negative relationship with export. The other thing expected from the model is the adjusted R-squared, the coefficient measures how much the dependent variable is explained by the independent variables. Accordingly, the coefficient 0.9628 implies that 96.28 percent of change in export is captured by the model and hence it is a good explanation.

Table 4.3b Import function

Dependent Variable: LNM
Method: Least Squares
Sample: 1976 2010
Included observations: 35

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNRGDP	1.279407	0.224217	5.706098	0.0000
LNOPEN	0.974693	0.114424	8.518293	0.0000
LNPAREX	0.230375	0.144463	1.594696	0.1216
LNOFEX	-0.351918	0.296876	-1.185402	0.2455
DD	0.399624	0.253534	1.576215	0.1258
C	-7.451552	5.596774	-1.331401	0.1934
R-squared	0.993400	Mean dependent var		22.39003
Adjusted R-squared	0.992263	S.D. dependent var		1.456964
S.E. of regression	0.128159	Akaike info criterion		-1.116293
Sum squared resid	0.476314	Schwarz criterion		-0.849662
Log likelihood	25.53512	F-statistic		873.0439
Durbin-Watson stat	1.719729	Prob(F-statistic)		0.000000

..... **(4.13)**

EXPLANATION

Results shown in the above table can be explained as, the increase/decrease of RGDP is positive and significant. A1percent change in RGDP results 1.27 percent increase in import with same direction. Still openness has same effect on import as that of Real GDP. A change in Openness by 1 percent will have 0.97 percentage

change in import. Whereas a decrease/increase in parallel exchange rate and policy dummy are not significant to affect import. The effect of official exchange rate also insignificant, the negative coefficient (-0.35) implies that a 1 percent increase/decrease in official exchange rate will have a 0.35 percent decrease/increase in an import value. The adjusted R^2 with the coefficient of determination 0.9922 implies that 99.22 percent the variation in import is explained by the regresor's (explanatory variable).

Table 4.3c: Trade Balance function

Dependent Variable: LNTB				
Method: Least Squares				
Sample: 1976 2010				
Included observations: 35				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
LNRGDP	1.482626	3.788281	0.391372	0.6984
LNOPEN	-3.722801	1.773568	-2.099046	0.0446
LNPREM	-2.978198	0.457100	-6.515420	0.0000
LNREER	4.377000	2.156332	2.029836	0.0516
DD	-1.689634	1.374487	-1.229283	0.2288
C	-46.32240	95.77193	-0.483674	0.6322
R-squared	0.740443	Mean dependent var		24.58773
Adjusted R-squared	0.695692	S.D. dependent var		4.282602
S.E. of regression	2.362459	Akaike info criterion		4.712088
Sum squared resid	161.8551	Schwarz criterion		4.978719
Log likelihood	-76.46154	F-statistic		16.54580
Durbin-Watson stat	1.539350	Prob(F-statistic)		0.000000

..... **(4.14)**

EXPLANATION

In the long run analysis the trade balance would be significantly affected with the change of real GDP and real effective exchange rate. Estimated results explained in the above table justifies that the coefficients 1.482626 of RGDP indicates that a birr 1 increase in RGDP results a 1birr and 48 cents increase in trade balance. At the same time the coefficient 4.377 000 of REER indicates that a unit change/increase in REER affects the trade balance with 4.377 same direction. On the other hand the result of openness and policy

variable dummy are not in conformity with economic theory. But expected assumption to this contradictory result is as stated in the previous explanations though the long run regression analysis for export and imports the positive 1.10 and 0.97 results respectively of openness, shows negative result in the analysis of TB. But the magnitude or the volume of export and import would determine the TB. Therefore, the ever increasing import volume even after the devaluation exceeds the increase in volume of imports and the result of trade balance would be negative.

4.4.3 Error Correcting Mechanism

The Error Correction Mechanism (ECM) first used by Sagan and later popularized by Engle and granger corrects for disequilibrium. The ECM indicates that short run dynamics of the OLS estimating results and its adjustment towards the long run equilibrium. Error correction model (ECM) removes non- Stationary from individual series in order to make the conventional classical regression techniques applicable and correct the disequilibria error created in short term. That means, if it is assorted that the variables are co-integrated, the error term of this relationships will be used to long run as well as short run dynamics of the models, i.e. the most efficient estimation. This enables us to analyze the response of dependent variable to the explanatory variables in a dynamic setting (Greene, 1997). Regressing the first difference of the dependent variable with the first differences of the independent variables using OLS shows the short run dynamics of the model but we use one period lagged error term to tie the short run behavior of the dependent variable to its long run value. The OLS estimation of the first difference natural logarithm export function can be set and interpreted as follows:

Table 4.4a

Dependent Variable: DLNX				
Method: Least Squares				
Sample (adjusted): 1980 2010				
Included observations: 31 after adjustments				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
DLNRGDP	1.101726	0.454016	2.426622	0.0228
DLNOPEN	1.572191	0.150744	10.42955	0.0000
DLNPAREX_2	0.706270	0.315405	2.239250	0.0343
DLNPAREX_3	-0.750118	0.296964	-2.525959	0.0182
ECMX_1	-0.478267	0.159603	-2.996605	0.0061
C	-0.109096	0.036070	-3.024576	0.0057
R-squared	0.908456	Mean dependent var		0.095837
Adjusted R-squared	0.890147	S.D. dependent var		0.467162
S.E. of regression	0.154836	Akaike info criterion		-0.720912
Sum squared resid	0.599356	Schwarz criterion		-0.443366
Log likelihood	17.17414	Hannan-Quinn criter.		-0.630439
F-statistic	49.61858	Durbin-Watson stat		1.523842
Prob(F-statistic)	0.000000			

The interpretation of the equation is as follows: If all explanatory variable are fixed at zero, the average or mean value of export (perhaps reflecting the influence of all the omitted variables) is estimated at approximately -0.109096. But, note that, in most cases the intercept term has no economic meaning. The partial regression coefficient of RGDP (1.1017) means that, holding all other variables constant, as RGDP increases by 1 birr, the volume of export increases by about 1birr and 10 cents. In other words, the income elasticity of demand for export is 1.10. On the other hand the responsiveness of export for a unit change in openness (export elasticity) is estimated as 1.5721. This empirical result is in full conformity with theories which suggests openness to augment export and the result indicates a positive correlation between export and openness of the country.

Coefficient of the adjusted R^2 0.89 shows that explanatory variables could explain about 89 percent of the variation in the value of export in Ethiopia over the period 1970/71-2009/10.

The lagged error correction factor (ECM_{t-1}) included in the model to capture the long run dynamics between co-integrated series is

correctly signed. That is negative but little bit slow (47%) to adjust itself within a short period of time. The coefficient indicates that the speed of adjustment of 47% from actual growth in previous year to equilibrium rate of economic growth. In other words, the value -0.478267 implies only about 47% of discrepancy between the actual and long run value of growth rate is corrected each year.

Assuming that model (4.9) satisfy the assumption of the classical linear regression model, we obtained the following regression by the OLS method for import function.

Table 4.4b

Dependent Variable: DLNM				
Method: Least Squares				
Sample (adjusted): 1980 2010				
Included observations: 31 after adjustments				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
DLNRGDP	1.131129	0.229204	4.935040	0.0000
DLNOPEN	0.767744	0.074346	10.32661	0.0000
DLNPAREX_2	-0.308220	0.150470	-2.048384	0.0516
DLNPAREX_3	0.615493	0.147207	4.181152	0.0003
DD_3	-0.058808	0.031581	-1.862120	0.0749
ECMM_1	-0.943681	0.137913	-6.842590	0.0000
C	0.076938	0.020997	3.664253	0.0012
R-squared	0.882722	Mean dependent var		0.152372
Adjusted R-squared	0.853402	S.D. dependent var		0.194226
S.E. of regression	0.074365	Akaike info criterion		-2.163974
Sum squared resid	0.132725	Schwarz criterion		-1.840171
Log likelihood	40.54160	Hannan-Quinn criter.		-2.058422
F-statistic	30.10696	Durbin-Watson stat		1.325254
Prob(F-statistic)	0.000000			

The interpretation of the import function is as follows: If all explanatory variables are fixed at zero value, the average or mean value of import is estimated about 0.076938 birr. But, as usual the intercept term has no economic meaning. From the equation above we

see that in Ethiopia's external sector for the period 1970/71-2009/10, in the short run the responsiveness of import for a unit change in both the official/nominal as well as the real exchange rate is not visible. Because these variables have been dropped in the regression where not being strong to affect the dependent variable,(import). However, the partial regression coefficient 1.1311of RGDP means that holding all other variables constant an increase in RGDP of, say, a birr is accompanied by 1 birr and 13 cents increase in a mean value of import, in other words, the income elasticity of import(marginal propensity to import) is 1.1311. On the other hand, over the period of study, the responsiveness of import for unit changes in parallel exchange rate is two different results have been generated, that is in the 2nd lag it is -0.30 and in the 3rd lag it is positive 0.62 which means that the official exchange rate higher and lower with the captioned periods respectively. Similarly holding all other variables constant, as a result of a unit change in openness increases the mean value of import at the rate of about 0.7677.

For a purely statistical view point, the estimated regression line fits the data quit well. The adjusted R^2 value of 0.853402 means that about 85.3% of the variation in the import is explained by the explanatory variables.

The lagged error correction factor (ECM_{t-1}) included in the model to capture the long run dynamics between co-integrated series is correctly signed. That is negative and statistically significant. The coefficient indicated that the speed of adjustment of 94% of the disturbance value will be adjusted. In other words, the value -0.943681 implies about 94% of discrepancy between the actual and long run value of growth rate is corrected each year.

Regression analysis and results for trade balance

Table 4.4c

Dependent Variable: DLNTB				
Method: Least Squares				
Sample (adjusted): 1979 2010				
Included observations: 32 after adjustments				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
DLNRGDP	10.45611	6.045145	1.729671	0.0971
DLNOPEN	-4.301509	1.877227	-2.291417	0.0314
DLNPREM	-2.873040	0.408390	-7.035037	0.0000
DLNREER	11.85822	3.171670	3.738795	0.0011
DLNREER_1	-9.116303	2.812310	-3.241572	0.0036
DD	-2.945826	1.584597	-1.859038	0.0759
DD_2	9.577858	3.489145	2.745044	0.0115
DD_3	-7.291070	2.913005	-2.502938	0.0199
ECMTB_1	-0.789645	0.200334	-3.941637	0.0007
R-squared	0.842175	Mean dependent var		-0.794131
Adjusted R-squared	0.787280	S.D. dependent var		4.327419
S.E. of regression	1.995876	Akaike info criterion		4.452301
Sum squared resid	91.62096	Schwarz criterion		4.864539
Log likelihood	-62.23682	Hannan-Quinn criter.		4.588947
Durbin-Watson stat	2.036054			

The interpretation of the trade balance equation is as follows. The response of trade balance with the change of RGDP is positive and statistically significant i.e. the coefficient of 10.45611 of RGDP implies that a one unit change/increase in RGDP results a 10.45 increase in trade balance. With the same fashion a unitary change/increase in real effective exchange rate, (REER) also results significant effect on trade balance. That means a coefficient of 11.85822 in REER implies that a unit change increase/decrease in REER will affect increase/decrease trade balance by 11.85 with the same direction. These two results that is the positive and significant result of RGDP and REER are in conformity of the theoretical assumptions. Whereas the negative coefficients of openness and lagged policy dummy contradicts the theoretical background which justifies openness and policy variables like devaluation improves the trade balance through

liberalization external sector that allows uncontrolled movements of trade and in particular encourage volume of exports.

The adjusted R^2 of 0.787280 shows that 78 percent of the variation in the value of TB is explained by the explanatory variables. The lagged error correction factor (ECM_{t-1}) included in the model to capture the long run dynamics between co-integrated series is correctly signed. That is negative and statistically significant. The coefficient indicated that the speed of adjustment of 79% from actual growth in previous year to equilibrium rate of economic growth. In other words, the value -0.787280 implies about 79% of the shock adjusted compared to the previous period.

4.5 Test of the Marshal-Lerner condition

There is an important and less complicated condition, whose satisfaction guarantees, the devaluation or depreciation improves the balance of trade, that is, reduces the deficit. Marshall-Lerner condition: when the sum of the two elasticity (export and import), in absolute terms, is greater than unity, devaluation reduces a balance of trade deficit. Accordingly, we can test the fulfillment of the Marshall-Lerner condition to Ethiopia for the period 1970/71-2009/10.

From equation (4.12) we can see that, the responsiveness of export for a unit change in official exchange rate (i.e. export elasticity) is estimated as 0.88. From equation (4.13), we see that in Ethiopia for the period 1970/71-2009/10, the responsiveness of import for a unit change in official exchange rate, where -0.35. In other words the demand elasticity of import is -0.35. Hence, over the period of study, the sum of the two demand elasticity's, in absolute terms:

η_x=0.88, η_m=-0.35

$/\eta_x/+/\eta_m/= /0.88/+/-0.35/ = 1.23$

The result 1.23 is greater than unity; devaluation would result in improving trade balance (i.e. it would decrease the size of deficit) in the long run.

CHAPTER 5

CONCLUSION AND POLICY RECOMMENDATION

5.1 Conclusions

Bolstering international competitiveness is indispensable for attaining sustainable economic growth in general and growth rate of export and moderating a growth of import of goods and services in particular. The objective could be achieved mainly through maintaining appropriate exchange rate.

In order to be competitive in international market among other strategies, the Ethiopian government has devalued the birr since 1992. The purpose was to bring real depreciation of exchange rate through devaluation that in turn results in high degree of international competitiveness. However, empirical data on trade balance has indicated that the balance is still deteriorating over time. There are opposing arguments on the impact of devaluation on trade balance. Some are optimists while others are pessimists on its contribution to the trade balance improvement. The reason given by the pessimists is that devaluation doesn't bring the intended outcome due to supply inelasticity of Ethiopian export, which means that the Ethiopian exports do not sufficiently increase following devaluation to outweigh the increased imports. This may have something to do with long gestation period of the Ethiopian agricultural exports and the inelasticity of demand for imports. This may also be because of Ethiopian imports are strategic goods, which are critical for growth, and the strong preference domestic consumers have for foreign goods than domestically produced goods. Consumers' preferences for foreign goods are initiated from the perception of poor quality and supply of domestic products. The poor performance of domestic production and supply is the result of backward production system and low level of industrialization.

A devaluation or depreciation should work in the opposite direction, improving the trade balance thanks to soaring exports and falling imports.

If, however, imports have elasticity to price less than 1, their values in local currency will grow instead of failing. Moreover, if the state, the citizens and/or the enterprises have a debt denominated in a foreign currency, their principal and the interests to be paid soar because of the devaluation. They usually squeeze other expenditures and launch a recessionary impulse throughout the economy.

It is often argued that supply responses to higher prices in Africa might not yield as high results as can be expected in developed economies, where there is more room for flexibility and adaptability. This study also indicates that export elasticity's, over the period of study, for Ethiopia is 0.88. The effect of devaluation on agriculture export of developing countries is small in the short run. For the major export item, coffee, the impact of devaluation on its supply is not significant in the short run to the medium run because of its gestation period which, at minimum, extend over three years. Even in the case of annual crops, say, cereals, capacity constraints are limiting factors because of land shortage or rudimentary technology. Financial constraints also have significant effect on supply responses because farmers may not afford to use chemical fertilizers and modern machineries.

The empirical study for Ethiopia indicate inelastic demand for import, that is import continued to grow after devaluation and in majority cases the growth rate exceeds the pre- devaluation growth rate. This is due to strong demand for imported necessities for which there is no close substitutes in the domestic market even for goods with substitutes; consumer may doubt the quality of domestic products and sometimes prices of imported similar goods is less than that of domestically produced one.

The results of the study indicate, for the period covering 1970/71-2009/10, there was a negative correlation between premium and the

mean value of export because high premium diverts exports to contrabands or domestic market. For the period under study there was also a strong positive relation between premium and mean value of import. Hence, the total effect of high premium on the balance of trade is negative.

From export function we see that in Ethiopia, for the period 1970/71-2009/10, the responsiveness of export for a unit change in openness was 0.7731 which is statistically significant. However, in contrary to what the theory suggests, the study indicates a positive correlation between openness and value of import. The reduction of import barriers, including the removal of quotas and the cut in tariff rates are the main phenomenon that explains the growth in import. Hence the policy domain of liberalization can bring about a significant increase in both export earnings and import spending. On the other hand the Ethiopia's domestic spending is much higher than output/income if that not the case devaluation is more likely to improve the trade balance.

In general regression results in some essential variables come to contradict the theory. These contradictory results are partly because the aggregated data is the one with fixed exchange rate regime (i.e. 1970/71-1990/91) and with floating exchange rate regime (i.e. 1990/91-2009/10). On the other hand data exhaustiveness and accuracy is a problem of most study which end up in interpretation of results/outcomes, deviated the basic economic assumptions, analysis and does not follow the standard economic theories and principles.

On the other hand openness increased both the import and that of export, hence since export is supply inelastic the increase in volume of export is by far dominated by the increase in volume of imports. As a result the net effect of the difference between export and imports which is the trade balance would be negative. With the same token The effect of REER since the import is demand/price inelastic whatever the exchange rate increased no reduction in the volume of import rather aggravated by inputs demand) by firms that produces

exportable goods. However the policy dummy (DD) the diversification of export items and the volume of export indicates that managed floating exchange rate regime is important to improve external sector of the Ethiopian economy than fixed exchange rate regime.

5.2 Recommendations

So far it has been shown that the devaluation of birr was not strong enough tool that policy makers of the country has to rely up to bolster the external sector of the country. Based on the findings of the study, the following recommendations are given:

Ethiopia has an export structure highly dependent on few primary exports and mainly on coffee. Due to this, the country experience wind fall gains and losses during coffee price booms and declines respectively. Therefore, strong action must be taken to diversified export products. Continuous and regular follow-up must be made to encourage and facilitate to investors on the area. Attempts should be made in promoting diversifications in export products so that reduce the impact of price fluctuations on few primary products.

The structure of Ethiopian export has to shift from agricultural products to, at least, semi-processed agricultural products which can have relatively a higher value.

Data under review indicates that the effect of devaluation on primary export of the nation is insignificant. This was mainly attributed to long gestation period of principal crops like coffee and because of the traditional technologies and financial constraints. The government, therefore, should invest on research and development and should expand rural credit so that the value addition on exportable goods can be achieved and the accessibility of financial resources to the demanding target groups will be ascertained.

Reliability and reputation of foreign product goods have contributed for the less responsive imports to exchange rate and price changes. Therefore, by maintaining and by making consistently applicable, the current policies the government should promote import substitution of

goods increasing the capabilities of labor and capacity of inputs that creates production efficiency and quality/reliability attributes to import substituting goods. At the same time through value creation program encouragement and advertisement intended to target groups to use own products might be other mechanisms that brings acceptance of locally produced goods.

Generally, Ethiopia imports essential commodities such as raw materials, semi-finished goods, fuel, capital and consumer goods, which are crucial for production as well as consumption purposes. These goods have to be imported at world price since they are not sufficiently available domestically. In other word, they are price inelastic. This shows that imports cannot easily substitute while the dominant share of agricultural primary commodities that are sensitive to whether condition and price shocks basically characterizes exports. Therefore, to minimize the adverse effect of external shock and to be competitive, the structure of the external trade, which relies on few primary commodities, has to be changed and the government of Ethiopia has to pursue to diversify export commodities from agriculture to other products both vertically and horizontally. By increasing the number of export sectors, horizontal export diversification can reduce the dependence of Ethiopia on limited number of primary commodities that are subject to extreme price and volume fluctuations. Vertical diversification out of primary into manufactured exports is also useful for Ethiopia if there is a general trend toward declining terms of trade for primary products. Last but not list raising domestic income relative to domestic spending (absorption) will improve the trade balance. So in this respect if economic policy measures designed and focused towards this direction devaluation will be more likely to succeed.

REFERENCES

Albert Makochokanwa (2007): "**Zimbabwe's Black Market for Foreign Exchange**", Department of Economics, University of Pretoria, South Africa

Andres Velasco (2000), "**Exchange-rate Policies for Developing Countries: What Have We Learned? What Do We Still Not Know?**", United nations Conference on Trade and Development, G-24 Discussion Paper No. 5

Andualem Berhan (2000): "**Exchange rate liberalization in Ethiopia**", Impact Assessment, Birritu No. 73

Anteneh Tilahun (2001): "**The Effect of Exchange Rate Changes on The Balance of Trade**", Case of Ethiopia , Unpublished BA thesis, AAU, Addis Ababa.

Baker J.M (1995), "**International Economics**", Macmillan publishing company, New York.

Befikadu D. and Kebere M. (1994): " **Post Devaluation Ethiopian Economy: From Stagflation to Stagflation: A Preliminary Assessment And Policy implementation**", In Mekonnin Tadese and Abdulahmed Bedri (ed), the Ethiopian economy: **Problem of adjustment**. Proceeding of the second annual conference on Ethiopian Economy, EEA, AA.

Bhagwati A. and Onisuka (1974): "**Export- import Response to Devaluation**" experience of non-industrialized countries in the 1960's **IMF staff paper** Vol,1, No 2.

Carbough R.G (1992): "**International Economics**", Macmillan publishing company, New York.

Cooper, Richard (1972): "**Currency Devaluation in developing counties**" Essay in International Finance, No 86. International finance sections Princeton University.

Derrese Degefa (2001): "**The parallel foreign exchange market and macroeconomic performance in Ethiopia**", African Economic Research Consortium, Nairobi

Edossa Fufa (2000): "**Foreign exchange rate adjustment policy and its effect on trade balance to achieve Growth in Ethiopia**", unpublished BA thesis, AAU, Addis Ababa.

Edwards s. (1992): "**Real Exchange Rate, Devaluation and Adjustment. Exchange Rate Policies in Developing countries**", the M.T Press

Eshete Amsalu (2007): "**The Effect of Exchange Rate Change on Trade Balance of Ethiopia (1970/71-2005/06)**", unpublished MA thesis, AAU, Addis Ababa.

Equar Desta (2001): "**Determinant of Real Exchange Rate in Ethiopia**", An Empirical Investigation ($1985Q_1$-$2000Q_2$),unpublished MA thesis, AAU, Addis Ababa.

Gashaw. D (1992): "**Exchange Rate Policy in Ethiopia: An Agenda for Action**", Ethiopian Journal of Economics, (1) pp.74.

Gurushri Swamy (1994):"**Kenya: Patchy, Intermittent, Commitment**", Adjustment in Africa, World Bank, pp. 193-237.

Gujirati Domander (1995): "**Basic Econometrics**", 3dr ed McGrew-Hill

Haile Kibret (1994): "**Is The Ethiopian Birr overvaluated**", in Mekonen.T and Abdulhamid.B (e.d) The Ethiopia Economiy Problem of Adjustment.A.A

International Monetary fund(**IMF**): International Finance Statistics year book of various years.

Jacques L.R (1977): "**Exchange Rate policy Deficit and the Real Exchange Rate**", the World Bank working paper, Vol 26, No 1.

Janvier D. Nkurunziza (2002): "**Exchange rate policy and the parallel market for foreign currency in Burundi**", African Economic Research Consortium, Nairobi

Jungho Baek, Kranti Mulik, Won W. Koo (2006), "**The J-Curve Phenomenon: Myth or Reality?**", American Agricultural Economics Association Annual Meeting, Long Beach, California

Khan M. and Lonzondo J (1987): "**Devaluation, Fiscal Deficit and the Real Exchange Rate**", The Economic review, Vol 11, No 2.

Krugman Paul and Obstacel Murice (1987):"**International Economics Theory and Policy**", Harper Collinc Publication, New York.

Maddela GS (1992): "**Introduction To Econometrics**", New York, McMillan Publishing company.

Madlay : " **Trade and The Poor**", M.T press.

Manure (1998), "**International Economics**", M.T press.

Militades.C (1990), "**International Economics**" M.T press.

National Bank of Ethiopia (**NBE**), Annual Report of various years

Peter and B.Kenen (2000): "**The International Economy** ", Cambridge University Press.

R. Dornbush and S. Ficher (1994): "**Macroeconomics, Massachusetts Institution of technology**", New York.

S. Alexander (1995): "**Effects of Devaluation, A simplified synthesis of Elasticities and Absorptive Approaches**", American Economic Review, Vol .51 p 22-42.

Salvatore Dominic (1994): "**International Economics**", McMillan Company, New York.

Sentayehu W/Micheal (1996): "The **effect of devaluation on Macroeconomic Variables, the Ethiopia n case**", unpublished Msc thesis, AAU, Addis Ababa.

Tadelle(1993): " **The impact of Devaluation on Macroeconomic variables**" , unpublished MA thesis, Addis Ababa.

Tura Kebede (1994): "**Exchange rate Policy for the Transitional Government of Ethiopia**", unpublished BA thesis, AAU, Addis Ababa.

World Bank (1994), "**African Development Indicator**"

World Bank (1987),"**Ethiopia: An Export Action programme**" Report No.6432-ET

Appendix I: Export

Value of Export Items in thousands of Birr (1970/71-2009/10)

Period	Coffee	Oil Seeds	Hides & Skins	Pulses	Meat & Meat Prodts.	Fruits & Veget.	Sugar	Gold	Oil Cakes	Live Animals	Chat	Petrol. & Pet. Prdts	Bees Wax	Others	Re-export	Grand Total
1970/71(63)	179,590.00	30,462.00	24,246.00	20,000.00	8,314.00	138,906.00	5,714.00	-	4,003.00	2,013.00	2,238.00	-	1,625.00	8,004.00	5,393.00	430,508.00
1971/72(64)	164,686.00	38,018.00	29,975.00	25,561.00	13,514.00	6,372.00	5,877.00	-	6,329.00	2,662.00	3,660.00	-	3,660.00	5,605.00	4,375.00	310,294.00
1972/73(65)	200,089.00	58,175.00	66,899.00	43,069.00	17,908.00	9,817.00	12,742.00	-	5,715.00	5,767.00	3,492.00	-	1,671.00	3,599.16	5,122.00	434,065.16
1973/74(66)	166,121.00	90,687.00	58,535.00	116,123.00	17,394.00	8,881.00	10,745.00	-	9,707.00	-	4,823.00	-	3,326.00	60,582.00	7,874.00	554,798.00
1974/75(67)	117,507.00	88,760.00	37,225.00	73,529.00	11,099.00	9,794.00	7,888.00	-	7,154.00	-	5,539.00	-	2,518.00	286,440.00	23,606.00	671,059.00
1975/76(68)	297,688.00	35,435.00	42,753.00	52,820.00	7,543.00	7,111.00	9,417.00	-	7,294.00	31,375.00	4,125.00	-	2,665.00	23,252.00	13,499.00	534,977.00
1976/77(69)	408,850.00	26,807.00	52,556.00	48,506.00	5,438.00	9,299.00	13,930.00	-	12,664.00	52,075.00	7,967.00	-	3,259.00	37,508.00	4,979.00	683,838.00
1977/78(70)	514,525.00	11,938.00	57,955.00	30,442.00	1,343.00	4,076.00	-	-	4,607.00	1,542.00	3,215.00	-	3,933.00	12,621.00	1,249.00	647,446.00
1978/79(71)	1,176,626.00	9,648.00	104,051.00	17,907.00	2,029.00	2,728.00	637.00	-	8,130.00	1,541.00	7,462.00	-	-	7,228.00	542.00	1,338,529.00
1979/80(72)	631,651.00	13,586.00	138,691.00	25,851.00	5,434.00	7,441.00	16,391.00	-	5,785.00	8,326.00	4,233.00	-	-		80.00	857,469.00
1980/81(73)	524,325.00	15,539.00	63,357.00	23,693.00	6,330.00	5,378.00	9,775.00	-	162.00	9,800.00	22,349.00	-	3,583.00	108,140.00	190.00	792,621.00
1981/82(74)	377,245.00	16,988.00	94,673.00	20,822.00	5,122.00	6,760.00	4,994.00	-	5,241.00	6,952.00	12,358.00	-	1,443.00	86,350.00	217.00	639,165.00
1982/83(75)	497,650.00	15,536.00	77,052.00	28,372.00	10,361.00	1,764,618.00	8,885.00	-	6,612.00	11,646.00	36,541.00	-	2,347.00	69,062.00	97.00	2,528,779.00
1983/84(76)	590,444.00	30,066.00	93,654.00	20,274.00	5,858.00	6,431.00	8,438.00	-	12,569.00	10,769.00	29,002.00	-	4,625.00	53,932.00	1,259.00	867,321.00
1984/85(77)	446,473.00	11,571.00	72,674.00	13,083.00	3,203.00	4,269.00	3,581.00	-	311.00	8,713.00	8,620.00	-	1,803.00	62,089.00	7.00	636,397.00
1985/86(78)	664,790.00	7,686.00	94,759.00	12,635.00	3,866.00	6,027.00	10,401.00	-	1,975.00	18,903.00	8,477.00	44,249.00	1,271.00	17,863.00	502.00	893,404.00
1986/87(1979)	524,348.00	9,793.00	108,291.00	8,481.00	5,370.00	12,847.00	12,629.00	-	1,662.00	15,646.00	28,677.00	27,294.00	764.00	39,481.00	1.00	795,284.00
1987/88(1980)	439,181.00	22,015.00	133,004.00	15,965.00	4,042.00	11,787.00	14,850.00	-	1,137.00	32,357.00	21,323.00	36,098.00	2,469.00	38,181.00	5.00	772,414.00
1988/89(1981)	626,448.00	11,029.00	123,498.00	16,317.00	2,089.00	8,999.00	10,003.00	-	521.00	23,539.00	7,906.00	18,752.00	-	53,612.00	10.00	902,723.00
1989/90(1982)	405,097.00	8,387.00	134,049.00	35,961.00	1,149.00	4,068.00	37,409.00	-	482.00	10,821.00	21,024.00	26,238.00	1,700.00	57,288.00	39.00	743,712.00
1990/91(1983)	268,451.00	3,633.00	92,206.00	15,716.00	1,015.00	12,001.00	16,362.00	-	36.00	5,169.00	20,422.00	27,099.00	689.00	77,301.00	2,385.00	542,485.00
1991/92(1984)	168,324.00	383.00	58,645.00	386.00	18.00	6,399.00	1,759.00	-	-	467.00	5,073.00	18,826.00	657.00	18,089.00		279,026.00
1992/93(1985)	536,982.00	1,186.00	134,515.00	4,050.00	418.00	2,729.00	5,090.00	-	14.00	1,322.00	65,727.00	30,308.00	1,917.00	16,556.00	1,369.82	802,183.82

1993/94(1986)	718,019.00	44,187.00	203,610.00	27,704.00	672.00	6,864.00	25,723.00	-	5.00	10,757.00	107,932.00	72,452.00	5,514.00	24,024.00		1,247,463.00
1994/95(1987)	1,799,033.71	50,130.01	373,548.93	103,287.42	6,073.36	18,192.37	2,227.00	-	-	7,655.38	172,338.76	95,092.44	6,520.75	97,946.00		2,732,046.12
1995/96(1988)	1,724,008.09	41,938.44	309,700.76	77,224.11	12,169.42	21,029.12	-	-	-	770.44	174,443.67	62,011.40	7,987.48	107,773.00		2,539,055.91
1996/97(1989)	2,307,393.56	74,239.26	372,252.91	87,854.07	24,175.34	45,792.62	4,734.93	-	-	11,200.74	199,533.42	83,000.97	9,175.88	266,272.00		3,485,625.70
1997/98(1990)	2,889,530.58	314,660.13	347,699.01	102,952.83	29,340.29	31,479.22	-	-	-	10,562.15	272,354.99	10,193.29	10,513.97	123,227.00		4,142,513.46
1998/99(1991)	2,112,712.75	271,461.58	243,052.17	101,657.63	31,644.31	40,564.39	1,240.62	-	-	5,724.43	444,987.59	-	9,914.05	248,591.00		3,511,550.51
1999/00(1992)	2,133,645.55	255,329.49	286,459.46	80,021.17	32,707.54	44,249.59	23,958.18	260,044.00	-	14,136.61	618,771.55	-	5,549.27	202,930.00		3,957,802.43
2000/01(1993)	1,520,100.60	269,597.92	633,751.82	72,799.62	14,365.98	45,689.35	68,471.56	234,890.39	-	1,505.57	510,505.60	-	7,247.27	528,767.65	-	3,907,693.31
2001/02(1994)	1,393,809.27	278,738.22	474,425.60	281,409.10	9,422.74	80,114.24	85,106.10	300,714.78	-	7,132.33	418,674.25	-	6,005.77	528,767.65	-	3,864,320.05
2002/03(1995)	1,418,323.93	395,565.10	448,002.81	171,243.68	20,781.49	82,118.01	153,712.13	361,026.31	-	4,129.02	497,866.40	0.26	4,032.26	585,554.54	-	4,142,355.93
2003/04(1996)	1,926,678.82	712,737.99	375,844.17	194,678.54	66,675.88	109,662.71	88,632.48	419,858.09	-	16,453.94	758,878.39	-	8,280.41	498,262.73	-	5,176,644.15
2004/05(1997)	2,901,327.29	1,082,215.25	585,184.51	306,609.32	126,151.99	139,052.79	5,277.14	513,364.45	-	110,874.61	866,802.94	-	9,587.91	684,809.37	-	7,331,257.58
2005/06	3,076,493.99	1,835,270.13	651,332.69	320,969.14	160,842.08	114,541.27	-	562,141.00	-	239,240.22	773,235.44	-	12,551.48	938,758.36	-	8,685,375.79
2006/07	3,741,744.77	1,654,707.49	789,162.45	619,559.70	135,517.72	142,207.59	-	863,856.01	-	323,065.63	816,802.09	-	16,089.81	1,354,901.88	-	10,457,615.14
2007/08	4,897,344.10	2,037,089.95	917,533.77	1,333,631.14	193,943.55	118,398.30	17,879.50	735,122.13	-	376,474.28	1,000,784.64	-	17,091.37	1,998,038.94	-	13,643,331.67
20008/09	3,932,229.39	3,819,428.63	763,692.13	946,826.06	273,517.90	124,029.10	178,586.52	1,034,497.58	-	539,985.47	1,448,074.53	-	16,436.57	2,132,041.39	-	15,209,345.28
20009/10	6913379.5630	4670848.5555	732602.7948	1677731.4810	440952.1816	412604.9092	107.8730	3709811.7145	0.0000	1177285.5029	2710332.1550	0.0000	20605.3495	3649143.0732	0.0000	26115305.8743

Appendix II: Import

VALUE OF IMPORT BY MAJOR COMMODITY (IN THOUSAND OF BIRR)

G.C	Food and live animals	Beverages	Tobacco	Petrol crude	petrol production	Chemicals	Fertilizers	Medical and pharmaceutical products	Soap and polish	Rubber products	Paper and paper manufactures	Textiles	Clothing	Glass and glass ware	Metal and metal manufactures	Machine and air crafts	Road motor vehicles	Electrical material	Tele-communication apparatus	Grain	Others	GRAND TOTAL
1969/70	18683	5364	0	0	28456	26624	0	10087	5466	12469	9405	20020	13124	0	37887	101376	41312	25365	0	0	60334	415972
1970/71	33614	5440	0	0	34624	36373	0	14243	5275	20116	8746	25398	9373	0	51815	81439	48257	27794	0	0	45506	448013
1971/72	25639	6401	0	0	46686	32719	0	12530	5144	17963	8306	28844	7542	0	40402	89707	62579	35563	0	0	47104	467129
1972/73	18358	7918	0	0	30294	44155	0	12194	6238	21029	6897	25173	8075	0	33848	78580	58196	24048	0	0	37583	412586
1973/74	22892	7426	0	0	55495	59791	0	15199	4998	17183	7010	33516	8179	0	49177	71134	57739	22170	0	0	57172	489081
1974/75	18752	7607	0	0	136482	92962	0	18936	5423	17374	15206	37320	11516	0	52779	90034	68286	31790	0	0	64330	668797
1975/76	24237	10368	0	0	117054	79324	0	21674	11185	11321	11784	43258	14427	0	37739	118537	80724	36068	0	0	60394	678094
1976/77	33930	8888	0	0	107941	65621	0	23461	10851	15565	11198	69274	21341	0	42279	90027	110452	37963	0	0	100766	749557
1977/78	28759	10859	0	0	3298	53864	0	32328	8184	10272	8292	69851	48266	0	46739	94601	97217	51006	0	0	109748	673284
1978/79	60213	15673	0	73424	21798	151290	0	50642	9246	17373	19633	99929	27943	0	93636	140930	184597	82761	0	0	143584	1192672
1979/80	72251	1161	10745	244973	94411	113242	81458	68816	14318	35221	22762	57367	6832	5559	104162	202231	135789	44976	13346	40179	103238	1432858
1980/81	88901	2470	15860	287469	57853	85478	3963	40901	18941	38531	33352	59820	4315	7480	100111	213390	165328	35137	20114	44374	104820	1384234
1981/82	135534	1446	21853	329322	32131	89453	16211	48163	26521	44430	24946	71538	6077	3464	76848	227599	259372	43613	29186	76919	153954	1641661
1982/83	174476	1663	17017	360414	36578	136636	28969	38918	24246	35719	16886	55213	5557	4986	145946	234440	164765	81786	19765	118846	168965	1752945
1983/84	168465	6449	13382	325649	52739	107212	26272	51615	15666	38976	26071	58643	3810	6563	162901	519770	210621	97873	23204	114595	151124	2067005
1984/85	345020	1805	12827	281751	36174	76716	36103	41980	6174	41477	11762	69041	7709	4195	143378	225132	179589	56143	30419	257865	163038	1770433
1985/86	530599	4962	2835	220261	32273	87935	44685	58513	6683	45569	34944	79186	3476	3690	166878	274699	287134	76691	45754	382447	194498	2201265
1986/87	320380	6157	6261	163341	62483	114966	29929	68638	10572	60018	23909	58479	4558	5742	156406	327659	339324	102472	74507	280296	301145	2236946
1987/88	246454	7858	11788	181842	34728	110729	72521	50280	10804	51106	29796	69510	2673	4563	174624	465211	369944	81220	88323	177566	210677	2274651

1988/89	294652	21877	560	175339	37512	142131	69846	58440	9079	46798	28094	62156	8319	2761	172831	335284	279220	83705	59141	228633	222608	2110353
1989/90	106320	25972	6432	188581	36500	124181	71893	64550	19374	33342	39840	55404	2742	6937	212696	304650	189288	101802	49759	72882	183856	1824119
1990/91	263350	16163	3564	185376	25050	85072	79548	36305	26013	41867	27775	44920	14488	5180	153769	562457	249844	58889	48189	202106	202486	2130305
1991/92	14402	6290.7	1105.075	92246	100907	42580	150	48294	14433	35740	11760	73571	14705	3517	49487	189544	177203	42756	32882	1018.8	859324.2	1810897
1992/93	497535.9	20866.5	4844.825	444281.5	376807.85	135269.08	13106.2	131578.49	37490.44	73278.46	30564.74	130409	15513.8	9035.01	172057.75	699420.47	402403.11	97670.46	47668.95	418156.7	278915.3	3618718
1993/94	574094	8581.24	20271.35	406531.1	331036.4	228154.9	89678	187200.1	58521.7	156585.2	61251	186945.9	34116.6	14809	496051.5	367948.7	825889.6	192149.8	25562.2	483624	474588.6	4739967
1994/95	906742.7	13304.77	10579.8	522563.7	471350.3	179613.9	343946.9	193304.9	30818	184842.8	53779.8	229950.1	54033.1	24368.4	563219.1	710882.4	1015951.19	286192.8	20677.4	586759.9	730151.9	6546274
1995/96	575263.034	21209.88	7241.025	445953	485912.427	161265.043	330577.859	165784.945	64023.35	279453.3	81699.901	308065.4	76391.4	32943.852	709985.497	854154.505	1393422.033	328577.4	51400.123	506123.8	1334922	7708246
1996/97	37222.351	8589.83	93.495	76900	1427200	47021.107	173812.989	77317.493	55592.5	188169.7	78351.19	414162.1	69542.07	40788.797	973897.374	1415178.37	1117479.862	636728.4	17108.427	8328.083	1837538	8692694
1997/98	72853.273	35583.371	18401.69	166468.5	2099045.843	99001.361	51223.787	142163.065	81407.72	274938.1	169841.152	396757.4	114865.6	41452.047	969099.552	1099417.434	795978.382	776491.6	14950.299	18160.24	1918519	9338459
1998/99	558422.169	37404.821	26392.89	2281.407	1306706.98	142008.367	377581.655	315939.532	100718.5	345274	199439.982	473804.4	230896.5	69704.138	1416817	1375842.952	1390945.696	1032004	42304.596	340646.8	2257512	11702002
1999/00	766560.269	34667.06327	27129.39	30.909	2012189.479	140912.399	336378.827	246178.5542	92105.02	273429.3	163923.9403	433134	279884.7	58402.931	919527.7125	1351512.13	1548459.075	938298.5	32655.53204	646316.2	1783302	11438681
2000/01	641596.563	34628.49516	28561.29	0	2151326.34	153781.929	126860.1243	293784.0692	140236.4	408837.9	217049.7875	461187.9	345433.1	88056.076	1188971.404	1480392.749	1456284.595	782017.6	66418.60097	461335.3	2248533	12313958
2001/02	1365581.26	35885.52984	48549.75	0	2202554.123	145066.381	560257.047	358993.9691	128513.3	340956	269683.6541	471499.1	467110.4	72786.817	1359231.406	1667773.5	1437245.329	893038.6	101455.5257	1246119	3364964	15291146
2002/03	1697566	33509.31534	35614	0	2463917	165902.467	462662.3253	352193.1711	145207.4	376786.8	218151.5012	599603.8	478038.8	78074.823	1313503.659	1963001.712	1817630.473	1059754	111634.184	1580973	2564097	15936848
2003/04	1981297.44	36937.32171	37347.97	0	2608285.207	201668.153	923523.1591	636324.159	173378.5	417410	329914.9389	606294.7	601949.3	104361.82	2012945.206	2399182.74	2124501.477	2447540	502494.2992	1573618	4152333	22297690
2004/05	1566093.33	52089.5437	52034.27	0	5736666.01	250950.546	1055293.642	671524.4312	240862.8	536826.6	434417.0563	774284.9	836015.3	125294.29	3476768.46	4553244.353	2811971.699	3062726	344107.8464	1334778	4853003	31434174
2005/06	2139779.03	45714.55541	77859.75	0	7422806.583	348263.603	1180768.399	1212654.794	337444.6	730113.4	517373.7907	1065381	1291287	145047.54	4157674.628	5305516.14	4183803.576	2978793	365874.0586	1621232	6366919	39873075
2006/07	1799699.88	68204.00129	74840.58	0	7524664.006	399851.688	933867.0498	1410843.774	328116.4	838144.6	565482.51	808906.6	1523051	163833.93	4460322.224	7036854.445	6062545.59	2968701	329270.4139	1323878	7831172	45128371
2007/08	2499134.37	97079.8306	115642.3	0	15076123.08	488538.933	2828101.425	1848363.143	377281.8	1030557	770591.3735	986145.5	1198037	243666.56	7051109.461	7118468.976	4279546.928	4404967	243817.8032	1902765	12489774	63146946
2008/09	7251052.57	89171.48612	104397.8	0	17219181.93	677521.437	3008355.227	2771688.639	552503.1	1422155	819639.4644	1023983	1124962	235344.32	7990303.462	8713241.164	4859888.341	5866530	51369.42817	6285857	20895905	84677193

Table 3.2: Percentage Share of Major Export items

Commodities	Imperial regime (1970/71-1973/74)		Derge regime (1974/75-1990/91)		EPRDF regime (1991/92-2009/10)		The whole period (1970/71-2009/10)	
	Total Export in millions of Birr	percent share of Export	Total Export in millions of Birr	percent share of Export	Total Export in millions of Birr	percent share of Export	Total Export in millions of Birr	percent share of Export
Coffee	710.49	41.08%	8511.30	57.32%	46111.08	38.04%	55332.87	40.15%
Oil seeds	217.34	12.57%	338.42	2.28%	17809.71	14.69%	18365.47	13.33%
Chat	179.66	0.82%	1520.45	1.68%	11863.12	9.79%	13563.22	8.80%
Hides and Skins	179.66	10.38%	1520.45	10.24%	8701.02	7.18%	10401.12	7.55%
Gold	0.00	0.00%	0.00	0.00%	8995.33	7.42%	8995.33	6.53%
Pulses	204.75	11.84%	460.37	3.10%	6510.60	5.37%	7175.72	5.21%
Live animals	10.44	0.60%	249.17	1.68%	2858.74	2.36%	3118.36	2.26%
Fruits and Vegetables	163.98	9.48%	1883.63	12.69%	1585.72	1.31%	3633.33	2.64%
Meat and Meat products	57.13	3.30%	81.29	0.55%	1579.39	1.30%	1717.81	1.25%
Sugar	35.08	2.30%	185.59	1.25%	662.51	0.55%	883.17	0.64%
Bee's Wax	10.28	0.59%	33.07	0.22%	175.68	0.14%	219.03	0.16%
Total	1768.80		14783.74		106852.88		123405.43	

Source: National Bank of Ethiopia

Table 3.3: Percentage share of Imports by End Use

Commodities	Imperial regime (1970/71-1973/74)		Derge regime (1974/75-1990/91)		EPRDF regime (1991/92-2009/10)		The whole period (1970/71-2009/10)	
	Total Import in millions of Birr	percent share of Import	Total Import in millions of Birr	percent share of Import	Total Import in millions of Birr	percent share of Import	Total Import in millions of Birr	percent share of Import
Capital goods	590.52	32.72	9801.54	36.9	159893.54	32.31	170285.60	32.55
Others	0	0	50.00	0.19	801.77	0.21	851.77	0.2
Consumer Goods	612.76	33.95	7981.42	30.05	142231.81	28.74	150825.99	28.83
Others	0.00	0	833.70	3.14	34655.32	8.92	35489.02	8.52
Fuel	151.71	8.41	3889.36	14.64	85208.95	17.22	89250.02	17.06
Others	0	0	10.90	0.04	632.20	0.16	643.10	0.15
Semi-finished products	358.66	19.87	3834.92	14.44	80047.83	16.18	84241.41	16.1
Others	0	0	777.70	2.93	40997.93	10.56	41775.63	10.03
Miscellaneous	13.50	0.75	169.13	0.64	13902.81	2.81	14085.43	2.69
Raw Materials	77.50	4.29	887.92	3.34	13248.29	2.68	14213.71	2.72
Total	1804.64		26564.29		494818.58		523187.51	

Source: National Bank of Ethiopia

Table 3.5: Exchange Rate Premiums

Year	Official Exchange Rate	Parallel Exchange Rate	Premium
1970/71	2.3	2.3	1
1971/72	2.3	2.8	1.22
1972/73	2.3	2.32	0.1188
1973/74	2.07	2.21	0.0672
1974/75	2.07	3.46	0.6703
1975/76	2.07	4.9	1.3663
1976/77	2.07	4.11	0.9879
1977/78	2.07	3.78	0.826
1978/79	2.07	3.92	0.8921
1979/80	2.07	2.87	0.3841
1980/81	2.07	2.84	0.3709
1981/82	2.07	3.08	0.4869
1982/83	2.07	3.28	0.5867
1983/84	2.07	3.62	0.749
1984/85	2.07	4.26	1.0575
1985/86	2.07	4.17	1.0135
1986/87	2.07	4.73	1.2849
1987/88	2.07	6.07	1.9321
1988/89	2.07	5.74	1.7714
1989/90	2.07	5.9	1.8498
1990/91	4.5	6.26	0.3906
1991/92	4.5	6.91	0.5348
1992/93	5.01	7.1	0.4178
1993/94	5.77	7.05	0.2213
1994/95	6.25	7.3	0.1672
1995/96	6.32	7.64	0.2092
1996/97	6.5	7.16	0.1016
1997/98	6.88	7.08	0.0293
1998/99	7.51	7.69	0.0238
1999/00	8.14	8.31	0.0205
2000/01	8.33	8.79	0.0557
2001/02	8.54	8.68	0.0167
2002/03	8.58	8.71	0.0149
2003/04	8.62	8.67	0.0064
2004/05	8.65	8.71	0.0068
2005/06	8.68	9.03	0.0397
2006/07	8.79	8.96	0.0185
2007/08	9.24	9.56	0.0338
-2008/09	10.42	11.81	0.1334
2009/10	12.89	13.68	0.0613
2010/11	16.12	16.53	0.0255

Source: National Bank of Ethiopia

Table 3.6: REER Indices

Year	Official Exchange Rate	Parallel Exchange Rate	Premium	REER
1975/76	2.07	4.9	1.37	195.3
1976/77	2.07	4.11	0.99	220.6
1977/78	2.07	3.78	0.83	245.3
1978/79	2.07	3.92	0.89	257.0
1979/80	2.07	2.87	0.38	251.3
1980/81	2.07	2.84	0.37	253.5
1981/82	2.07	3.08	0.49	232.6
1982/83	2.07	3.28	0.59	254.0
1983/84	2.07	3.62	0.75	277.7
1984/85	2.07	4.26	1.06	281.3
1985/86	2.07	4.17	1.01	348.5
1986/87	2.07	4.73	1.28	352.7
1987/88	2.07	6.07	1.93	293.5
1988/89	2.07	5.74	1.77	267.1
1989/90	2.07	5.9	1.85	268.9
1990/91	4.5	6.26	0.39	287.6
1991/92	4.5	6.91	0.53	333.1
1992/93	5.01	7.1	0.42	407.2
1993/94	5.77	7.05	0.22	247.8
1994/95	6.25	7.3	0.17	177.9
1995/96	6.32	7.64	0.21	160.5
1996/97	6.5	7.16	0.10	155.1
1997/98	6.88	7.08	0.03	161.7
1998/99	7.51	7.69	0.02	119.1
1999/00	8.14	8.31	0.02	112.2
2000/01	8.33	8.79	0.06	99.3
2001/02	8.54	8.68	0.02	100.0
2002/03	8.58	8.71	0.01	93.6
2003/04	8.62	8.67	0.01	99.0
2004/05	8.65	8.71	0.01	98.5
2005/06	8.68	9.03	0.04	94.0
2006/07	8.79	8.96	0.02	102.9
2007/08	9.24	9.56	0.03	120.8
2008/09	10.42	11.81	0.13	136.3
2009/10	12.89	13.68	0.06	184.73

Source: National Bank of Ethiopia

DECLARATION

I, the undersigned, declared that this project is my original work and has not been presented for a degree in any other university, and that all source of materials used for the project have been duly acknowledged.

The advisor's comment has been dully incorporated.

Declared by:

Name: _____

Signature: _____

Date: _____

Confirmed by Advisor:

Name: Wubit Fekade

Signature: _____

Date: 13/06/2012