

ADDIS ABABA UNIVERSITY
SCHOOL OF GRADUATE STUDIES

THE EFFECT OF DEPRECIATION OF BIRR ON
MAJOR EXPORT PRODUCTS OF ETHIOPIA: THE
CASE OF HIDES AND SKINS

BY
ELIAS A. ALI

June, 2011
Addis Ababa

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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 Arts in Economics
School of Economics**

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Declaration

I, the undersigned, declare that this project work is my original work and has not been presented, in part or whole, in any other university or college. All sources of the materials used for this project work have been duly acknowledged.

Name -----

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Advisor -----

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Acknowledgements

This project would not have been possible without the guidance and the help of several individuals who in one way or another contributed and extended their valuable assistance in the preparation and completion of this study.

First and foremost, the omnipresent God, for answering my prayers for giving me the strength to plod on despite my constitution wanting to give up and throw in the towel, thank you so much Dear Lord.

I am heartily thankful to my supervisor, Dr. Girma Estifanos, whose encouragement, guidance and support from the initial to the final level enabled me to develop an understanding of the subject.

My utmost gratitude also goes to my family for their support in moral and material till the completion of my study.

Lastly, I offer my regards and blessings to all of those who supported me in any respect during the completion of the project.

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Abstract

The paper analyses the effects of trade and exchange rate policies on one of Ethiopia's agricultural export item, hides and skins. The problem which motivated this study is the theoretical debates and empirical contradictions given on the matter of effect of devaluation/depreciation of domestic currency on the performance of export of the country. Ethiopia, as one of the most endowed in enormous capacity in livestock population, it is a potential advantage to the country to be a country with higher competitive advantage in the sub sector of export of hides and skins. But the reality is the exact opposite. The country at the head in livestock population is at the tail of world exporters of hides and skins. one of the policy measures taken by the government in the last couple of decades in order to improve the level of export of the country in general is devaluation (and continuous depreciation) of birr. The step towards market based determination of exchange rate is intended to give an enhanced performance of exports especially in sectors which the country has great potentials. Therefore, the study asks and answers what happened in the export of hides and skins when the exchange rate depreciates continuously for the last 17 years. The empirical findings of the study reveal that real exchange rate is one factor, among many others, that affects the volume of export of hides and skins. Hence, it is recommended that policy towards liberalized exchange rate determination should be complement by other policy measures which are in harmony with the economic agenda of export enhancement.

1. Introduction

1.1 Background of the Study

The two major economic policy instruments by which the government (or quasi independent part of the government) monitor and adjust the economy are fiscal and monetary policies. Though they mainly affect apparently different markets, it's practically proved that using both policies together helps a lot in determining the level of output and interest rate. The techniques used to in monetary policy include the rate at which we exchange domestic and foreign currencies. The exchange rate policy a country is following a critical role on the country's trade balance, net international capital flow and other macro economic developments.

1992/93 was a landmark in the Ethiopian exchange rate policy where the exchange rate policy was reformed. Before this time the then government has been following a purely controlled type of exchange rate determination where Ethiopian birr was pegged to the US dollar at the rate of 2.07 per dollar. During this period there was massive overvaluation of the birr which in turn led to considerable fall in export prices of the country's export commodities while the price of manufactured imports of the country had increased (Gebrelibanos, 2005). On Oct. 1992 there was a massive devaluation of birr followed by the May 1993 establishment of auction system as an effort to liberalize the market so as to achieve market determined exchange rate. At July 1995, the government unified the official and the auction based exchange rates. From the date of unification up to the present day the quasi-market auction based exchange rate system is being used (Derese Degefa, 2001).

The progressive downward movement of the exchange rate of birr is tied with the general concept of effect of devaluation/depreciation on the trade balance. The response of

export supply and import demand to the price change induced by the exchange rate changes should be strong enough in order to make the exchange rate change exert a positive influence on trade balance. However, in most developing economy cases, the type of import is poorly substitutable by domestic products and the type of export is less price elastic in the international market, so that downward movement of the exchange rate may appear as negatively or insignificantly positively affecting the trade balance at least in the short run (Birr devaluation-will it correct Ethiopia's trade deficit problem. (Derk Benien and etal, 2010).

1.2 Statement of the Problem

With the insistent of World Bank and IMF, and the support of African Development Fund, the structural adjustment program was introduced to the country in 1992. It was aimed partly at transforming the country's exchange rate policy in to market based determination so as to improve the country's competitiveness in the international market and the trade balance. Since then the government allows the exchange rate to depreciate progressively. The potential benefit tied with such measure (devaluation/depreciation) is that the prices of country's exports become lower so that export volume and thus revenue of the country will go up, other things remain unchanged (African development bank group, 2000).

The ADLI strategy that Ethiopia is currently following focuses on improving the quality and quantity of agricultural products by which the country considers to have a comparative advantage. According to 2001 world statistical compendium produced by FAO, the country is appeared to be the second largest in livestock population in Africa. Its share of livestock holdings is 2.4%, 3.1%, 11.15%, 23% and 35.5% when compared with the total livestock population of the world, developing countries, Africa, COMESA member countries and East

Africa respectively. The hides and skins are the most important products of livestock for both domestic and international market. The lion share of the country's export is taken by coffee with about 40% in average, while the second well performing export sector is hides and skins having 14% of the total export. Berhe Arkebe (2009) noted that Ethiopia has been exporting hides and skins for the last 100 years, However, in spite of enormous potential of the country in the production and global trading of hides and skins, the country is still not in a position that it can be said the country is getting the expected level of foreign earnings from the export of hides and skins. Any effort exerted to improve the quality and quantity of the country's export products pays off with massive incoming of foreign earnings. Since the exchange rate reformation period, the value of birr in terms of foreign currency has been declining. The effect of this kind of policy measure on the export performance of hides and skins is of a great interest. Hence, the study mainly attempts to identify the impact of post reformation exchange rate movements on the country's export performance of hides and skins, so that, to fill the gap in Ethiopian literature which have focused on the effect of the exchange rate policy on other export products of the country.

1.3 Objectives of the Study

The general objective of the study is to investigate the effect of depreciation of birr on hides and skins export supply of Ethiopia. The specific objectives of the study are:

- The response of hides and skins export supply to changes in real exchange rate.
- To make policy recommendations in relation to exchange rate policies for improving export performance of hides and skins.

1.4 Significance of the Study

Globalization leads every country into great economic opportunities but with highly competitive global markets. Hence each and every economic decision to be made by a country should be subjected to watchful understanding of the global economic arena and cautious realization of its relationship with domestic economic grounds. The effect of exchange rate movements on macroeconomic variables is one of the most considerable policy issues that must be taken in to account by policy formulators. The study focuses on one of these macro economic variables, i.e.; export performance of hides and skins which is the second largest source of the country's export earnings. Hence the conclusion of the study and the proceeding policy recommendations give a valuable insight to policy makers in the sector for further revisions and calibrations aiming at improving the competitiveness of the products in the global market.

1.5 Hypothesis of the Study

The hypothesis of the study is that exchange rate depreciation is positively correlated with the export supply of hides and skins. That means depreciating birr helps the country to get a significant increase in export supply of hides and skins.

1.6 Scope of the Study

Although the study peaks a vast topic in the macroeconomic policy, i.e.; the effect of exchange rate movements on export performances, it is specified to a sub-sector analysis on hides and skins. Apparently there are many factors that affect performance of hide and skins exports; some are positive some are negative. Out of these exchange rate plays a critical role by altering the level of demand for the exports and the supply too. Thus the study focuses only on the effect of exchange rate movements. Besides, the effect of exchange rate on hides and skins is multi-faceted; it can be on raw materials, foreign direct investments on the sector, production quality, export level, imports of new and improved technologies, and the like. Among this the study concentrates on the export performance of hides and skins.

2. Review of Related Literatures

2.1 Theoretical Literatures

2.1.1 The Competitive Advantage and the Exchange Rate

Economic affluence of a nation vastly depends on the productivity with which national resources are engaged. Economies step forward by upgrading their competitive position in the global economy and developing the capability to compete successfully in a high productivity segments and industries. The foremost essential matter to the upgrading process is trade, in which outputs from the relatives productive segments go for exports and products, which if produced domestically would be at a lower productivity, come from abroad (Michel porter, 1998).

Although, however, bulk of explanations is existed on competition and competitive advantages, yet there is conflicting ideas around the subject starting from blurred thinking on what the term “competitive” means with respect to a nation.

Some see national competitiveness as a macroeconomic phenomenon, driven by such variables as exchange rates, interest rates, and government deficits. But nations have enjoyed rapidly rising living standards despite budget deficits (Japan, Italy, and Korea), appreciating currencies (Germany and Switzerland), and high interest rates (Italy and Korea).

Others argue that competitiveness is a function of cheap and abundant labor. Yet nations such as Germany, Switzerland, and Sweden have prospered despite high wages and long period of labor shortage. Japan, with an economy supposedly built on cheap,

abundant labor, has also experienced pressing labor shortages. Its firms have succeeded internationally in many industries only after automating away much of the labor content. The ability to compete despite paying high wages would seem to represent a far more desirable national target (Michel porter, 1998).

Determinants of national competitive advantage

Nations achieve international success in a particular industry, why? The answer lies in the following four broad attributes.

1. *Factor conditions.* The status of the nation in terms of factors of production, such as skilled labor or infrastructure, and others those are necessary to compete in a given industry.
2. *Demand conditions.* The characteristics of domestic demand function heavily affects the direction if innovation and the product development of the home industry.
3. *Related and supporting industries.* The existence of domestic suppliers and related industries makes a higher contribution for the domestic industries' strength in terms of international competitiveness.
4. *Firm strategy, structure, and rivalry.* The way that industries are formed, shaped, and nurtured, and the nature of domestic rivalry are also major factors for the global competitiveness of industries (Michel porter, 1900).

Having known that national competitive advantage is determined by the above four factors, (the “national competitive diamond”) explained a variable is seem to remain, which is government. It is of not few literatures as is put with a major role in the national advantage amidst international competition. Government is thought as an influential mediator in the

modern international competitive economy. Nevertheless, the actual role of government is a kind of influencing (or influenced by) the above four determinants either in a positive or negative way. How?

Factor conditions are influenced by government subsidies, the way of government interventions in the capital market, national policies headed to human capital formation, and many others. Product standards set by government agencies shape local demands. The influence of the government also goes to the environments of supporting or related industries through, for example, control over advertisement and the like. Regulatory intervention of the government in the capital market, national policies toward tax system, antitrust laws and directives can character the types of firm strategy, structure and domestic rivalry. Government effort to hold down the value of national currency can be, but not always, seen as fruitful in some ways from the international competition stand point of the local firm (Michel porter, 1990).

Thus one of the most desirable areas the government is supposed to play an appropriate part is the currency markets.

2.1.2 The Economics of Exchange Rate

Definition of Exchange Rate

Foreign exchange, as its name indicates, foreign countries currency which is used as a medium of economic activities between home country and foreign country. Foreign exchange is defined as foreign money which is internationally acceptable by all the trading nations in the world. There are many reasons for why people of a nation, including government need other countries currency. Eric J. Pentecost has provided the following balance of payments

transactions as major transactions which need foreign exchange. These are to buy foreign goods and services, to make unilateral transfer payments; to hold deposits in overseas banks, to make long and short term loans to foreign residents, firms and governments.... The demand for foreign exchange is derived from our demand for foreign goods and services imports and capital exports. In other words, the demand for foreign exchange arises out of debit transactions in our balance of payments' current and capital accounts. The supply of foreign exchange available to a country is made up of the foreign money earned by exporting various goods and services, receiving unilateral transfer payments from abroad and long and short term capital imports or inflows. The supply of foreign exchange, thus, is derived from the credit transactions in the balance of payments' current and capital accounts of the home country. All the foreign receipts-earnings and borrowings constitute foreign exchange supply and all the foreign payments-spending and lending constitute our demand for foreign exchange (Pentecost, 1993).

In order to carry out the above balance of payments transactions a country's domestic currency has to be converted to foreign currency and foreign currency to domestic one. This gives rise to the importance of price by which we can convert currencies. The amount of domestic currency that must be paid per unit of foreign exchange is, therefore, the "foreign exchange rate".

Determination of Foreign Exchange Rates

If a country is following free market operation where market forces matter in the economy, the external value of the country's currency is determined by the interaction of those market forces. If a country's foreign earnings and borrowings are greater than its spending and lending, the country will have a surplus of supply of foreign exchange than the foreign country; and

the reverse is true when country's spending and lending exceed its earnings and borrowings. If one country's sales of goods and services are greater than that of the other, the country will possess greater amount of supply of foreign exchange and in the other country the supply of foreign exchange will be lower. By supposing this trend is occurring continuously, the surplus country's currency will be appreciated and the deficit country's currency will be depreciated. Currency appreciation occurs when there is an increase in the number of units of one nation's currency that must be given up to purchase each unit of another nation's currency. On the other hand, currency depreciation occurs when there is a decrease in the number of units of one nation's currency that must be given up to purchase each unit of another nation's currency (Joseph P. and David V., 2002).

The rate at which currencies can be exchanged is given by:

$R = C_D / C_F$, where R- foreign exchange rate, C_D - domestic currency, C_F - foreign currency

Joseph P. and David V. listed out major determinants of foreign exchange rates as follows; foreign demand for home country's exports has positive relationship with the appreciation of domestic currency; domestic demand for imports will depreciate domestic currency; higher interest rates in the domestic country's economy relative to those of foreign nations will appreciate domestic currency; the profitability of direct investment in home country relative to the profitability of similar investment in foreign nations will push the price of domestic currency upward; expectations of higher future price for the home country's currency will increase the current exchange rate; a rise in the domestic price level of the economy relative to that in foreign nations will push down the domestic currency price.

Types of Exchange Rate Systems

There are three types of exchange rate systems internationally.

1. Rigidly fixed or pegged exchange rate system

In this type of exchange rate system, there is complete government intervention in the foreign exchange market. The exchange rate is fixed at a given equilibrium level, and if the market forces of demand and supply should tend to upset this equilibrium the government peg the equilibrium exchange rate. This is by selling foreign exchange when there is too much demand for it and buying foreign exchange when there is too much supply of it in the market. The purpose is clearly to stabilize the price of foreign exchange at a given equilibrium rate. However it has demerits such as the need of building larger foreign exchange reserves and it puts a heavy burden on the government.

2. Controlled floating or managed flexibility

There are three sub- categories under this system of managed flexibility

- 1- Adjustable peg system- In this system, a country should try to hold on to a system of fixed exchange rate for as long as it can; i.e. until the country exhausts all its foreign exchange reserves. Till then, the country should peg or support its fixed exchange rate. Once, the foreign reserves are exhausted, the theory suggests the country should undertake devaluation and move to another equilibrium exchange rate.
- 2- Crawling or trotting peg or gliding parity- We should not wait until we have exhausted all of our reserves of foreign exchange; instead we should keep on adjusting to new

demand and supply conditions of our foreign exchange and adjust our exchange rate at frequent intervals.

- 3- Dirty floating- here, the exchange rate basically to be determined by the market forces of supply of and demand for foreign exchange; but we allow government intervention into the foreign exchange market to, what one may sell, set right or “smoothen” the ups and downs in the exchange rate movements/ the world’s international exchange rate mechanism is currently on, what may be described as a dirty floating system. (H. Manure, 1998).

3. Clean floating or perfect flexibility

In this system “we allow the exchange rate to be determined by free market forces of demand for and supply of foreign exchange. We let exchange rate move up and down and let foreign exchange market clear by itself, with no government intervention” (H. Manure, 1998).

Having described how exchange rate is defined, and determined, and the types of exchange rate systems, now let’s look at the theories on the movement of exchange rates through its effect on the trade balance of a nation. The theories are developed overtime.

2.1.3 The Exchange Rate Movement and the Current Account in an Open Economy

1) The Elasticities approach

The developers of the foreign trade multiplier analysis did not think that income effects were the only determinants of trade flows. At the time of the gold-standard thinking, Alfred Marshall developed the analysis of elasticity pattern and the forth-coming trade flow behaviors.

This analysis became most important component in the economics of exchange rate only after the work of Keynes regarding the foreign trade multiplier.

The elasticity approach tries to understand what happens if prices move holding income constant. In contrast, the foreign trade multiplier asks about the effect of income change on trade flows. In order to realize what the elasticity approach tries to put on the surface first start from retaining the Keynesian assumption that local prices in both trading countries are hold constant. The change in relative prices comes from the changes in the nominal exchange rate. (However, we still hold-up the expectation that the exchange rate determination system relies not on the demand and supply interaction in the foreign exchange market) (Mehmet Ugur, 2002).

Fig 2.1 shows the quantity of the currency of, say, U.S. on the horizontal axis representing the foreign exchange in general. The vertical axis shows the price of a dollar in terms of the birr. The higher the value of e , the more the birr to be dominated by a dollar, in a simple word it is devaluation if the birr.

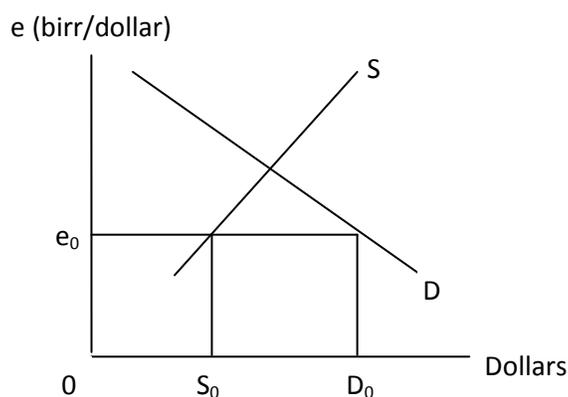


Fig 2.1 Demand and supply in the foreign exchange market.

Let, for our analysis, U.S. is the foreign trading partner with its currency dollar, and Ethiopia is the domestic partner with birr as the national currency. The demand for dollars comes from the need of domestic importers trying to make an import from U.S. where the exporter of the U.S. products wants to receive the payment in terms of dollars. For the time being the analysis is restricted to visible trade but recognizing that foreign currency can be demanded for other purposes out of the transaction of visible trade. Therefore we are trying to analysis what lies behind the demand curve for dollars with respect to imports (Mehmet Ugur, 2002).

The volume of imports is purely guided by demand and supply. That is the demand for imports reflects the import volume is directly inversely related to the birr price of imports. And the supply of imports represents that the domestic country can make as many imports as us wanted at the pre-set level of the dollar price, p_m^* , in the world market. (Notice that Ethiopia, the importing country has a small economy in the global economic environment) (Mehmet Ugur, 2002).

Now to drive the demand for dollars, let's transform the demand at a given birr price in to the demand at a given dollar price. Since $p_m = ep_m^*$, which can be done at any given level of rate of exchange rate.

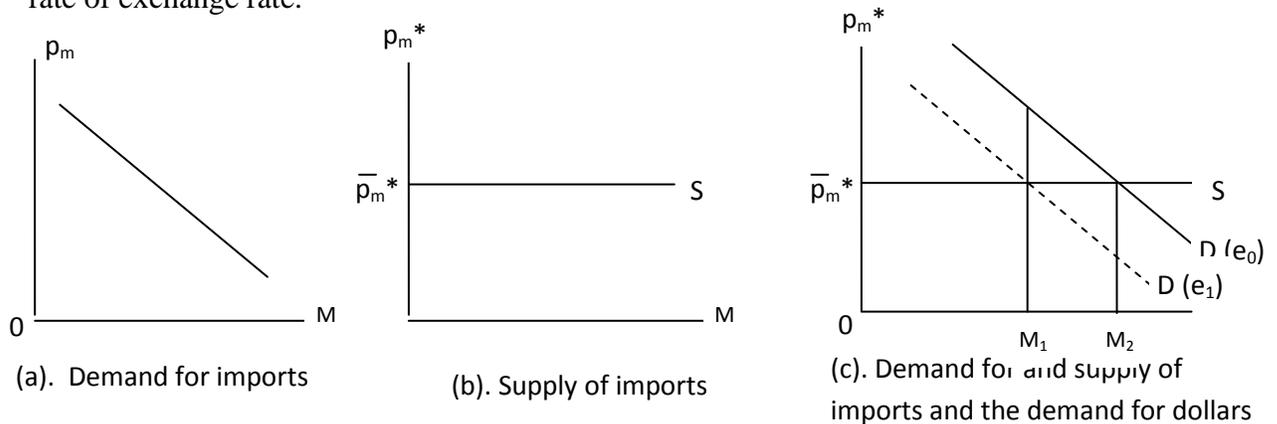


Fig 2.2 Imports and the demand for dollars

The curve $D(e_0)$ in Fig 2.2 (c) represents the curve D of Fig 2.2 (a) at some exchange rate e_0 . The demand for dollars at e_0 is the dollar price of imports p_m^* multiplied by the quantity of imports M_0 , say D_0 . The values e_0 and D_0 represent one point on the demand curve for dollars in Fig 2.1.

Now let's consider the effect of devaluation of the birr to some higher exchange rate e_1 . The above 3 graphs are left untouched because they are presented in terms of the currencies that are needed by the respective agents, i.e., the birr for buyers, and the dollar for sellers). However, when we come to transforming the demand curve of birr into the demand curve for dollars, since the transforming ratio that is the exchange rate is now changed, there is a need for revision in terms of the new increased level of exchange rate. For example, the import quantity of M_0 will now be bought at a lower dollar price. At the new ratio $p_m = e_1 p_m^*$, which is lesser import will be taken. Simply, the demand curve goes down. Holding this up, the elasticity of the demand for imports comes to the mind (Mehmet Ugur, 2002).

Analogously, as shown by fig 2.3, the supply of dollars is characterized with the elasticity of supply of exports. The small country selling in the world market at the fixed dollar price, p_x^* , faces an upward-sloping supply curve of exports as a function of birr price. This can easily be translated into a supply curve as a function of the dollar price for any defined exchange rate. The increase in the level of the transformer, i.e., the exchange rate from e_0 to e_1 initiates the increase of the supply of exports. Thus the final effect will be the increase in the quantity of exports to X_1 and the value of exports, or supply of dollars, to $p_x^*.X_1$.

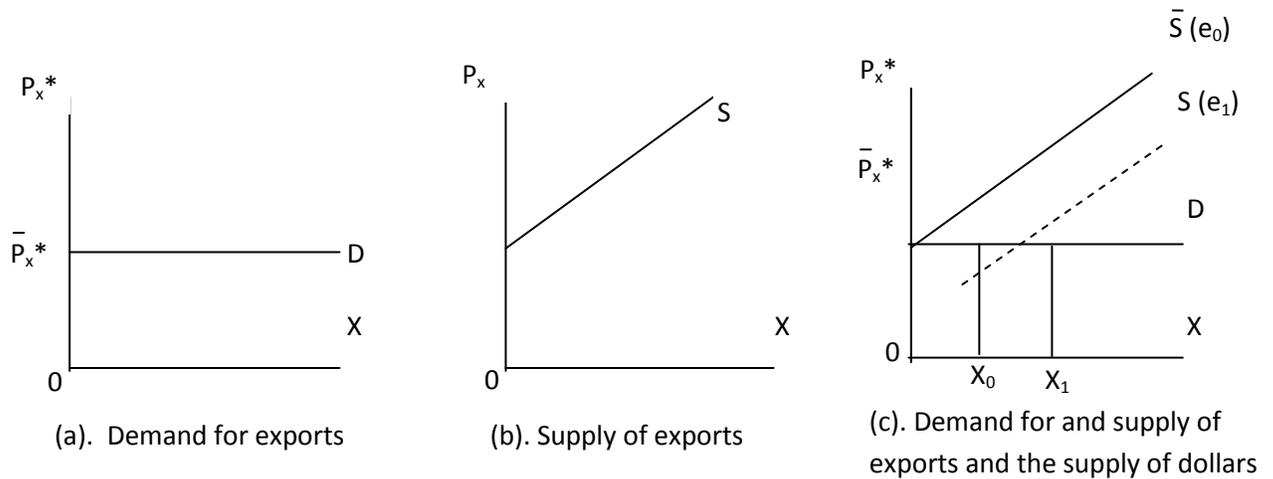


Fig 2.3 Exports and the supply of dollars

Therefore, the exchange rate is set at the point of intersection of the demand for and the supply of dollar. Below this point there is an excess demand and above this point there is an excess supply of dollars. If the country adopts a policy of devaluing when there is an excess demand for dollars and revaluing when there is excess supply, it will approach the equilibrium e . In the real world, however, employing this policy option is not easier as we have seen on the graphs. The reason for this heavily relies that the real world equilibrium is not constant over time. Besides, there is considerable time lag between the changes in exchange rates and the corresponding responses to be seen in the trade flows (Mehmet Ugur, 2002).

The analysis turns to be in need of critical treatment when the exporting country faces a down ward sloping demand curve. As it is shown in the graph below, the right-ward shift of the supply curve caused by devaluation of the exchange rate may not have a purely seen result as it has been described above. In fact, the type of change on the export revenue induced by the devaluation depends on the level of elasticity of the demand curve for exports. That means if the elasticity exceeds one, export revenue will surely increase and hence the supply curve of dollars will get an upward slope. But if the demand curve is inelastic, the increase in the price of dollar

in terms of birr will reduce the total revenue to be gained from exports, and hence, the supply curve of dollars will bend back. (Mehmet Ugur, 2002).

This may not change the conclusion that devaluation will reduce the excess demand for dollars, as in Fig. 2.4 (b), where the decline in the demand for dollars induced by devaluation exceeds the decline in supply. But if the demand for imports happens to be very inelastic, it is possible that the demand for dollars declines less than the supply, as at the higher equilibrium exchange rate in Fig. 2.4 (c). Devaluation then worsens the trade balance because the elasticities are perverse – that is, low (Mehmet Ugur, 2002).

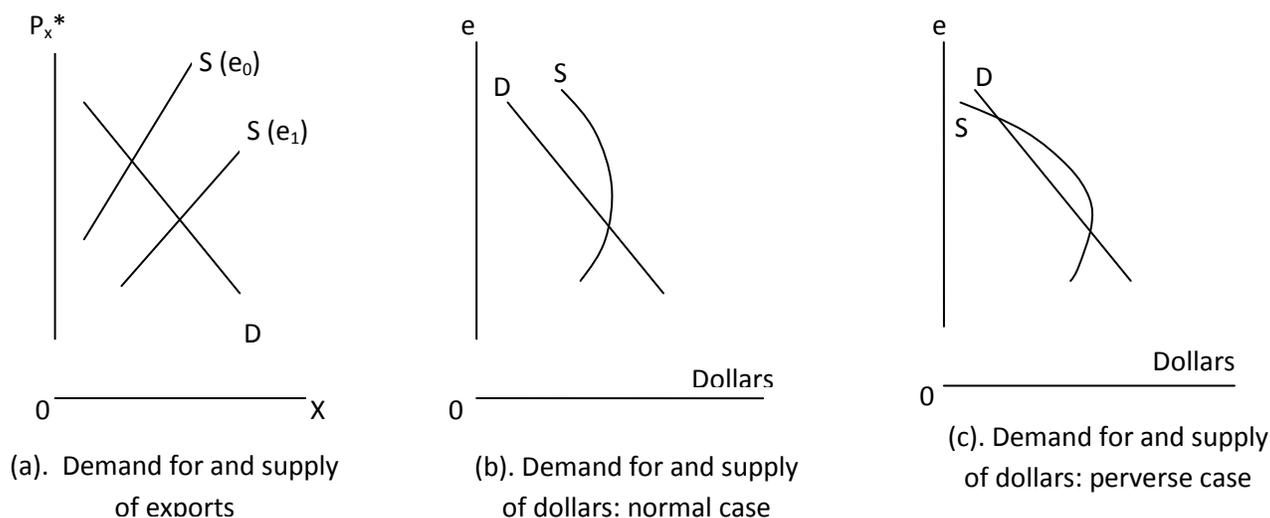


Fig 2.4 Inelastic demand for exports

As it can be shown from the above graphs the existence of the perverse case depends on the price elasticities of demand and supply for both exports and imports. This statement is set as a condition as the Marshall–Lerner condition, such that the necessary and sufficient condition for devaluation to improve the balance of trade is that:

$$\frac{\varepsilon_x(\eta_x - 1)}{\varepsilon_x + \eta_x} + \frac{\eta_m(1 - \varepsilon_m)}{\varepsilon_m + \eta_m} > 0$$

Where ε_x = price elasticity of supply of exports = \bar{X}/\hat{p}_x

η_x = price elasticity of demand for exports = $-\bar{X}/\hat{p}_x$

ε_m = price elasticity of supply of imports = \hat{M}/\hat{p}_m^*

η_m = price elasticity of demand for imports = $-\bar{X}/\hat{p}_m$

Since the elasticities of demand (as well as of supply) have been defined to be positive, it is immediately evident from the above equation that the perverse case where the Marshall – Lerner condition is not satisfied and devaluation worsens the trade balance can arise only if the demand for exports is inelastic (Mehmet Ugur, 2002).

A revision of what the econometric evidence seemed to be saying changed many suppositions that econometricians made on the value of the variables under the above condition. In fact, the early estimates were based on data for the 1930s and 1940s. At that time, there was a wide spread control over trade resulting in difficulties on trade flows to respond well to changes in prices. The later estimates were based on the 1950's and onwards data where trade flows comes to a more liberalized system, by which changes in trade balance, induced by changes in prices, can be seen easily. Partially, the development in econometric techniques played its own role. Early estimates regressed current account trade on current income and prices or at most used a single year's lag. This gave a way to understated response of trade flows to price changes. Recent works allow the possibility of prolonged lags in response. The reason for this is that trade can respond swiftly (in fact, within months) to changes in income, but responses of

trade flows to changes in prices are noticeably sluggish (it may take 3 to 4 years). The would-be reason for this is much trade is conducted with a routine supplier, and there is a need for high consideration to change the supply source and when it is proved that there are long-enough-lasting promising benefits to make the change sensible (Mehmet Ugur, 2002).

The sluggish move of the trade flow's response to price changes gives rise to the existence of what we call the "J-curve". To analyze how this can happen, let's suppose that trade agreement is signed at time t_0 . Since trade agreements are made some time before the delivery is in effect, the transaction enters trade statistics a bit earlier. However, there is no immediate effect on the volume of trade on the ground. If country's exports are highly dominated by domestic currency and imports are mostly dominated by the trading partner's currency, the primary effect is to deteriorate the trade balance. That is the birr value falls while the birr value of imports remained untouched. Now, if we think that this happens to all industries in the economy, the deterioration persists until sometime t_1 . Therefore, the contracts entering the trade statistics would be those signed after t_0 , and would thus reflect the higher birr prices charged by exporters to take advantage of the devaluation (Mehmet Ugur, 2002).

The trade deficit would thus shrink, though not back to its pre-devaluation level, until trade volumes adjusted in response to the price changes. If we suppose that happens simultaneously in all industries, at time t_2 , we would get a path for the trade balance shown by the histograms: the final portion is positive provided the Marshall – Lerner condition is satisfied. But since not all trade contracts have the same time profile, in reality these three phases get muddled up, and the path of the trade balance is shown instead by something like the thick smooth curve. With a good dose of imagination it is possible to turn that in to a J shape (Mehmet Ugur, 2002).

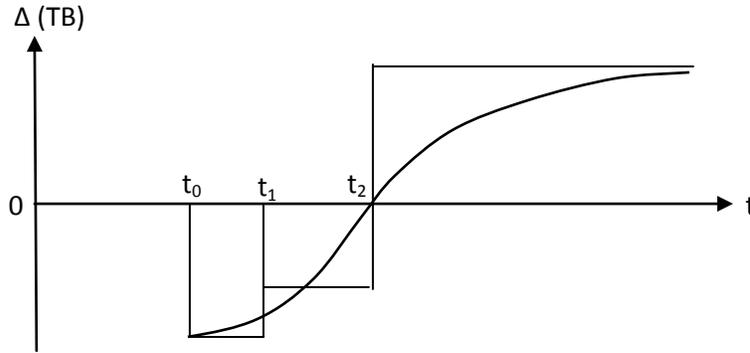


Fig 2.5 J – curve

All the above investigations are based on the assumption that the price level in both trading countries is unchanged. However, the real world allows for changes in local prices in both countries. This gives rise to the following two generalizations. First, recognition must be given to real exchange rate ep^*/p , which really determines the degree of competitiveness of a country in the global (or in the trading countries market, for simplicity) market. Devaluation leads to higher exports and more import substitutes only if ep^*/p increases. But if p has increased in relation to p^* , the devaluation leaves the ratio unchanged, by which the trade balance is just prevented, and nothing else, from deterioration. Such devaluation may be said to have the effect of neutralizing excess domestic inflation (Mehmet Ugur, 2002).

Secondly, due recognition must be given to the triggering effect of devaluation on inflation. For example, one of the direct effects of devaluation is a rise in import prices. Imported final goods have an increased price. The price of domestic products but used imported inputs or intermediate goods also goes up. The prices of exports and import substitutes are likely to increase since they are homogeneous product whose prices are set in the world market. Because workers are now faced increased prices, wages tend to rise through labor union's struggles.

These show how soaring inflation comes to the surface on the economy due to devaluation which challenges the efficacy of devaluation (Mehmet Ugur, 2002).

2) The Absorption approach

In 1952 Sidney Alexander, argued that the elasticities approach tended to be superficial at the ease of correcting a deficit by devaluation. This is not due to the level of price elasticities of demand and supply of both exports and imports, but due to its shortcoming from viewing it from the side of excess income versus expenditure. From the national income identity, we can say that:

$$TB = Y - A, \quad \text{or} \quad \Delta(TB) = \Delta Y - \Delta A$$

The proposition is that devaluation must, in order to improve the trade balance; it must raise the level of real income or reduce the level of expenditure. But why this is expected is the question to be answered first (Mehmet Ugur, 2002).

The change in expenditure comes either from the change in income, that is called induced expenditure, or from reasons out of this. The former can be written as $c\Delta Y$, where c is the marginal propensity to consume or absorb. The second part is the direct effect on absorption which may come as a result of many changes other than income. Since $\Delta A = c\Delta Y + A_d$:

$$\Delta(TB) = (1 - c) \Delta Y - A_d$$

Thus the analysis on the effect of devaluation on the trade balance should be preceded by investigations on both of its effects on income and its direct effect on absorption (Mehmet Ugur, 2002).

The effect of devaluation on income comes from where if increased demand for the country's exports and import substitutes induce an increase in the supply. But where does the increase capacity is supposed to come from? The 'idle resource effect' as is said by Alexander answers it as if the economy has an unused capacity the increase in supply emerges from it (Mehmet Ugur, 2002).

The other effect on income arises from, as Alexander noted, the change in the terms of trade. Whether devaluation improves or worsens terms of possibly depends on the type and degree of elasticities of supply and demand curves. Simply put, whether the terms of trade worsens in the elasticities model depends on

$$\varepsilon_x, \varepsilon_m > \eta_x, \eta_m$$

that is, that the product of the supply elasticities exceeds the product of the demand elasticities. This means that devaluation tends to reduce real income, which for constant real absorption implies a bigger trade deficit

In subsequent debate, Fritz Machlup added a third channel through which devaluation might influence real income, the resource allocation effect. He argued that devaluation permitted a relaxation of controls and restrictions, which typically produce microeconomic distortions and devaluing to maintain the same average incentive to export (or produce import substitutes) could be expected to improve allocative efficiency and thus increase real income (Mehmet Ugur, 2002).

Now it is important to look at how and why devaluation might be expected to have an effect on domestic absorption arising from the changes in income and presented as the marginal propensity to absorb. We can peak two fundamental ways through which the effect is

transmitted. The first one is the monetary channel. As is said previously, devaluation induces price rise. This in turn reduces the real value of money (suppose there is no other monetary treatment such as increase in money supply). Consequently, the level of interest rate raises leaving investment smothered (notice that the traditional Keynesian analysis is applied here). This prompts consumers to try to restore their liquid asset by curbing consumption (Mehmet Ugur, 2002).

The second way through which devaluation puts an effect on consumption is that of the distributional channel by which government and the public involves in it in terms of profits and wages. Suppose the country follows progressive tax system. If we think of a one-time devaluation occurred. Tax payers move into higher tax brackets. While the real value of expenditures remains as it was, inflation leads to surplus in the real value of government budget, meaning income is reallocated from the private bloc to the public bloc. This cuts absorption since it is assumed that the public spends more independently of its short run revenue (Mehmet Ugur, 2002).

But, how happens for subsequent devaluations? The Olivera–Tanzi effect shows that government expenditure might increase more than its proportionate in response to higher inflation which makes the income redistribution comes from the public to the private. If the government replies for the higher public deficit by some sort of printing money this calls of a huge accelerating inflation (Mehmet Ugur, 2002).

If we look at the effect of subsequent devaluation from the point of profit-wages position, the impact of higher prices on wages is indirect and lagged. According to Marxist

saving function, i.e., capitalist do more savings than workers, income flows from wages to profits as a redistribution. This in turn reduces absorption.

As we look back to what presented above, the real effect of devaluation on trade balance is rather ambiguous. For example, take a country with an initial stage of full employment so that output/income cannot change as a result of higher external demand. This ends up with negative terms of trade, and positive reallocation of resources. The net effect is, thus, not clear. As a conclusion in order for devaluation to improve the balance of payments, it must be followed by other policy measures, such as, for example, by discretionary fiscal and monetary policies for initially full employment level of economy (Mehmet Ugur, 2002).

3) The Monetary approach

The fundamental ground for the justification of the monetary approach to exchange rate is that since, by definition, exchange rate is the ratio of the relative prices of two countries' currencies, it is sensible to analyze it from the point of view of stocks of and the demand for the two currencies.

The monetary model, by its chronological order can be classified in to two: the early, flexible-price and the later, fixed price monetary models. Assumptions of continuous purchasing power parity and existence of stable money demand functions for the domestic and foreign economies are the two essential grounds for the flexible-price monetary model (Mehmet Ugur, 2002).

The demand for money might be assumed to depend on real income, y , the price level, p , and the level of the interest rate, r . The basic monetary model equation arises from equilibria in the domestic and foreign country, which are, respectively, given by:

$$m_t^s = p_t + \phi y_t - \lambda r_t \quad \text{and}$$

$$m_t^{s*} = p_t^* + \phi y_t^* - \lambda r_t^*$$

Traded goods market arrives at equilibrium when there are no incentives for further profits, i.e., when the prices in a common currency are equalized. In other words, the PPP is existed. The PPP condition can be presented as:

$$S_t = p_t - p_t^*$$

where s_t is the logarithm of nominal exchange rate (domestic price of foreign currency). Thus the logarithm of the real exchange rate, q_t , say ($q_t \equiv S_t + p_t - p_t^*$), is a constant if PPP holds continuously. The world price p_t^* is exogenous to the domestic economy, being determined by world money supply. The domestic price level is determined by the domestic money supply and hence, the exchange rate is determined by relative money supplies. Inserting the monetary equilibria equations into the PPP condition gives the equation for the basic flexible-price monetary model:

$$s_t = (m^s - m^{s*})_t - \phi y_t + \phi^* y_t^* + \lambda r_t - \lambda^* r_t^*$$

Something sensitive can be noticed, from the above equation, that:

- ✚ An increase (decrease) in the domestic money supply, relative to the stock of foreign money will lead to a rise (fall) in s_t : that is, a fall (rise) in the value of the domestic currency in terms of the foreign currency.
- ✚ An increase in domestic output, appreciates the domestic currency (s_t falls).
- ✚ A rise in domestic interest rates depreciates the domestic currency (in the Mundel-Fleming model; this would lead to capital inflows and, hence, an appreciation).

In order to comprehend these, the role of relative money demand should be taken into account of flexible-price model.

A relative rise in domestic real income creates an excess demand for the domestic money stock. As agents try to increase their (real) money balances, they reduce expenditure and prices fall until money market equilibrium is achieved. As prices fall, PPP ensures an appreciation of the domestic currency in terms of the foreign currency. An exactly converse analysis explains the response of the exchange rate to the interest rate- an increase in interest rates reduces the demand for money and so leads to a depreciation (Mehmet Ugur, 2002).

Sticky-price and real interest differential monetary models

The facts of the real world reveals that the major assumption of the flexible-price mode, i.e., the continuous existence of PPP. Recent experiences show that real exchange rates of many major currencies have been given a wide range of variations. Therefore, the second generation of the monetary model assumes, as its name indicates, that the change in price is sluggish leaving the nominal and real rates of exchange overshoot the long-run equilibrium (PPP) levels. The intuition is presented as follows:

Assume the reduction in money supply. The sluggishness of prices leaves the real money supply fall. As a consequence, interest rate rises in order to clear the money market, and, then, capital inflow takes place making an appreciation of the nominal exchange rate, and also the real exchange rate (Mehmet Ugur, 2002).

If we can see think of the responses of foreign investors, the change in the rate of exchange makes them think gains from investments are now reconverted into their local

currency affects their stock of foreign exchange. However, as far as the gains from capital market (the interest rates gap) exceeds the loss in foreign exchange (the expected rate of depreciation), risk neutral foreign investors will continue buy the county's assets. The short-run equilibrium is where the expected rate of depreciation equals the interest differential). On order for the expected depreciation rate to equal a non-zero interest differential, its value must exceed the long-run (PPP) equilibrium level. In the medium run the domestic price level goes down slowly due to the reduction in money supply. In the money market, the domestic interest rate begins to fall. Then exchange rate begins to depreciate and finally converge with the long-run (PPP) equilibrium level. Thus the model resolves the apparent paradox that countries with high interest rates tend to have expected depreciation of their exchange rates as that a sharp appreciation of exchange rate is followed by a slow expected depreciation in order to cover the gap in interest differentials.

The monetary models, in general, focuses on the money market assuming perfect substitutability of domestic and foreign non-money assets. However, as the following model demonstrates, this is not the case of the real world (Mehmet Ugur, 2002).

4) Portfolio balance model

Like the monetary models, equilibrium (at least the short-run) comes from the interaction of demand and supply of foreign exchanges. The models give the rate of exchange a prominent role in the current account component of balance of payments. Then, surplus (deficit) in the current account stands for a rise (fall) in net domestic holdings of foreign assets. Its effect on the level of wealth, in turn, affects the level of demand and then the rate of exchange. Thus, the portfolio balance model is a short-run analysis and an intrinsically dynamic model of

exchange rate adjustment (the long-run equilibrium, where no tendency of wealth level to move over time) which consists of the current account, the price level, and the rate of asset accumulation (Mehmet Ugur, 2002), Pon.A. Yotopoulos, 1996).

The simplest version of the model divides net financial wealth of the private sector (W) into three. These are money (M), domestically issued bonds (B) and foreign bonds dominated by foreign currency (F). Assuming free floating, a current account surplus must be exactly matched by a capital account deficit, (i.e., capital outflow, and hence an increase in net foreign indebtedness to the domestic economy) the current account must reduce the rate of accumulation of F over time (Mehmet Ugur, 2002).

To put it algebraically, where r and r^* are domestic and foreign interest rates, respectively:

$$W = M + B + SF$$

$$M = M(r, r^*)W \quad M_r < 0, M_{r^*} < 0$$

$$B = B(r, r^*)W \quad B_r < 0, B_{r^*} < 0$$

$$SF = F(r, r^*)W \quad F_r < 0, F_{r^*} > 0$$

From the above equations it is important to notice that the scale variable of the model is the level of wealth, W .

The model thus provides a simple framework for analyzing the effect of, for example fiscal and monetary policy on exchange rate. Thus the contractionary monetary policy (a fall in M_0 reduces nominal financial wealth (through equation 10), and so reduces the demand for both domestic and foreign bonds (through equation 12 and 13).

As foreign bonds are sold, the exchange rate appreciates (the foreign price of domestic currency rises). The effect of fiscal policy (operating through changes in B) on the exchange rate are more ambiguous, depending on the degree of substitution between domestic and foreign bonds (Mehmet Ugur, 2002).

2.2 Empirical Literatures

The growing deficit in the balance of payments of many advanced and developing countries has renewed the interest of economists and policy makers in the impact of exchange rate devaluation on the balance of payments. Exchange rate devaluation has long been a controversial issue among researchers. Such disputes stem from both theoretical and empirical studies. The previous chapter entails the theoretical work such as the "elasticity approach" initiated by Bickerdike (1920); the "absorption approach" launched by Alexander (1968); and the "monetary approach" developed by Hahn (1976), Johnson (1976), and Mundell (1968). When we come to the empirical studies, they can be broadly divided into two groups. The first finds that devaluation successfully improves the balance of payments deficit. The second group cannot corroborate the positive effects of devaluation on the balance of payments, arguing that since exports and imports are relatively insensitive to price and exchange rate changes, especially in LDCs and semi-industrialized countries, devaluation can further worsen balance of payments deficits. Let's have an insight on this issue as the following.

One of the studies done over the subject is that of Lawrence Edwards and Owen Willcox titled "Exchange rate depreciation and the trade balance in South Africa". The study basically uses the elasticity approach to analyse the responsiveness of the country's exports and imports to exchange rate movements. It draws upon the Bickerdike-Robinson-Metzler (BRM) condition which defines a set of necessary conditions on the size of import demand, import supply, export demand and export supply elasticities for a depreciation to improve the trade balance. To estimate these elasticities, the Johansen Maximum Likelihood procedure for multivariate cointegration analysis is used. The econometric estimates of the export and import functions suggest that depreciation improves the trade balance. The long-run export supply elasticities

range between -1.05 and -1.12 are similar for manufacturing and merchandise goods (excluding gold). Holding all other variables constant, this implies that depreciation raises exports by 1.05 to 1.12 % in the long run. The implication is that a depreciation of the currency can improve export performance, not through lowering the foreign currency price of South African exports, but through raising the return to export production via increased prices. The econometric estimates of the export and import functions support that depreciation improves the trade balance.

In contrast, Frank W. Agbola studied on the issue on his journal, “Does Devaluation Improve Trade Balance of Ghana?”. The study is done with the monetary model which is built on the money market equilibrium, and by employing annual data spanning the period 1970 and 2002. The paper using the Johansen MLE multivariate co-integration procedure reveals that Ghana’s trade balance and key determinants are co-integrated, and thus share a long-run equilibrium relationship. If we turn to the central theme of the paper, the coefficient of the exchange rate variable, nominal exchange rate (NER), which captures the impact of devaluation on trade balance of Ghana, is negative. As pointed earlier the coefficient of the explanatory variables in levels of the Stock-Watson dynamic OLS (DOLS) model captures the long-run multiplier effect on trade balance of the change in NER. The coefficient of the NER variable is negative and statistically significant at a 1 percent level. This indicates that devaluation of the cedi worsens trade balance of Ghana in the long run. As a conclusion the study suggests for policymakers who want to anticipate future changes in the trade balance in response to devaluation of the Ghanaian cedi and other monetary variables, that despite the deregulatory reforms, the Ghanaian economy is still rather weak to respond to market signals so as to use the exchange rate policy to manage its external balance.

Contractionary versus expansionary effect of devaluation on national economy is studied by Ilker Domaç as the case of Turkey. The study uses double steps to reach at a concluding ground about the effect of devaluation on real output. These are first, the degree by which real output growth responds to given underlying demand shock. Second, the degree by which aggregate demand curve shifts in response to unanticipated changes in the exchange rate. The final impact of unanticipated devaluation on output is evaluated in two steps. First, the response of real output growth to given underlying demand shock is investigated. Second, the size of the shift of the aggregate demand curve in response to the underlying demand shock caused by unanticipated change in exchange rate is analyzed. The final impact of unanticipated devaluation on output is discovered to be moderate, due to the relatively small increase in aggregate demand in response to an unanticipated devaluation. Anticipated devaluations, on the other hand, are found to be contractionary in the first year and expansionary in the second year, but statistically insignificant in affecting real economic activity in Turkey. The empirical findings, therefore, do not lend support to the existence of contractionary devaluation hypothesis in Turkey. The empirical results highlight the positive impact of unanticipated devaluation on real economic activity.

When we look at sector-specific investigations of the effect of depreciation on export supply, the study produced by Alousius Ajab Amin titled “The Effects of Exchange Rate Policy on Cameroon’s Agricultural Competitiveness” must be mentioned. The major agricultural export products used in the study are cocoa, arabica and robusta coffee. Estimates show that a 10% depreciation of RER stimulates about 1.0% increase of cocoa relative to the price of tradables. However, the study concludes that the real exchange rate policy should be complemented with other policy measures such as the government must increase expenditure on

rural and export infrastructure, lower trade taxes and maintain a realistic exchange rate, yet looking at the fiscal deficits.

The controversy relies on how the data is gained, how and what model is selected and what major variables are included into the investigation of the effect of devaluation on output. According to the analytical review of J. Saul Lizindo and Peter J. Montiel, what is of interest is a comparison of the path of some measure of domestic real economic activity-real output, real income, or employment-in the absence of devaluation, with the corresponding path implied by a given nominal devaluation. This analysis requires the (necessarily numerical) solution of a fully specified dynamic model that incorporates the several channels of transmission. Based on the findings of the study, given the production technology and the stock of capital in the traded-goods sector, the domestic supply of traded goods depends on the nominal wage, the price of imported inputs, and the real interest rate measured in terms of traded goods, which affects the cost of working capital. The response of the nominal wage to devaluation will in general depend on the properties of labor contracts in the economy as well as on the parameters of labor demand, especially the sectoral allocation of the labor force and the degree of substitutability between labor and imported inputs. In general, it seems reasonable to expect an increase in the nominal wage that is less than in proportion to the amount of devaluation. By contrast, the price of imported inputs will rise exactly in proportion to the devaluation. If the nominal wage rises less than in proportion to the devaluation and effects on working capital costs can be treated as being of a second order of magnitude, then the vertical shift of the demand curve for traded goods is likely to exceed that of the supply curve, and traded-goods output can be expected to expand.

The other worth-noting suggestion is given by Carmen M. Reinhart on the paper “Devaluation, Relative Prices, and International Trade – Evidence from Developing Countries”. The study used a simple model of developing country foreign trade, called imperfect substitutes model. The model fundamentally assumes that neither imports nor exports are perfect substitutes in consumption for domestic non-traded goods. Coming to the empirical work of the study, the data used are annual and cover the period 1968-92. The study is underlies on the assumption that Industrial countries' consumption of developing countries' exports depends on permanent income and the relative price of the exportable. The study involves the time-series properties of the relevant variables through the standard unit root tests: the Dickey-Fuller (DF) and Augmented Dickey-Fuller (ADF) tests (Dickey and Fuller). The analysis suggests that while industrial-country income elasticities are well above their developing-country Asian and Latin American counterparts, suggesting that in a scenario of balanced growth the developing country trade balance should improve, this is not the case for Africa. The high primary commodity content of African exports probably accounts for this result.

Taggart J. Brooks studied on currency depreciation and the trade balance focusing on the elasticity approach and the validity of the Marshall – Lerner condition using a bilateral trade situation of U.S.A versus other 6 trading countries. Johansen's method is applied to the estimation of the import and export demand equations, along with several other co-integration techniques. The results indicate that the US satisfies the M-L condition on a bilateral basis with all of the countries except Canada. Therefore a devaluation of the dollar vis-à-vis the other 5 currencies should improve the US bilateral trade balance with those countries.

If we think, however, about that of the least developed countries, a study produced by Thorvaldur Gylfason titled “Does Devaluation Make Sense in the Least Developed Countries?” using algebraic illustrations instead of econometric analysis due to the limited quantity and poor quality of economic data for virtually all the countries included in the sample. The empirical results reveal that devaluation can be an effective tool for rectifying current account deficits in the least developed countries. According to the empirical simulations, a 10% devaluation improves the current account by 0.7% to 2.8% of GNP in the short to medium term, or by 1.5% of GNP on average, in the sample of 12 countries studied. The conclusion is that devaluation can be an efficient and appropriate method of reducing current account deficits in the least developed countries, provided (a) that it is accompanied by domestic monetary restraint; (b) that real wages are permitted to fall at least enough to prevent employment from declining; and (c) that at least sufficient foreign capital is procured (preferably on concessional terms) to avert a reduction of GNP. In general, however, the empirical magnitudes involved in the analysis indicate that there is no way to avoid a small reduction of real wage earnings in favor of profits temporarily, if devaluation is to have its intended positive effect on the current account. Specifically, if the three conditions listed above are satisfied, the detrimental side effects of 10% devaluation could be limited to a temporary 2%-3% average reduction of real labor income in the 12 countries under study. Although not large, such a decrease could impose serious economic hardship on wage earners if the foreign capital were not used to compensate them for the income loss.

The other study which is appeared important to be mentioned here is that of Marc A. Miles entitled “The Effects of Devaluation on the Trade Balance and the Balance of Payments: Some New Results”. The trade balance equation is an absorption model concentrating on factors that

affect domestic expenditure relative to domestic output. What is new in this work is that it employs the logic that for the world as a whole, the sum of all trade balances or the sum of all balance of payments is constrained to be zero. For each export in the world there must be an equivalent import. Thus, the trade balance and balance of payments errors for all countries in the world are not independent. The remaining question is what effect any covariance of errors will have on the estimated coefficients. The effect of the covariance is measured through the use of seemingly unrelated regressions. According to the results coming out of the seemingly unrelated regressions the residuals indicate a small improvement in the trade balance in the year following devaluation. But this improvement is small compared with the deterioration of the trade balance in the year of devaluation or succeeding years. On the other hand, the balance of payments, however, has a clear, significant pattern, worsening in the years preceding devaluation and then improving in the year following devaluation. These results have at least two implications. First, they generally support that devaluation does not improve the trade balance but improves the balance of payments. The residuals of the trade balance equations excluding the exchange rate are on average positive in the year following devaluation. In isolation this result implies that the trade balance "improves." But the positive residuals in that year are smaller in magnitude than the negative residuals of the year of devaluation. In other words, the improvement is not sufficient to offset the initial worsening and there is no short-run net improvement. The second implication is the essentially monetary nature of the adjustment to devaluation. While many have suggested that devaluation will be accompanied by changes in real variables such as the trade balance, the present tests can find little evidence of such changes. In particular, the behavior of the trade balance, combined with the tests on the monetary variable, provide little evidence of a real balance effect affecting trade. In any case, since devaluation does not improve the trade balance but improves the balance of payments, by

definition the capital account must be improving. Devaluation therefore seems to cause only a simple portfolio adjustment. Rather than affecting the size of the portfolio, and thus net wealth, devaluation causes a simple excess demand for money and excess supply of bonds.

3. Data Analysis

3.1.1 Developments in Exchange Rate and Export of Hides and Skins of Ethiopia

In order to rectify the structural distortions of domestic prices and costs of economic activities, various countries (especially developing countries) introduced the foreign exchange auction system of gradual depreciation of their respective currencies as a transitory mechanism of making their exchange rate to be market determined from the pegged exchange rate regime. Moreover, this system is preferred particularly to improve their balance of payments position and to absorb the prevailing parallel market at their end. Accordingly, the Ethiopian economy has also passed various stages of situations until it reached its present scenario.

The time before the introduction of reformation of the exchange rate system in 1992 can be characterized by purely government-controlled type of exchange rate system where unrealistic exchange rate and an administrative system of foreign exchange allocation have been maintained. The official exchange rate of birr had remained unchanged of the period 1973-1992 at 2.07 per USD. As a result, the inefficient export sector, coupled with the restrictive financial and trade policies, could not sufficiently accommodate the rising industrial and agricultural demand for imports of factor inputs. Hence, the demand for hard currency excessively exceeded its supply and it became virtually impossible to allocate the required foreign exchange even for the imports of some strategic inputs like petroleum in the former administrative system of allocation.

After the down fall of the Derg regime, on October 1, 1992, as part of the comprehensive economic reform program, which was based on the technical and financial support of the IMF and the World Bank, a massive initial devaluation of the birr from 2.07 to birr 5.00 per USD,

and subsequently on May 1, 1993 foreign exchange auction system was introduced. Shortly after, foreign exchange retention scheme for exporters was also introduced in 1993. These measures are part of an ongoing process of moving from a fixed exchange rate system to a floating one based on the objectives to remove cost-price distortions, encourage exports and efficient import substitution, and eliminate foreign exchange rationing. At the inception of exchange rate reform, a two-tier system was introduced. The official exchange rate is one of the rates that were determined by the monetary authority NBE. The rate was applicable to a limited range of transactions, which were selectively specified by the government such as imports of petroleum, pharmaceuticals, fertilizers, official debt services and government contributions to international organizations and its foreign offices, the managed float exchange rate was the second prevailing on which was quoted from the fortnightly foreign exchange auction and used for all external transactions other than the ones mentioned above and except goods included in the negative list. In the process of establishing a scarcity price for foreign exchange through reforms, the NBE also underwent the unification of the official exchange rate of the birr and the marginal rate arising out of the fortnightly foreign exchange auctions beginning from July 25, 1995. Henceforth, the marginal rate arising from each auction is applicable to all foreign exchange transactions to which the official rate and the marginal rates (managed floating rates) used to apply. The unified rate is believed to have an institutional support for the achievement of an appropriate exchange rate and for the gradual liberalization of the country's exchange and trade system. Moreover, in line with this policy measures a law has been passed for the establishment of foreign exchange bureaus. And the inter-bank foreign exchange market is further under process to realize the free-floating exchange rate system.

Having given an introductory note on the policy measures undertaken so far to realize the development of foreign exchange market, the next part emphasizes on the exchange rate policy reforms undertaken, particularly devaluation/depreciation of birr.

As indicated previously, the Ethiopian birr had been pegged to the US dollar for over several decades, until the massive devaluation of the birr took place in October 1992, in line with Ethiopian adoption of the structural adjustment program (SAP). This considerable appreciation of birr against other currencies in nominal terms and the volatility in Ethiopia's export performance resulted in a substantial erosion of the country's external competitiveness.

In a view to stabilize the above distortions, the birr was devalued by about 58 percent in dollar terms from birr 2.07 to birr 5.00 per USD. The government continued its reform on the exchange rate regime and introduced the auction system in May 1993 in parallel to the official exchange rate system. As stated earlier, the two rates were meant to serve distinct markets until the official rate was suppressed by the marginal (auction) rate following the unification of the following the unification of the rates on July 25, 1995. The official (devalued) rate was applicable to government transaction and imports, and this lied between the simple average of the buying and selling rates of the commercial banks. The auction rate was applicable for all commercial transactions.

Onwards, other foreign exchange related reforms were made, such as:

- Abolition of the negative list excepting on used cloths, however, the customs restriction list due to health and safety purposes, still prevails.
- Establishment of foreign exchange bureau on October 1996 to engage in all approved spot/cash, current account transactions up to USD 1200 per trip to Ethiopia.

- The inter-bank foreign exchange market establishment which came in to force as of sept 30, 1998. However, it is reported that such reform didn't achieve the desired objective for the reason that the financial market structure is almost monopolized by the commercial bank of Ethiopia, and the approved limit to retain foreign exchange reserve for the private banks is too small to engage in the inter-bank foreign exchange market. As a result, they were forced to use their foreign exchange reserve only to effect payments for their international transactions. Hence, no transaction has been effected between the banks for the coming three years.
- Introduction of the retention and utilization of export earnings and inward remittances scheme which was an amendment of the previous directives.

If we look at the movements in the rate of exchange, the following table presents pattern of movement of the exchange rate starting from where the fixed exchange rate system was abolished, that is from 1992 up to 2008 E C.

From the table it can be understood that the birr depreciates smoothly but continuously; during the period under study (1992-2008), the exchange rate gradually depreciates from 5.00 birr to 11.2 birr per USD. This means the birr is devalued more than double.

Time	Rate of Exchange (birr/USD)	Time	Rate of Exchange (birr/USD)	Time	Rate of Exchange (birr/USD)
1992	5.1	1998	8.12	2004	8.65
quarter 1	5	quarter 1	7.27	quarter 1	8.64
quarter 2	5	quarter 2	7.5	quarter 2	8.64
quarter 3	5	quarter 3	7.9	quarter 3	8.65
quarter 4	5.1	quarter 4	8.12	quarter 4	8.66
1993	6.22	1999	8.22	2005	8.69
quarter 1	5.1	quarter 1	8.12	quarter 1	8.67
quarter 2	5.86	quarter 2	8.13	quarter 2	8.68
quarter 3	6.06	quarter 3	8.16	quarter 3	8.68
quarter 4	6.22	quarter 4	8.22	quarter 4	8.69
1994	6.32	2000	8.46	2006	8.79
quarter 1	6.25	quarter 1	8.24	quarter 1	8.69
quarter 2	6.25	quarter 2	8.29	quarter 2	8.71
quarter 3	6.27	quarter 3	8.4	quarter 3	8.83
quarter 4	6.32	quarter 4	8.46	quarter 4	8.92
1995	6.35	2001	8.56	2007	9.24
quarter 1	6.3	quarter 1	8.49	quarter 1	9.03
quarter 2	6.32	quarter 2	8.55	quarter 2	9.07
quarter 3	6.32	quarter 3	8.56	quarter 3	9.31
quarter 4	6.35	quarter 4	8.56	quarter 4	9.55
1996	6.8	2002	8.58	2008	10.42
quarter 1	6.39	quarter 1	8.56	quarter 1	9.66
quarter 2	6.43	quarter 2	8.57	quarter 2	9.86
quarter 3	6.64	quarter 3	8.58	quarter 3	10.31
quarter 4	6.8	quarter 4	8.59	quarter 4	11.2
1997	7.06	2003	8.61		
quarter 1	6.81	quarter 1	8.6		
quarter 2	6.86	quarter 2	8.61		
quarter 3	6.95	quarter 3	8.62		
quarter 4	7.06	quarter 4	8.63		

Table 3.1.1 Exchange rate of birr/USD. Source: National Bank annual bulletins

Like most developing countries, a large proportion of the country's total exports consist of age-old traditional agricultural exports; in Ethiopia these account for more than 95% of the total foreign exchange earnings with heavy dependency on a single product for foreign exchange earnings. On the other hand, leather exports constitute an important component of revenue in the country. In fact, Ethiopia is home to an estimated 41 million cattle, 26 million sheep, and 23 million goats, making it Africa's largest holder of livestock and the 7th largest in the world. Sheep and goat skins represent the bulk of Ethiopian leather production, giving an estimated 16 million skins annually.

Leather exports constitute an important component of revenue in Ethiopia. The country represents less than one percent of the world trade in leather, exporting 8.3 million sheep skins and 7 million goatskins annually, earning about USD 90 million from export of leather skins. Comparing Ethiopia's export earnings to the USD 46 billion that is generated by the world trade in leather, one can see just how small of a player Ethiopia is in the international trade of leather. The table and graphs presented below reveals the fact that the country's export of hides and skins are growing both in value and volume.

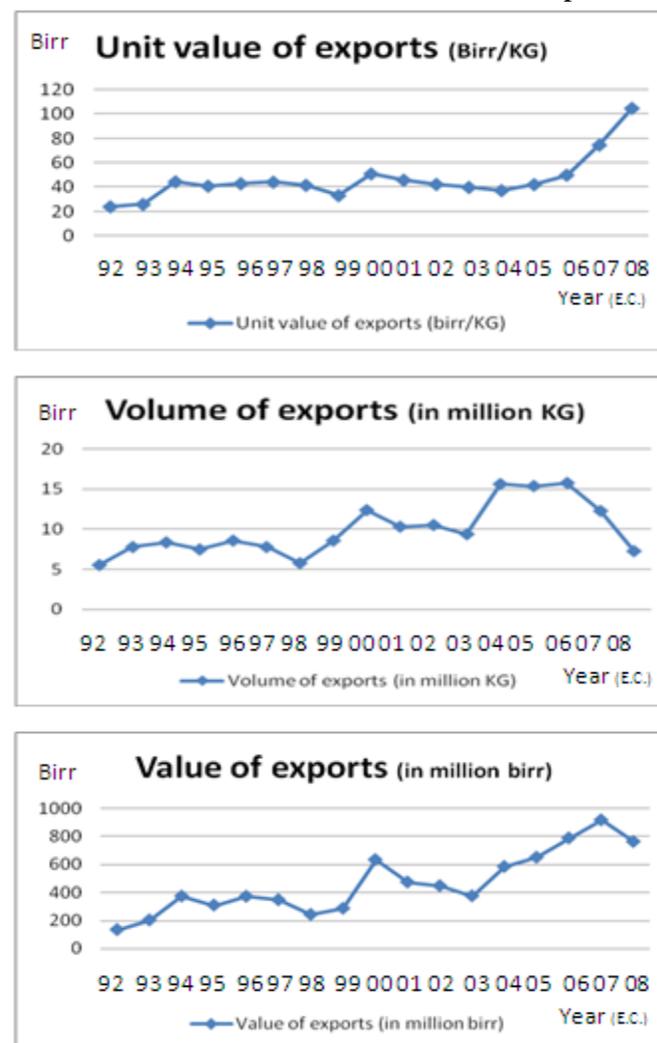
Some of the drops in both values and volumes of the exports are subjected to a decreased price for leather in the international market and the deterioration of the raw material quality. The export price of hides and skins in the international market varies over time. Partly this is due to changes in the demand structures for products produced using hides and skins. The other major challenge for the export performance of hides and skins of the country is the quality of raw hides and skins. Almost all rural Ethiopian households and some urban dwellers raise livestock, which number close to 40 million. The rural population of Ethiopia is vulnerable to harsh conditions including drought, malnourishment, and lack of basic resources. These in turn, highly affect the quality of raw hides and skins.

Considering the development potential and economic importance of hides and skins, the government has launched different development programs aimed at increasing the supply and improving the quality of the raw material. The interventions include regular extensions and packages, project based interventions like slaughterhouse operation and management, institutionalization of leather industry developments.

Table 3.1.2 Summary of export performance of Hides and Skins

YEAR	Unit value of exports (birr/KG)	Volume of exports (in million KG)	Value of exports (in million birr)
92	24.13	5.57	134.51
93	26.08	7.8	203.61
94	44.54	8.38	373.54
95	41.04	7.5	309.7
96	43.04	8.6	372.25
97	44.28	7.8	347.69
98	41.73	5.8	243.05
99	33.29	8.6	286.45
0	51.07	12.4	633.75
1	45.91	10.33	474.42
2	42.49	10.54	448
3	39.98	9.4	375.84
4	37.41	15.64	585.18
5	42.3	15.39	651.33
6	50.03	15.77	789.16
7	74.6	12.29	917.53
8	104.71	7.29	763.68

Fig. 3.1 Export performance of Hides and Skins Source: National Bank's annual bulletin and Own computations



3.2 The Supply Response Model and Econometric Analysis

One of the most important issues in the economic development is supply response since the responsiveness of supply to economic incentives determines the sector's contribution to the economy. Originally, in fact, the concern of supply response analysis is the response of domestic agricultural production to changes in output and input prices, which may be policy-induced.

With this insight, the response of export supply of hides and skins to changes in the relative price of hides and skins takes the place to be diagnosed. Changes in the Ethiopian export supply of hides and skins are subjected to several factors among those some are used as explanatory variables in this study. In General the econometric model used is the following kind:

$$ExpHS_t = \alpha + REER_t + CredHS_t + EmpHS_t + e$$

Where: $ExpHS_t$ is the export volume of hides and skins in the year t;

$REER_t$ is the real effective exchange rate of birr in the year t;

$CredHS_t$ is the outstanding credit loans given for hides and skins in the year t;

$EmpHS_t$ is the level of skilled labor within the sector in the year t; and

e is the error term.

As we have seen in the previous chapter, in order for the sector to give the expected contribution in building the national economy, capital shortage for the sector is one of the major issues to be resolved. The other determinant taken through the study is the level of possession of skilled manpower by the sector. Many empirical works revealed that the major challenge of the sector is that of skilled labor.

Data set up:

The regression uses 16 years time series data for estimation ranging from 1992, where the rigid system of exchange rate determination has come to an end, up until 2007. The explained variable, the volume of export of hides and skins, specifies the countries performance of export supply of hides and skins in millions of kilogram.

Regression results:

The table below summarizes the major results of the time series regression focusing on the unit root and co-integration tests:

Dependent variable: Volume of Export (Hides and Skins)

Augmented Dickey-Fuller test for unit root Number of obs = 15

----- Interpolated Dickey-Fuller -----

Test	1% Critical	5% Critical	10% Critical
Statistic	Value	Value	Value
Z(t)	-1.833	-3.750	-2.630

MacKinnon approximate p-value for Z(t) = 0.3643

D.exphs	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
exphs					

L1.	-.4334042	.2364813	-1.83	0.092	-.9486527	.0818443
LD.	.2268834	.3017682	0.75	0.467	-.4306132	.8843799
_cons	4.378694	2.521132	1.74	0.108	-1.114381	9.87177

Augmented Dickey-Fuller test for unit root Number of obs = 15

----- Interpolated Dickey-Fuller -----				
Test	1% Critical	5% Critical	10% Critical	
Statistic	Value	Value	Value	
Z(t)	0.175	-3.750	-3.000	-2.630

MacKinnon approximate p-value for Z(t) = 0.9708

D.rerr	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
rerr					
L1.	.018714	.1069641	0.17	0.864	-.2143407 .2517688
LD.	.0723921	.3106599	0.23	0.820	-.6044777 .7492619
_cons	.1119669	.8820265	0.13	0.901	-1.809804 2.033738

Table 3.2.1 Results of unit root tests

We fail to reject unit root hypothesis for both volume of export of hides and skins, real exchange rate. Therefore, we can conclude that there is no long run tendency for exchange rate and volume of exports to settle down to an equilibrium track.

When we come to the co-integration analysis, the following table of results summarizes using the popular Durbin – Watson statistics.

estat dwatson

Durbin-Watson d-statistic(4, 17) = 1.591698

Augmented Dickey-Fuller test for unit root Number of obs = 15

----- Interpolated Dickey-Fuller -----

Test Statistic	1% Critical Value	5% Critical Value	10% Critical Value
Z(t)	-2.905	-3.750	-2.630

MacKinnon approximate p-value for Z(t) = 0.0447

-----+-----

D.el	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
el						
L1.	-.9996881	.3440857	-2.91	0.013	-1.749387	-.2499897
LD.	.2773068	.2743391	1.01	0.332	-.3204268	.8750404
_cons	-.0908437	.5544236	-0.16	0.873	-1.298829	1.117142

4. Conclusion and Recommendations

The findings of the paper reveal that exchange rate is one but not the top factor that affects the export volume of hides and skins. By its nature the production of hides and skins is subject to many other factors including the weather conditions, the farmers' attitude, government efforts for improved technology disseminations, type of sheep and goat bear, and many many other which are not included for the estimation.

The descriptive analysis gives as a brief insight that in line with the logic of existence of devaluation, the level of export of hides and skins has been increasing, but not at a consistent rate due to other factors. As it is explained in the review of literatures the positive effect of devaluation may appear to exist after some sufficient time lag, which is the enlightenment of the J – curve.

On the other hand, the econometric analysis incorporated some factors on top of the real exchange rate. The time period used for estimation may not be beyond the critical sufficient for a more than convincing estimation results, but can give some insight. Real exchange rate is one of the factors that can affect the level of export of hides and skins, but there is no guarantee for its intended long run effect that the change in real exchange rate definitely positively affects the level of export of hides and skins.

It is worth-mentioning that developing countries policy makers are need to be wise in choosing a policy alternative, especially that of the macro economy. The study provides the following policy recommendations that are implied by the findings:

- Changes in the rate of exchange of birr has positive effects on export level of hides and skins if and only if there are other compatible policy measures both in the macro and micro economic contexts. Since the export is not totally a question and answer of macroeconomic policy measures, and there are micro economic factors like efficiency – improving production techniques, greater enforcement of anti – trust laws among firms within the sub sector.
- Financial liberalization can give a better help for firms expansion and potential entrants’ initial capital availability. Though it is appreciated that one of such measure is that of devaluation/ depreciation as a step forward towards market – oriented exchange rate setting, there is still a room for need of provision of credit and other financial facilities to be given to the sub sector.
- The other major factors to be considered for the efficacy of devaluation in terms of improving the level of export of hides and skins are enhancing the human capital of the sub sector, and augmenting mechanisms that improve the quality of hides and skins for the international competition. These start by modernizing the animal husbandry practices and slaughtering methods.
- The final recommendation of the study has to do with data availability. The lack of data put many limitations on this study. Making data available increases the ability of researchers to make more precise recommendations that should be extremely helpful for policy makers in making sound economic decisions.

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