

Assessment on Real Effective Exchange Rate and External Sector Development of Ethiopia

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Abstract: This paper tried to assess the movement of real effective exchange rate and external sector development such as export, import & trade balance of Ethiopia using descriptive analysis to incorporate the two major devaluation period from the year 1985/86 to 2012/13. The result revealed that the depreciation of the real effective exchange rate improves the export performance however it doesn't discourage our import. A result even if there is higher growth of export after a depreciation of the real effective exchange rate, since the growth rate of imports outweigh, there is no improvement in the trade balance account. Thus, the paper recommends among others, Promoting import substitution strategy through subsidies to the domestic industries and reducing taxes to their imported semi finished inputs and awareness creation in favor of the home Produced substitutes should be made to reduce import expense.

Keywords: Real Effective Exchange Rate, Import, Export, Trade Balance

1. Introduction

Exchange rate is one of the most important policy variables, which determines the trade flows, capital flows & FDI, inflation, international reserve and remittance of an economy. The advent of floating exchange rates has directed renewed attention to the effects of devaluation on the trade balance of both developed and less developed countries (B.Oskooee&Alse, 1994).

Maintaining internal and external balances are among the main economic objectives that countries want to pursue. Particularly, external balance that is balance of payment equilibrium is achieved thorough expenditure-switching policies through mainly devaluation or revaluation. Hence, exchange rate policy is considered as a main policy instrument to correct balance of trade problems in each country.

Where the exchange rate regime is flexible, real appreciation is due to appreciation of the nominal exchange rate. Where the exchange rate is fixed, real appreciation is due to a rise in inflation after the money supply increases. Real appreciation undermines competitiveness, widens the current account deficit, and increases vulnerability to a financial crisis. Significant appreciation can lead to a sudden drying up of capital flows, causing an abrupt adjustment of

the current account. (Combes, Kinda, et.al, 2010)

Like most SSA countries, Ethiopia's economy was subjected to external sector which comprises both import and export sectors. During the military regime, Ethiopia's external sector enormously affected by current account deficit due to stagnant export earnings and rising Imports(World Bank,1990). From the year 1988/89 up to 1990/91 export earnings were declined from Birr 902.8 million to Birr 616.4 million, while import expenditure rose from Birr 2110.4 million to 2130.4 Birr million (NBE, 2003/04). As most findings pointed out that, one of the causes for this problem was the exchange rate policy, i.e. Overvaluation of the domestic currency taken by the military government. In those periods, Birr had been pegged to the US Dollar at a constant exchange rate, \$1= 2.07 Birr. Unlike to the Derg regime, Transitional Government of Ethiopia (TGE) has undertaken an economic reform program by designing new economic policies and map out economic development strategies for stimulating external balance. The devaluation of Birr was one of the corrective measures for combating current account .On 1992; TGE had devalued Birr by 58.6% i.e. from Birr 2.07 to 5.00 per. (Menasbo, 2012)

As well, the exchange rate is one of the major economic variables with important implications on international competitiveness since its change affects both export and import prices. The researcher believes that, there is a research

gap in assessing the real effective exchange rate and external sector development: due attention is given to spending on real effective exchange rate movement and external sector development to fill the study gap.

On the top of this, the country's economic performance was lighted and had tried to register better results on the external economy. Ethiopian economy basically on trade balance has been discussed in an attempt to show whether the post devaluation situation has revealed healthy external sector and trade balance. More specifically, the paper tried to assess real effective exchange rate and external sector development like import, export and trade balance. More specifically, the study tries to observe export performance of Ethiopia, review different exchange rate regimes in Ethiopia, the impact of appreciation / depreciation of real effective exchange rate on export, import and trade balance then draw conclusion and policy recommendations.

2. Literature Review

2.1. Exchange Rate Regimes and Developments in Ethiopia

In Ethiopia the exchange rate policy has passed different regimes. Before 1992 the country was exercising a fixed exchange rate regime, when the rate is solely determined by the government. Since 1992 the country is implementing an exchange rate policy which is more close to managed floating, where there is a government intervention whenever necessary to stabilize the foreign exchange market.

According to (Derrese, 2001) 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 and the floating of dollar and ceasing of its convertibility to gold, the Birr was revalued to 2.30 Birr per US dollar (i.e. by 8.75%) on 21 December 1971. The subsequent 10% devaluation of the US dollar had temporarily brought about under valuation of the Birr. To realign the Ethiopian Birr, it was again revalued to 2.07 Birr per US dollar in February 1973. This fixed official exchange rate was left unaltered for two decades despite the floating of the major world currencies including the US dollar.

According to EquarDasta (2001) as a result of fixation of exchange rate, Birr became over-valued in terms of the US dollar as well as many other foreign currencies. This overvaluation had adverse effect on national economy such as misallocation of resources, loss of international competitiveness, development of illegal parallel market for foreign exchange and unlawful cross border trade.

According to (Lencho, 2013) following the massive devaluation of 1992 took place, in an attempt to liberalize foreign exchange market; the National Bank has taken a number of initiatives. Accordingly, the fortnightly auction market for foreign exchange was introduced on May 1, 1993 with two rates, namely the Dutch auction system (official

rate) and marginal pricing auction system (marginal rate). These two rates were unified in July 1995. In August 1996, the fortnightly auction market was changed to weekly to accommodate the growing demand for foreign exchange and commercial banks were allowed to also established foreign exchange Bureaus. In September 1998, the retail auction system was replaced by wholesale system. In the same year, the inter- bank foreign exchange market was introduced and worked alongside the auction system until October 25, 2001 when the daily inter-bank has fully replaced wholesale auction system. In the present day, the official exchange rate is determined in the daily inter-bank foreign exchange market as the weighted average exchange rate prevailing on the preceding day.

2.2. Real Effective Exchange Rate as a Measure of External Price Competitiveness

Real effective exchange rate, REER hence forth, is a key macroeconomic relative price, which plays an important role in the board allocation of resources in production and spending behavior in the economy (Abbes Hiri, 2014). A narrowly defined notion of competitiveness is that of international cost and price competitiveness which measures the comparative prices or costs across countries in a common currency (Golub, 2000). This measure, the real exchange rate, is calculated as $q = ep/p^*$ where the exchange rate, e , is the foreign currency per unit domestic currency, and p/p^* is the ratio of domestic prices (costs), p , to foreign prices (costs), p^* . Assuming imperfect substitutability between traded goods, if domestic prices, p , rose faster than foreign prices, p^* , the real exchange rate, q , would appreciate (rise) reflecting a decline in competitiveness of domestically produced goods.

Thus, the real exchange rate (RER), which essentially measures the evolution of relative prices or costs denominated in a single currency, remains the most commonly used measurement of international competitiveness of a nation at different level of income. Its movement may either over or understates changes in a country's international competitiveness position, i.e., a depreciation of real exchange rate has a positive influence on export sector while the real appreciation of the local currency tends to reduce the external competitiveness of a nation. For instance, the real exchange rate appreciates when the nominal exchange rate appreciates and/or when the domestic price level rises by more than the foreign price level i.e., when the domestic inflation is higher than foreign inflation. Therefore, a real exchange rate appreciation tends to make domestic goods more expensive at home than abroad so that it becomes difficult for export producers to sell their goods abroad but more attractive to sell their goods at home. This explains why the real exchange rate is usually used as a measure of international competitiveness. However, it should be noted that a more competitive exchange rate might improve short-run competitiveness and hence export performance while the real exchange rate in the long run is supposed to converge to its equilibrium level so that sustain

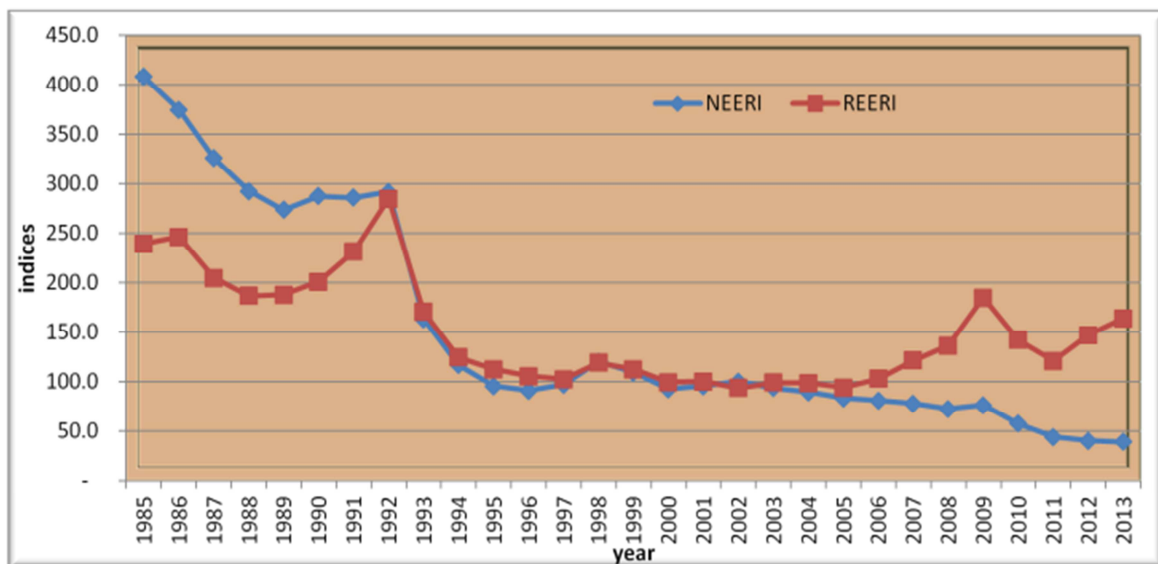
improvement in competitiveness requires enhanced productivity and resource reallocation to more dynamic sector. A misalignment or non-equilibrium movements of a RER suggests either over-valuation or under valuation of the exchange rate of the national currency and competitive stance of the economy may be jeopardized. For instance, RER misalignment in terms of real overvaluation could adversely affect export performance since real overvaluation reflects a loss in a country's competitiveness and misallocations of resources toward the non-tradable sector. More precisely, appreciation of a real exchange rate relative to its equilibrium value lowers exports and raises imports, thereby lowering net exports.

A number of literatures reveal that REER has been widely used indicator of international competitiveness in countries at all levels of income. Some research works also applied REER, among other indicators, to measure the change in international competitiveness of low income economies. For instance, Ken M (2007) conducted analysis on international

competitiveness of Namibia's economy using REER movements, among other indicators of international competitiveness. Furthermore, the misalignment of the actual REER of Namibia is examined using equilibrium REER estimated in different approaches. Similarly, the competitiveness of Chile's economy has also been viewed using the trend of REER. The IMF also considers the movements of REER, among other indicators, to evaluate the competitiveness of the economies of its member countries including Ethiopia. While REER remains a crucial and widely used indicator of international competitiveness, many of the research works and literatures have emphasized the need for this indicator to be supplemented by a range of other indicators of competitiveness.

3. Data Analysis and Discussions

3.1. Movements in Real Effective Exchange Rate



Source: NBE

Figure 3.1. Movements in Nominal and Real Exchange Rates.

The movement in Real Effective Exchange Rate (REER) as shown in the figure below from the year 1985 to 2013, reveals about three distinctive periods with some exclusion that is appreciation of real effective exchange rate from 1985 to 1992 and from 2006 to 2013 but 1987, 1988, 2010 & 2011 and depreciation from 1993 to 2005 but 1998, 2001 & 2003. The REER depreciated by about 40 percent in 1993. This reveals that, during the Dereg regime it significantly appreciated it might be due to rigid exchange rate policy and other restrictive policies. The real effective exchange rate reached its peak in the year 1992 mainly attributed to arise in domestic price level in time of regime change. After the regime change (i.e. the current government), relatively REER has been depreciating due to competitive exchange rate policy measures taken by the authorized body. Since October, 1992 real effective exchange rate index decreased due to a

series of devaluation policies to boost the external economy.

In recent years, however, it was appreciated by 35.5 percent in 2009 due to higher domestic inflation relative to that of major trading partners in combinations of nominal effective exchange rate that appreciated by 5.2 percent. This rate of appreciation has been declining after a year 2010 as a result of devaluations of birr in 2010 and intensive effort of the government to control inflation rate. Consequently, REER appreciated in 2012 and 2013. But, after substantial devaluation of the year 1993 by 44.1 % with the exceptions in 1997, 1998, 2001, 2002 and 2009 the nominal effective exchange rate depreciated across the time period (Figure 3.1)

3.2. International Competitiveness of Ethiopia

As mentioned earlier, one of the important measures of international competitiveness can be the movement in the

real effective exchange rate (REER). When we see the recent development for Ethiopia there was some implication of decline in the international competitiveness during the period 2005/06 to 2013/14 except in the year 2009/10 and 2010/11 as the REER was appreciating due to continuous growth in domestic price despite depreciating trend of the nominal exchange of the Birr. For instance, in 2007/08 the general domestic price level increased by 25.3 percent while the nominal exchange rate of the Birr depreciated only by 6.7 percent and the real effective exchange rate became appreciate by 12.4 percent. For the year 2008/09, however, the appreciation of the REER was due to the appreciation of the NEER even if inflation decline by 27.6 percent. But, in 2009/10 and 2010/11 the international competitiveness of the country improved as shown by declining of REER due to depreciation of the nominal exchange rate and controlled inflation in 2009/10 and appreciation in 2012/13 & 2013/14.

The improvement in international competitiveness of the country can be observed from the performance of the export growth of Ethiopia during 2005/06 to 2008/09 the growth rate was within the range of 11 to 30.5 percent. But, in 2009/10 and 2010/11 it showed significant improvement of which the export growth reached 71.7 and 70.5 percent respectively but deteriorating in 2011/12 and 2012/13 and the growth rate down to 22.4 & 2.8 percent respectively. (Table 3.2)

When we conclude the above two sections trend in Real Effective Exchange Rate (REER) index of Ethiopia can be seen from the above figure (fig 3.1) reflects that movements in exchange rate adjusted for relative price differences with its major trading partners, has been appreciating for the last three years. This implies that, the country has to work on its international competitiveness by identifying its competitive advantages and introduce appropriate policy measures.

Table 3.1. Real Effective Exchange Rate of Ethiopia.

Fiscal Year	REERI	NEERI	CPI	Annual Change		
				REERI	NEERI	dCPI
2005/06	102.9	80.9	87.4	9.4	-2.7	10.6
2006/07	121.3	77.6	101.3	17.9	-4.1	15.8
2007/08	136.3	72.4	126.9	12.4	-6.7	25.3
2008/09	184.7	76.1	91.9	35.5	5.2	-27.6
2009/10	142.1	57.4	64.7	-23.1	-24.7	-29.6
2010/11	121.0	43.7	76.4	-14.8	-23.8	18.1
2011/12	147.0	40.4	102.4	21.4	-7.6	34.1
2012/13	163.9	38.9	116.3	11.5	-3.7	13.5
2013/14	172.0	37.7	125.7	4.9	-3.0	8.1

Source: NBE

Table 3.2. Export and Their Growth Rate (In Min Birr).

Year	Export	Growth rate of export
2005/06	8,685.4	18.47
2006/07	10,457.6	20.40
2007/08	13,643.3	30.46
2008/09	15,209.3	11.48
2009/10	26,115.3	71.71
2010/11	44,525.6	70.50
2011/12	54,494.8	22.39
2012/13	56,014.3	2.79

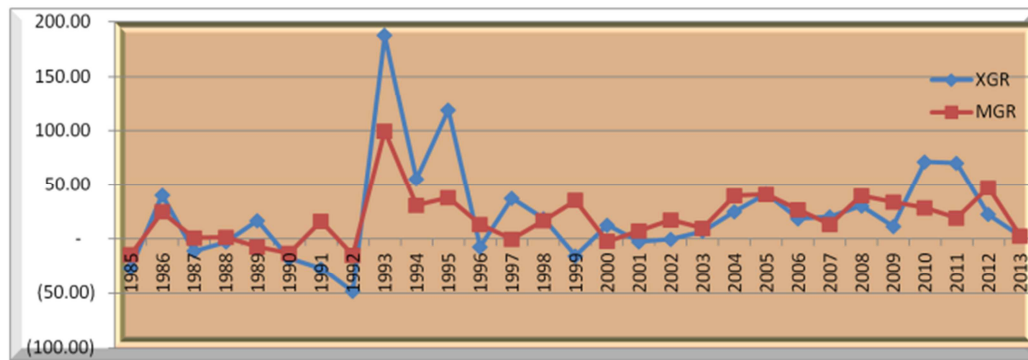
Source: NBE

3.3. Trends of Export, Import and Trade Balance

Ethiopia's external sector is doing much more on transactions. Some of them are part of generating revenue, exports, and they are regarded as expenditure, imports. So, the trend of these two macroeconomic variables showed different connotations as a result of the policy measures taken by the government.

For a long period of time, Ethiopia has involved in foreign trade and experienced trade deficit several time in the past. This deficit can be largely explained by the unequal terms of trade between agricultural commodities (the country's major

export) and capital goods (the country's major import) (Yibeltal et al (2015). There are also various reasons behind the continuing deficit; it might be currency overvaluation was the dominant one. During the military regime Birr was pegged to 2.07 per USD which could be characterized as overvalued exchange rate. Thus, to overcome the deficit, in the late 1992 EPRDF had devalued the exchange rate to Birr 5 per USD which was intended to boost exports and discourage imports.

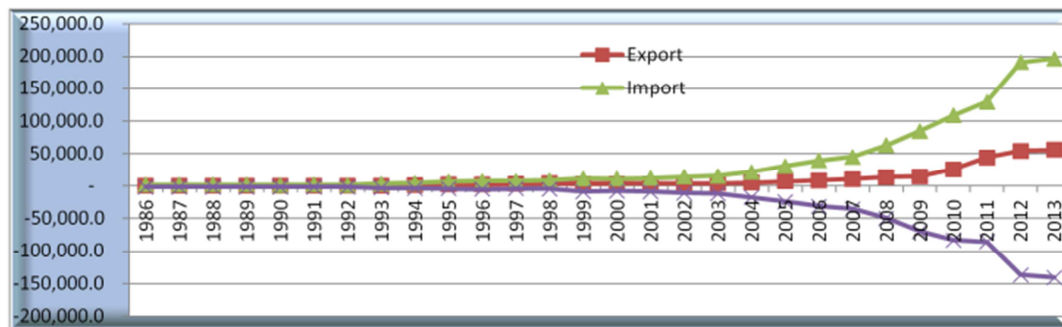


Source: NBE

Figure 3.2. Growth Rates of Exports and Imports.

As shown in the above Figure 3.2, before the year devaluation happened (1992) the growth rate of exports was negative i.e. in declining trend. There are many reasons behind this declining performance of Ethiopia's export. For example, the exchange rate was overvalued which made the country's export relatively very expensive that induced low export earnings. After the devaluation of Birr in 1992, the foreign earnings from export started to increase. As indicated in the above Figure (fig 3.2),for the year of 1993 the growth

rate of export reached 187.49 percent and this trend has continued to the years 1994 and 1995 with a 55.51 percent and 119.01 percent growth respectively. As a result of currency devaluation, the commodities which priory had subjected to domestic consumption could be re-channelled to international market through exports and accelerate the export earnings of the country. Similarly, import structure after a year 1992 was also increased due to awaken economy of the country.



Source: NBE

Figure 3.3. Trends of Import, Export and Trade balance.

Figure 3.3 indicates that the widening of both export and import following the devaluation of the year 1992. The increment of import exceeds export; the import structure has also effectively increased in relative terms. In fact, imports have increased in value more than the value of exports, which contributed to the worsening of trade balance. Ethiopia has experienced a chronic trade deficit although it devalued its currency which aimed to bolster the export above import.

Moreover, in the case of both the pre and post devaluation periods trade balance could not be improved, rather the situation became worsen. The deficit has widening through the time due to increase in import in significant manner, however, after a year 2000 it become more widened as a result of stimulated economy. Though, progresses of import value surpass export value leads to the trade balance deficit in the economy.

Economic theory suggests that if nominal devaluation translates into real devaluation, it likely improves trade balance of a nation through its effects on import and export.

In Contrast to the theory, the depreciation of the REER from 1993 to 2005 but 1998, 2001 & 2003 could help the improvement of the Ethiopia's export. As shown in figure 3.2, the country's export growth was positive but it also observed that import was not discouraged by depreciation of REER. In line with this theory, export increased for three consecutive years following the massive devaluation and subsequent depreciation of REER. However, for most of the period under consideration, export improved or deteriorated following depreciation or appreciation of REER respectively, but not imports showing the indecisive relationship between changes in exchange rate and import value and therefore trade balance.

To sum up, there is general agreement that Ethiopia's

export is like most developing countries characterized by high commodity and geographic concentration, high vulnerability to external shocks and high dependence on agricultural export. Likewise, Ethiopia's major exports are agricultural commodities which are relatively inelastic as compared to industrial exports. On the other hand, imports intrinsically are highly price inelastic which are either necessities in production or consumption or very strategic commodity and are invariably required by the country. The share of imports that could be used as inputs other than consumer goods are higher, that is the import of capital, raw materials, semi- finished goods and fuel together takes highest share among imported goods. In addition, Ethiopia's demand for imports is highly inelastic, and then relatively more expensive imports due to devaluation will only minimally affect Ethiopia's demand for imported goods. In this case expenditures on imports could actually rise as they become more expensive even if the devaluation improves our export performance. This results that worsening of the trade deficit.

3.4. Effectiveness of Devaluation on Real Effective Exchange Rate

According to Edwards (1991) the triumph of devaluation should be seen in three different perspectives firstly, effectiveness index, secondly behavior of net foreign assets of the monetary system and thirdly behavior of current account ratios. The effectiveness index is given by:

$$\text{Effectiveness index}_k = \text{REER}_k / E_k$$

Where: k refers to year of the devaluation and 1,2 and 3 years after the devaluation.

REER_k is the percentage change in the real exchange rate between the year and prior to the devaluation and k years after the devaluation. (k=0, 1, 2, 3) and E_k is the percentage change in the nominal exchange rate during the same period.

This elasticity provides an index of degree of erosion experienced by the real exchange rate during the years after devaluations. A value of one means that nominal exchange rate adjustment is fully transformed in to one -to -one real devaluation. A negative value index indicates that at particular point the real exchange rate is below its value one year before the crisis. The value of this ex post elasticity

index measures in a very broad sense what percentage of the nominal devaluation has been transformed in to a real devaluation.

In order for a devaluation to be qualified as successful, the following three conditions must be fulfilled. These are:

1. Three years after devaluation the effectiveness index has to exceed 0.3, means that no more than 70 percent of the devaluation impact has to be eroded in three years.

2. Three years after devaluation the Current account has to improve.

3. The net foreign asset indicators have to exhibit an improvement relative to the year before the crisis.

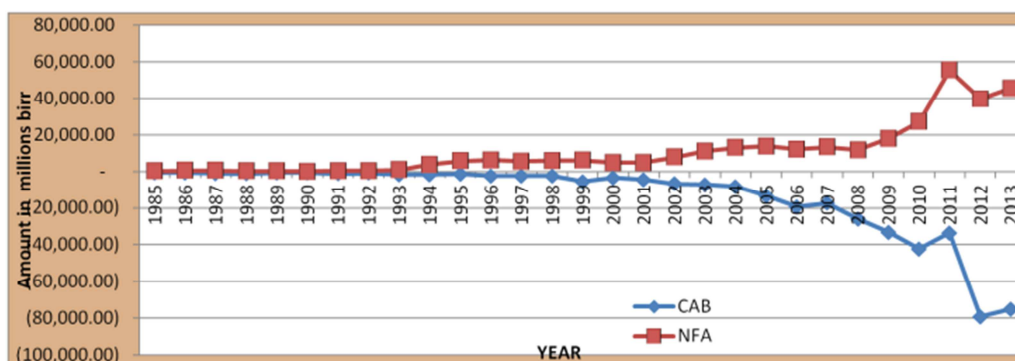
Table 3.3. Effectiveness Indices.

Fiscal Year	REERI	NEERI	Effectiveness index
1990/91	231.3	286.1	
1991/92	284.8	292.1	11.029
1992/93	170.6	163.3	0.909
1993/94	124.4	116.8	0.951
1994/95	112.4	95.6	0.531
1995/96	105.4	90.8	1.240
2009/10	142.1	57.4	0.939
2010/11	121.0	43.7	0.622
2011/12	147.0	40.4	-2.845
2012/13	163.9	38.9	-3.096
2013/14	172.0	37.7	-1.602

Source: NBE

As shown in the above table effectiveness index revealed that in all three years after devaluations of the year 1991/92 it exceeds 0.3 means that, the nominal devaluation was transformed in to real devaluations on average by 70 percent for the three post devaluation years. In contrast, the effectiveness index after 2009/10 devaluation showed that the second and third years after devaluations indices indicates negative value means at that exacting time the real exchange rate is above its value before one year of devaluation.

The net foreign asset positions of the country shows in the graph below indicates that immediately after the devaluations of both in 1991/92 and 2009/10 the asset positions significantly improved but after 2012 some deteriorating.



Source: NBE

Figure 3.4. Net Foreign Asset and Current Account Balances (in millions of Birr).

Unlike to the effectiveness index development as well as the net foreign asset position the current account balance shows tended deteriorate after both devaluations due to Merchandize import has increased as a result of waking economy. Thus, the success measure of the devaluation based on the three criteria that we put above resulted in mixed outcome but the 1992 devaluation is better outcome than the 2010 because it fulfill the two requirements of effectiveness index and net foreign asset positions.

4. Conclusion and Recommendations

This study tried to assess the movement of real effective exchange rate and external sector developments like export, import & trade balance.

The main finding of this study revealed that in Ethiopia the depreciation of the real effective exchange rate improve the export performance and their international competitiveness but not discourage our import, and it was insufficient to offset the remarkable growth of imports due to trade liberalization policy and waking economy. Though there is higher growth of export after a depreciation of the real effective exchange rate, the growth rate of imports is larger and prevents any improvement in the trade balance account. This all supported by the effectiveness index.

Based on the findings the following policy recommendations are forwarded:

- Though import outweighs to export, still then best alternative to overcome the deficit is to continuously devalue domestic currency (Birr) in accordance with in the long run could be effective enough to support the trade balance.
- Promoting import substitution strategy through subsidies to the domestic industries to substitute their imported inputs and reducing taxes to their imported semi finished products and awareness creation in favor

of the home Produced substitutes should be made to reduce import expense.

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