EXPORTS AND ECONOMIC GROWTH IN ETHIOPIA: AN EMPIRICAL INVESTIGATION

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ADDIS ABABA

Declaration

The thesis is my original work, has not been presented for a degree in any other university and that all sources of material used for the thesis have been duly acknowledged.

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ABSTRACT

This study investigated the effect of exports on economic growth in Ethiopia for the period 1960/61-2000/01. The study aimed to review the policies undertaken by the different regimes in relation to export policies, and to empirically test the relationship between exports and economic growth using different techniques. In addition, attempts were also made to examine the supply (structural) constraints to export growth in Ethiopia.

To test the export-economic growth relationship, in addition to using the frameworks that have been followed by most of the previous studies, an extension to the previous studies was made by introducing cointegration and error correction approaches in the regression analysis. Furthermore, a simultaneous equation model and the Granger causality test were conducted to examine the indirect effects of export on economic growth and to address a possible simultaneity problem that may arise because of the correlation between export and economic growth.

The results from the cointegration and error correction models revealed that export significantly affected economic growth in the short run. In addition to its direct effect, export is also found to indirectly affect economic growth as evidenced from the simultaneous equation models. Furthermore, the causality test conducted indicated that causality runs from exports to economic growth. The key finding in this study is that export growth positively and significantly affected economic growth and the result is not sensitive to the methodologiesused.

1.INTRODUCTION

1.1 Background

The issue of accelerated economic growth has been the main agenda in economic policy formulation for most of the Sub-Saharan Africa (SSA) and other developing countries of the world since the early 1970's. It is given paramount importance precisely because the economic growth of these countries has been showing a deteriorating trend from time to time. The per capita income of most of these countries has registered a negative growth rate during the past three decades owing to the sluggish economic performance coupled with the startling population growth. The records of the economic performance of most SSA counties exhibit that they had been performing better before their colonial independence than today [Rodney, 1982]. Hence, considerable attention has been paid by a number of development economists and government policy makers to review the experiences of these countries in order to promote economic growth and improve their living standards.

One area that has been given much focus in order to promote the economic performance of these countries is external trade. Following the traditional trade argument, trade is viewed as an "engine" if not as a "handmaiden" of growth playing a supportive role in the economic growth of the least developed countries (LDCs).

The economic growth of the present day developed nations like the United States, Canada, Australia, New Zealand (referred as regions of recent settlement) that were once developing nations is largely attributed to international trade [Salvatore, 1990]. Hence international trade

has been given much importance in the policy formulation of many LDCs, viewing it as a vehicle to transform the economic performance of these countries.

International trade has also played a crucial role in the historical development of the third world. In the second half of the 20th century, the tremendous economic performance of the "four tigers"- South Korea, Taiwan, Hong Kong and Singapore has been largely attributed to the performance of the external sector where the export sector was given a greater emphasis. Strong political commitment towards export promotion and the application of appropriate policies together with efficient institutional mechanisms helped these countries attain a higher growth rate of exports and hence of the overall economy.

The success of these East Asian countries coupled with failure of the import substitution (IS) strategy, which once was held by many LDCs as the appropriate policy during the 1950s and 1960s, led most LDCs to give due attention to the export promotion trade strategy. It is argued that this strategy would help primary commodity exporting countries achieve optimal scale and enable them tap foreign technology which is deemed to be important for the growth process of these countries.

Many studies have been conducted on LDCs to check whether exports do contribute to economic growth or not. The results of these studies are very important to forward relevant policy recommendations that would enable these countries enjoy the benefits of economic growth.

Ethiopia, like many other developing countries has actively pursued the import- substitution industrialization strategy during the Imperial and Derge regimes. The World Bank (1987) classified Ethiopia as one of the strongly inward oriented countries during the periods of 1963-73 and 1973-85, which coincides with the Imperial and part of the Derge regimes, respectively. However, the IS trade strategy hadn't performed well, where the import competing industries remained infant and were at their rudimentary stage despite the tariff and non-tariff protection. With the fall of the Dergue regime, however, the current regime initiated trade liberalization in which export promotion is the major component of the program.

Hence, a closer look into the policies that were once followed by these governments and an empirical investigation to find out the contribution of exports to economic growth is very essential in order to help the country experience a sustainable economic growth.

1.2 Statement of the Problem

Owing to both internal and external factors, the growth performance of the Ethiopian economy has been less than satisfactory during the past four decades. Externally, the quadrupling of oil prices that took place during the period 1973-74 and the export short fall associated with the world recession of 1974-75 resulted in chronic balance of deficit problem that greatly affected the economic growth of many LDCs and the country. In addition, the period of the1980s was also characterized by the collapse of commodity prices that resulted in deterioration of terms of trade of primary-commodity exporting countries, which further worsened the economic performance of the country.

Internally, recurrent drought and the prolonged war that took place till the demise of the Derge regime have greatly affected the growth of the economy. Furthermore, the shifting of policies from one regime to the other has negative implication on the overall economic performance.

As the country is not self sufficient in generating the saving that is essential to realize a sustainable economic growth, the external sector becomes very crucial for the growth performance of the economy. During the past four decades, the country is becoming more and more open increasing its outward linkages with the rest of the world. For instance the openness of the economy (measured as the ratio of export plus import to GDP) which was about 23 percent on average during the imperial regime reached 26.1 and 36.2 percents during the Derge and the present government, respectively[1].

The export sector can play a crucial role in the growth performance of the country, as can be evident from its contribution to the different sectors of the economy. During the past four decades, for instance, export has contributed on average about 11.3 percent to GDP. In addition, it generates the much needed foreign exchange earning that is essentially used to finance the imports of the country. Together with foreign aid and grants, the country uses the foreign exchange generated from the export of primary agricultural products to import almost all of its intermediate inputs, fuel and capital goods, which are believed to be essential for the economic growth of the country.

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[1] Data from MEDaC

During the Imperial regime for instance, proceeds from exports used to cover on average about 91 percent of the import bill, which has declined to 54.4 percent in the current regime. Furthermore, taxes from foreign trade are important sources of the state revenue. During the three regimes all together foreign trade tax accounted for more than 28.7 percent of the state revenue of which 6.5 percent comes from export tax.

Despite its contribution to the overall economy, however, the performance of the export sector has been less satisfactory. The country's exports are highly concentrated in agricultural commodities, while the share of non-agricultural products in total merchandise exports is almost insignificant. Coffee, pulses & oilseeds, hides & skins and chat, in that order, have contributed on average about 54.4, 13.1, 11.5 and 4.1 percent of the total export earnings during the last four decades[2]. During the same period, the commodity concentration index for these commodities together with gold and petroleum averaged about 0.56. The country's heavy reliance on these few export commodities, which are highly subjected to price fluctuations, is one reason for the poor performance of the export sector. In addition to this, there is geographical concentration of exports that makes the country vulnerable to the economic conditions (demand) of its trading partners. Germany, Japan, United States, Djibouti and Italy are the five major trading partners of the country, which altogether absorb about 73.3 percent of the country's export[3]. This concentration on few trading partners resulted in demand constraint for the nation's primary exports and could be one reason for the poor performance of the sector and hence of the economy.

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[2] Data from MEDaC

[3] Data from NBE

Failure of the different government policies to diversify and promote exports is also one problem that greatly reduced the competitiveness and performance of the export sector. Until the demise of the Derge regime, the country has been recognized as one of the strongly inward-looking countries. Anchored by high level of protection and overvalued exchange rate, the policy of inward-looking has weakened the export sector. The policies that were followed by the then governments had a strong anti-export bias that greatly reduced the competitiveness of the sector.

The Transitional Government of Ethiopia (TGE) who came to power in 1991/92 launched a new economic policy where the role of exports to economic growth was given due importance in the development strategy of the country. However, the export supply response to the policy change is not as anticipated. The incentives provided by the new policy to promote exports could not totally eliminate the anti-export-bias incentive structure that originated from heavy protection of the domestic industries. As a result the export supply response was weak and the recovery since 1991 in export earning mainly resulted from coffee price boom and institutional reforms than the effect of trade and exchange reform. The factors behind the sluggish performance of the sector could be due to a combination of the structural problems existing in the whole economy or the insufficiency of policy measures taken to totally nullify the anti-export bias that prevailed during the previous regimes [MEDaC, 1997]. Therefore, a closer look at the policies followed by the different regimes, examining the contribution of structural constraints and assessing the contribution of exports to economic growth are issues that will be examined in this study.

1.3 Objectives of the Study

In light of the problems stated above, the specific objectives of this study are:

- To review the different policies undertaken to diversify and promote exports by the present and the previous regimes,
- To investigate the relationship between exports growth and economic growth using different methodologies,
- To examine the supply/structural constraints to export growth,
- To suggest, on the basis of empirical evidence, policies that would help the country experience economic growth.

1.4 Significance of the Study

Understanding the contribution of export to the different sectors of the economy would help the country fully exploit the benefits of the sector that is essential for sustainable economic growth. In this regard, a clear picture of the domestic policies that once have been followed and other supply constraints become very important in order to remove impediments that deter the performance of the sector. The outcomes of this study may provide useful inputs in the formulation of development plans and policies. For instance, it provides an empirical magnitude of the contribution of export to economic growth, which could be important to understand the proportion of the overall economic growth that is attributed to the performance of the export sector. In addition it shades light on domestic policies and related supply constraints that hinder the performance of the export sector. Understanding these would help policy makers and related bodies take appropriate measures to remove the impediments and be able to fully utilize the benefits of the sector.

1.5 Organization of the Study

The rest of the thesis is organized as follows. The next chapter reviews the role and the performance of the export sector and the trade policies and efforts undertaken to promote and diversify exports. Chapter three reviews the relevant theoretical and empirical literatures. The methodology, model specification and the data are dealt within chapter four. Chapter five is devoted to the empirical examination of the issues using different econometric techniques. Finally, conclusions and policy recommendations are provided in chapter six.

2. THE ROLE AND PERFORMANCE OF THE EXPORT SECTOR IN THE ETHIOPIAN ECONOMY

2.1 The Role of the Export Sector

Like in most of the Sub-Sahara African and other developing countries, exports can play a significant role in the growth performance of the Ethiopian economy. This is evident from looking at the figures of export contribution to the different sectors of the economy (see table2.1).

Table 2.1: Share of Exports in the different sectors of the economy

Period	Average Share of Exports in GDP (%)	Average Share of Exports Covering Imports Bill (%)	Average Share of Export Tax from the State Revenue (%)
1960/61-1973/74	10.9	91.1	7.7
1974/75-1990/91	10.0	62.7	10.1
1991/92-2000/01	12.8	54.4	1.6
1960/61-2000/01	11.0	70.4	7.3

Source: Author's Calculation using the data from MEDaC, Excise Authority& Ministry of Finance

It can be seen that on average exports contributed about 11.0 percent to GDP during the past four decades. The share of exports in GDP was the highest during the present government.

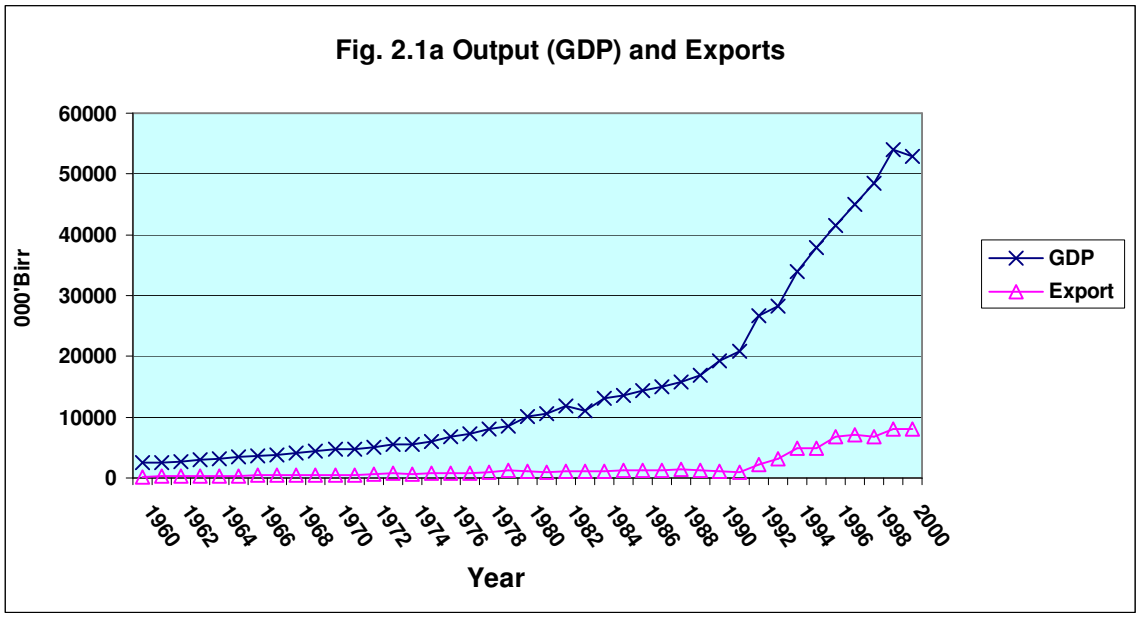
Fig. 2.1a Output (GDP) and Exports
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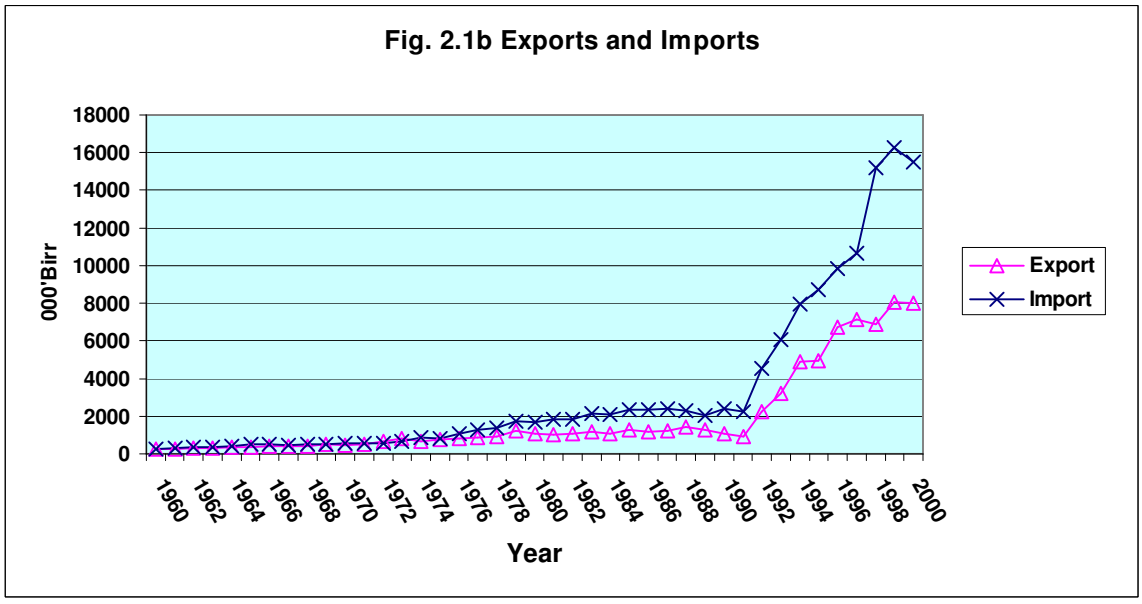
Fig. 2.1b Exports and Imports
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12000
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1960
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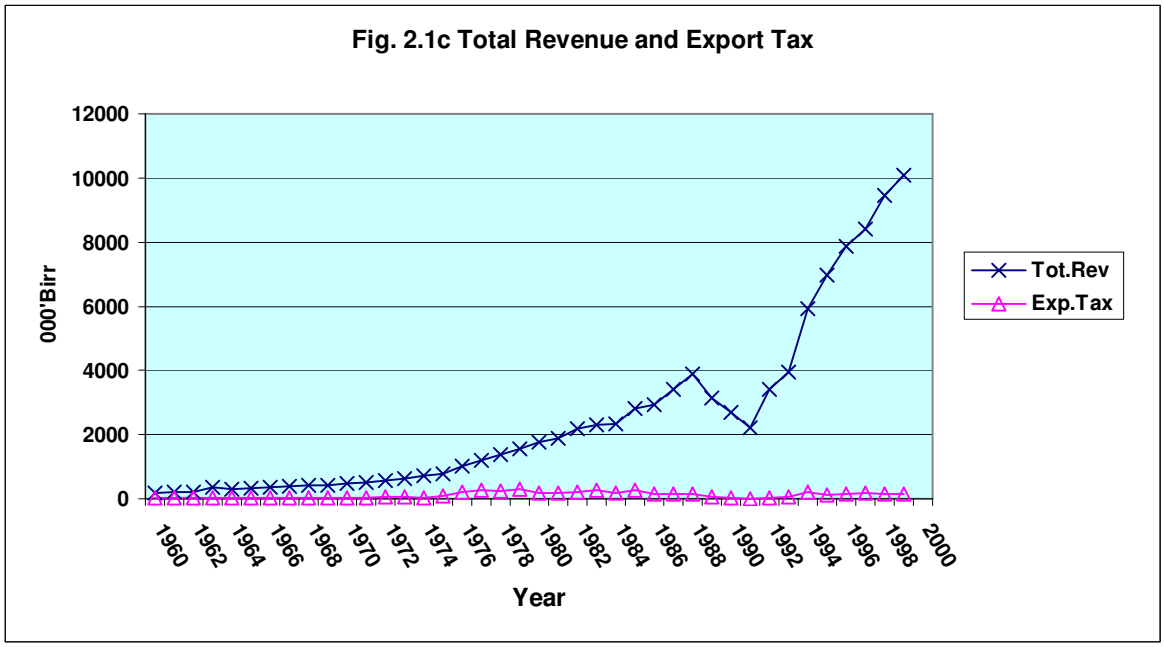

The highest share was recorded in the year 1996/1997 which was about 16.2 percent of GDP, the lowest being 4.5 percent at the end of the Derge regime in 1991/92 (Fig. 2.1a).

The revenue from exports made the import of inputs possible that are crucial for development purposes thereby playing as an engine of growth to other sectors. During the period 1960/61-2000/01 proceeds from exports covered more than 70.4 percent of the import bill of the country. In some years during the imperial regime the proceeds from export was able to cover the total imports bill and even register a surplus (see fig. 2.1b). Hence expanding exports enables the country reduce the foreign exchange constraint that acts as a bottleneck for the growth of the economy. Due to administrative inconveniences or high cost to raise government revenue, tax on foreign trade constitute a major part of the state budget. During the three regimes all together foreign trade tax accounted for more than 27.9 percent of the state revenue of which 7.3 percent comes from export tax.

2.2 Trends in Export Performance.

The value of goods and services exported has been growing at an average annual rate of 10.2 percent for the last four decades 1960/61-2000/01. During the period under consideration, the revenue from exports of pulses and oilseeds has been growing at an average annual rate of 59.4 percent followed by chat whose rate was 59.1 percent.

The revenue from the export of coffee and hides and skins has been growing at average annual rate of 10.3 and 7.1 percent, respectively (See Table 2.2).

Table 2.2 Average Annual Growth Rate of Export

Period	Growth Rates in Total and Major Components of Export				
	Total Export	Coffee	Hides& Skins	Pulses& Oilseeds	Chat
1960/61-1973/74	8.2	2.7	9.1	13.1	0.8
1974/75-1990/91	4.7	7.1	5.6	2.4	69.8
1991/92-2000/01	22.5	27.4	14.1	221.0	122.3
1960/61-2000/01	10.2	10.3	7.1	59.4	59.1

Source: Author's calculation using data from MEDaC, Excise Authority& Ministry of Finance

Prior to 1974(the imperial era), there has been a modest growth in the total value of export earning. The average annual growth rate of real value of exports was 8.2 percent. During the

period, the receipt from the export of pulses and oilseeds has been growing at an average annual rate of 13.1 percent. Coffee, which is the largest export commodity, has been at an average annual rate of 2.7 percent.

During the Derg regime (1974/75 – 1990/91), the growth rate of real exports was lower from the rate recorded in the previous regime. The growth rate of total value of export earning registered more than 42 percent decline from the growth rate recorded for the imperial regime. This can be largely attributed to the poor performance in the export of pulses and oilseeds. The proceeds from the export of the commodity, which was growing at an average annual rate of 13.1 percent during the imperial regime, declined to 2.4 percent during the Derge regime. During this regime, export revenue from chat has demonstrated an average annual growth of 69.8 percent compared to 0.8 percent during the imperial regime.

Under the period of Ethiopian Peoples' Revolutionary Democratic Front (EPDRF), that is 1991/92-2000/01,the growth rate in the real value of total exports has shown a significant increase. In real value, total exports grew by 22.5 percent. Owing to different policy measures under taken by the government to promote exports, revenue from the various export commodities has shown a remarkable increase. Proceeds from oilseed & pulses, which was growing at an average annual rate of 2.4 percent during the previous regime started to grow at a rate of 221.0 percent. And the revenue from Chat export has been growing at an average annual rate of 122.3 percent. Such an increase in the value of export of these commodities is mainly attributed to a very significant growth rate recorded during the period 1991/92-1992/93. Owing to the favorable environment created after the prolonged war that prevailed in the country, the proceeds from these commodities escalated very sharply from the period 1991/92 to 1992/93.

2.3 Commodity and Sectoral Structure of Export

Commodity structure of the Ethiopian export sub-sector is a mirror reflection of the country's over all economic structure at large. The nation's output and exports are highly concentrated in agricultural commodities, while the share of non-agricultural products in total merchandise exports is almost insignificant. For the past four decades, primary agricultural products accounted for 80-90 percent of the merchandise export earnings of Ethiopia.

Table 2.3a Commodity Structure of Exports (%of total)

Commodity	1970/71-1973/74	1974/75-1990/91	1991/92-2000/01	1970/71-2000/01
Coffee	42.6	61.6	59.1	54.4
Oilseeds & Pulses	25.4	6.6	7.2	13.1
Hides&Skin	10.6	12.7	11.3	11.5
Chat	0.8	2.2	9.4	4.1
Gold	-	1.2	4.9	2.0
Petroleum	0.6	5.0	1.4	2.3
Fruit&vegatable	1.7	1.0	0.8	1.2
Live animals	1.2	1.8	0.2	1.1
Sugar &Molasses	2.1	1.6	0.5	1.4
Textile	0.1	0.4	0.5	0.3
Meat products	3.5	0.7	0.6	1.6
Spices	0.6	0.4	0.6	0.5
Natural Gum	-	0.3	0.4	0.2
Cotton	1.3	1.0	0.5	0.9
Others	9.5	3.5	2.8	5.3
Total	100	100	100	100

Source: Author's calculation using data from MEDaC, Excise Authority& Ministry of Finance

Among the major export products, as shown in Table 3.2 above, coffee accounts for the lion's share of primary exports and of total merchandise exports as well. From 1970/71-2000/01 coffee alone accounted for 54.4 percent of the total export proceeds. The average percentage share of coffee in the total merchandise exports was 42.6, 61.6 and 59.1 percent for the imperial, Derge and the present government, respectively. The smallest share of coffee in the total export was 25.9 percent in 1974/75, which was due to the change in the government and political instability. The largest share was 80.7 percent in 1977/78 due to the then government's development campaign efforts.

All these figures illustrate the fact that the Ethiopian merchandise export sub-sector is largely dependent on coffee export for its badly needed foreign exchange earning. However, Ethiopia's share of the world coffee market has been stable at less than 2 percent during the last twenty years and coffee exports have declined since 1997/98 along with the decline in the world prices [World Bank, 2001]. In addition to the fluctuation in the international price of coffee, which acts as a demand side constraint, there are supply side factors (government policies and Institutional problems) that inhibit the performance of the commodity's export. According to the World Bank (2001), four factors can be mentioned.

a. In order to prevent undermining the reputation of Ethiopian coffee on the world market, all coffee is classified as export quality or as domestic quality. However, this has unintended consequences. When domestic price are higher than international price, farmers are likely to illegally divert more of their production into the domestic market. Estimates suggest that this could amount to 25 percent of production and half of exports.

b. The auction system, which has been widely practiced but is now being relaxed, has a number of drawbacks. First, the system prevents direct trading between processors and exporters, which might result in the development of coffee with special characteristics. Second, it prevents vertical integration; exporters involved in processing and washing activates cannot integrate these activities because they may not be able to re-acquire the coffee they supplied at an auction. Third, it inhabits exporters from making long-term contracts with importers since they cannot be assured of buying at an auction the type of coffee they contracted to supply.

c. The inability of buyers to inspect and test coffee is another constraint that further reduces confidence in quality. However, exporters report cases where the certified coffee was letter rejected as unfit for export when submitted for final inspection. A solution for this problem would be to hold coffee in storage for 2-3 days before auction and to allow private sector testing which would require additional storage facilities at the action.

d. The auction system is weak and is being hindered by a variety of factors. For instance, some inexperienced traders default on the payment of minimal entry requirements for traders (200 Birr license) that was envisaged to promote competition among coffee buyers at the auction. Others have disrupted the auction by working for coffee sellers to bid-up the auction prices, thus raising the price to exporters. This will widen the trade margin (as bid-up prices are not transmitted back to producers) and makes Ethiopian coffee less competition with world market.

Hence in order to reap the benefits of this single export commodity that the country heavily relies on, the institutional problems mentioned above need to be addressed and government regulations and polices should be revised.

Following coffee, oilseeds and pulses together rank second in their share in the total merchandise export during the period 1970/71-2000/01.During this period, their share in the total export proceeds was about 13.1percent. Though their share was the highest during the pre-revolution Period (which was about 25.4 percent), it declined significantly to 6.6 percent. Although affected by declining would market prices, oilseed exports surged in recent years. In 1999 Ethiopia ranked 25th among the top oilseed exporters, up from 84th place in1990 (Ibid.). The most rapid growth has been sesame seeds, where production has increased five-fold during the last five years, from practically zero during the early 1990s. Export earnings from pulses have declined in the late 1990s due to the down turn in international price. Despite this, export prospects are reasonably good and the country can benefit a lot by increasing the production of the commodity in response to price.

During the period 1970/71-2000/01, hides and skins accounted, on average, for about 11.5 percent of the total export proceeds. Its share during the three regimes has been somewhat constant ranging between 10-13 percent. Ethiopia has traditionally been a major exporter of hides and skins because of its large livestock population. However, in recent years it has lost market shares in both hides and skins and finished leather products. The country ranked 70th among the top leather and leather manufactures exporters, down from 49th and 48th place in 1980 and 1990, respectively (Ibid.).

One of the major reasons for the decline in its share is the outbreak of parasitic disease that has reduced the value of hides and skins by causing blemishes in the finished leather. In an effort to derive the benefits of processing, the government banned exports of raw hides and skins. The ban has benefited the tanneries, which are now the sole suppliers of semi-processed hides and skins to the international market. But live stock producers receive lower prices for their hides and skins because the tanneries are the only buyers. Domestically, the tanneries are also protected by high import tariffs. The rapid expansions of tanneries since the export ban likely reflects the opportunity to profit in protected market.

The export commodity whose share increased significantly during the last four decades is Chat. Its share in the total export earning was 0.8,2.2 and 9.4 percent during the imperial, Derge and the present government, respectively. Recorded exporters of Chat increased significantly in 1999 following the liberalization of export to Somalia. Chat is also legally exported to Djibouti and the U.K. In addition, substantial unrecorded illegal trade occurs, which is estimated to be equal in size to the recorded exports. Chat exports are expected to grow even without government interventional because of strong demand in neighboring countries. While such exports are not encouraged, because of the negative health effects, they are likely to occur (Ibid.). The above export commodities including gold and petroleum products, on average, account for more than 88 percent of the country's export earning. The rest 12 percent is distributed among fruits and vegetables, live animals, sugar and molasses, meat and meat products, cotton spices, textiles, natural gum and others.

Furthermore, commodity concentration index[3] (Hirschman Concentration index) for the first five products (coffee, hides and skins, chat, oilseeds and pulses, gold and petroleum products) during the period 1970/71-2000/01 averaged 0.56. This indicates that the export sector is concentrated on few products. Only two export commodities have been added to the list of the country's export items since 1970/71(natural gum in1980/81 and gold in1985/86). This exposes the export sector to undesirable consequences in the event of a fall in price of the commodities in question or recession in the major markets.

As any Sub-Sahara African (SSA) countries, the sectoral structure of Ethiopia's exports is classified as very much concentrated on primary agricultural products. Despite the fact that there is an associated higher degree of risks and uncertainties with the export of primary agriculture products, the country heavily relies on these products on average for about 80% of its total export earnings.

As shown on Table 2.4, the Ethiopian export is sectorally concentrated on agriculture. For the period 1991/92-2000/01, raw agricultural products export on average accounted for about 78.8 percent of the total merchandise exports. The rest 11.2, 8.6, and 1.4 percent on average came from manufacturing, mining and unspecified sectors, respectively. This shows that the Ethiopian export sub-sector in particular and the whole economy in general is agriculture dominated which in turn is rain fall dependent and back ward in technology utilization.

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[3] Hirschman Concentration Index ($H_j = \sqrt{\left[\sum \left(X_{ij} / X_j\right)^2\right]}$ where X_{ij} is the value of a particular commodity and X_j total export revenue. The indices range from 0 to 1, higher value reflecting export concentration.

Table 2.3b Sectoral Structure of Exports (% share in total)

SECTOR	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01
Raw Agricultural Product Exports	**54.7**	**69.0**	**71.5**	**81.5**	**81.0**	**71.9**	**90.9**	**87.6**	**72.3**	**83.6**
Industrially Processed Exports	20.8	11.4	8.0	11.2	10.1	12.2	7.4	9.5	20.6	10.6
Mining Product Exports	17.3	18.9	19.6	7.0	4.9	12.4	0.2	2.2	6.6	5.5
Sector Unspecified Export	7.2	0.7	0.9	0.3	4.0	3.5	1.5	0.8	0.5	0.3

Source: MEDaC

From the commodity and Sectoral structures of the country's exports we see that coffee, raw hides and skins, chat and pulses & oil seeds dominate the raw agricultural product export sector. During the period 1991/92-2000/01,the share of the sector from the total merchandise exports went as high as 90.9 percent in 1997/98. The lowest share recorded was in 1991/92 which was about 54.7percent.

The industrial export sector is dominated by processed hides and skin, food and textile products. Manufactured exports are negligible, and have declined from around 21 percent of the merchandise exports in1991/92 to less than 8 percent in 1997/98(although some improvement was seen in 1999/00). Manufactured exports, which are used as a driver for a rapid structural transformation of production is very weak in Ethiopia. The country is the least industrialized country in the world and ranks lowest in terms of manufacturing value

added (MVA) per capita in 1998.Ethiopia's relative position in terms of manufactured products and exports is reported below.

Table 2.3c Relative Performance of Ethiopia's manufacturing Sector (1998)

Country	MVA per Capita ($)	Manuf. Exports per Capita ($)	Total Manufac. Exports ($m.)	Share of complex* products in MVA (Percent)	Share of complex* products in MVA (Percent)
Ethiopia	7.9	0.8	49	9.0	0.1
Kenya	36.6	28.3	829	24.0	7.6
Tanzania	15.8	2.9	93	25.0	1.5
Uganda	24.3	0.9	19	15.0	0.8
Egypt	326.1	36.5	2,242	39.0	8.8
Mauritius	738.9	1,433.7	1,602	12.0	1.4
China	287.0	135.4	167,681	51.0	36.6

Source: Developing Exports to Promote Growth World Bank (2001)

**The share of high and medium technology products in MVA or manufactured exports measures technological sophistication. The remainder is made up of resource based and low technology products.*

Table 2.3c illustrates the small size of the manufacturing sector and the minimal technological sophistication of the export sector, suggesting that the economy has to struggle harder to build the necessary capabilities-operational, technical, managerial-to operate in export markets[World Bank, 2001].

The performance of the mining sector (dominated by gold and petroleum products) declined in recent years from that of the early 1990s. The highest share was recorded in 1993/94,

which was about 19.6 percent of the total merchandise exports, the lowest being 0.2 percent in 1997/98.

Generally much is expected from the country to shift from predominantly primary agricultural exports to semi-processed and processed exports if structural transformation and economic growth is to be realized.

2.4 Export Promotion Efforts in Ethiopia

2.4.1 Pre 1991/92

The policy adopted in the pre-1991/92 period (both in the Imperial and Military government of Ethiopia) was characterized by strongly inward-oriented development strategy, which used a prolonged over valuation of the Birr, high tariff rates, extensive foreign exchange control and other non tariff barriers as well as heavy taxation on exports. These polices are likely to have a detrimental impact on export by influencing directly or indirectly the profitability and competitiveness of exports.

Even though both previous government of Ethiopia were commonly pursuing import substitution strategy and export sector was secondary for them in their economic development plans, it doesn't mean that they didn't make any effort to promote and diversify the country's exports. They made effort to promote exports and diversify the entire export commodities as shown in the three different five-year development plans of the Imperial Government of Ethiopia (IGE) and in the Derge's ten year perspective plan. The first five-year development plan (1957/58-1962/63) gave priority to import-substitution industrial

promotion and infrastructural facilities like road development while it gave minor attention for export promotion.

Regarding exports the plan stated the need for increasing exports by making full use of the potential of agriculture and increased imports to be financed as much as possible by increased exports. The measures under taken to achieve the plan were relaxation of the then existing foreign exchange regulation, adjustments in export duties and freight rate and improvement in export goods quality and sanitary conditions. But in practice no adequate attention was provided to export development. As a result, at the end of the plan period expanded deficit in merchandise trade balance was observed. To correct this imbalance the second-five year plan was set in place with adequate attention paid for export development through diversification.

The second five-year development plan stated the export sector to rely mainly on traditional export products such as coffee, hides and skins, oil seed and pulses and others. It also stipulated an important role to be played by new export products of industrial origins and mining products. In this process, exports were expected to attain a larger degree of diversification in which semi-manufactured and manufactured industrial goods would play an increasing role. Such a move would facilitate the expansion of the country's export through strengthening their world markets acceptance and competitiveness and greatly contribute to the improvement of the already affected terms of trade and balance of payment status of the nation. This plan also set the share of agricultural exports to exhibit a decrease from 93.6 percent in 1962/63 of the total export to 72.3percent in 1967/68 while the share of manufactured products was planed to increase from 5.2 to 24.2 percent during the same year.

To implement this plan, incentives like profit/income tax holidays, export trade licensing simplification, restructuring and strengthening of chamber of commerce, establishment of trade attaches in Ethiopian Embassies and missions all over the world, and provision of market study trainings were offered for investors who engage themselves in the production of non-traditional export items.

The third-five year development plan (1969/70-1973/74) gave a great deal of attention for foreign trade in general and for the export sub-sector development through diversifying variety of export items in particular. In this plan period, agricultural product exports were expected to decrease to75 percent in1973/74 from that of 86 percent in1967/68. Through the addition of new agricultural products in the export basket, the share of coffee was envisaged to fall from 55 to 40 percent at the end of the plan period.

In order to increase the exports of manufactured item, special emphasis was given for the strengthening of hides and skins processing. The plan also stipulated diversification of exports mineral products such as potash, gold and others. It was believed that such a move would help the country realize balance of payment improvement. During the plan period, export was envisaged to double with reduced cost of production and improved quality. In addition the plan stipulated a three-fold increase in non-agricultural exports such as textiles, wood products, building materials, non-metallic products and chemical industry products. To implement the plan, the then existing system of duty draw back on direct raw materials and other components of export product was revised. In addition, both fiscal and monetary incentives were offered for both domestic and foreign investors engaged in export-goods production.

In sum, although attempts were made in all the three development plans of the Imperial Government of Ethiopia, this didn't bring the anticipated export promotion and diversification.

The military government who came to power in 1974/75 under took a ten-year perspective plan of 1985/86-1994/95. The main objective of the plan was to orient the country's export structure towards manufactured products from the already existing primary exports of agricultural product, to expand substantially the country's foreign exchange earnings through exporting diversified industrial, mining and agricultural products and to diversify export markets and reduce over dependence on traditional ones.

In order to achieve its objectives, the military government employed a multitude of strategies. These include promotion of exports through the provision of favorable tax, tariffs and foreign exchange rate measures, improving exports in terms of quality, quantity and variety and providing current information on World market prices and other factors in the international market to exporters and producers. In order to publicize and expand the market for the country's export products, the government took part in international trade fairs and encouraged the export of manufactured products and strengthened chambers of commerce and other institutions which are directly engaged in promoting export trade.

The ten-year perspective plan stipulated the share of traditional exports (coffee, hides & skins, and oil seeds and pulses) to decrease from 73.5 percent in 1985/86 to 53.2 percent in 1994/95,while the share of other export products to rise from 26.5 to 46.8 percent in the plan

period. In addition, to counter balance the negative effect of distortionary polices and hence to secure growth in export, the government introduced an export subsidy in 1983/84.

The fund for the subsidy was raised by imposing a 5 percent ad-valorem tax on import. Furthermore, the export sector was given a preferential interest rate of 6 percent on bank loans against 8 percent for importing activities. However, the subsidy introduced was not sufficient in terms of coverage and amount to neutralize the anti-export bias incentive structure.

To summarize, despite the measures taken by both the Imperial and the Derge regimes to diversify the export basket and promote exports, the Ethiopian export products remain undiversified and are still concentrated on very few primary products like coffee, hides & skins oil seeds & pulses and chat. This is because both regimes used overvalued exchange rate, high rate of tariffs and other trade restrictive commercial policies that developed strong anti-export bias, and strongly in-ward oriented trade policies favoring import substitution than export promotion. Although export promotion incentives like export subsidy and others were provided, these have neither resulted in the export diversification nor in the expansion of the existing export volume. This was so because the incentive provided were not enough to counter-balance the anti-export-bias caused by currency overvaluation, high duties (tariffs), taxes and others.

2.4.2 Post 1991/92

In 1991 the transitional government of Ethiopia (TGE) together with the IMF and the World Bank has undertaken liberalization and structural adjustment program to address the internal

and external imbalances of the economy. In particular trade policy reform was undertaken which aimed at promoting exports through diversifying the country's commodity exports.

Among the measures undertaken the following were important ones.

a) Devaluation of the Ethiopian currency by more than 140 percent in terms of US dollar to make exports competitive and promote export trade. In addition a weekly auction of foreign exchange was introduced and to guarantee that the incentive pass to the peasants, the government set a floor price for coffee, haricot bean and sesame seed.

b) The tariff regime was continuously revised and was reduced on a stage basis from a maximum of 230 percent to50 percent. Similarly, to nullify the anti-export bias, the state lifted a 2 percent transaction tax on non-coffee exports and abandoned the direct financial subsidy on export.

c) The import and export licensing system were simplified and become more transparent so as to encourage new entrants in the export market. The range of goods and services covered by the auction has been progressively extended and finally fully liberalized.

d) A duty draw back scheme was introduced where by exporters are re-funded the tax and duty they paid on the inputs and raw materials used in export production. This is to provide exporters a free trade status on their import of intermediate inputs and encourage non-traditional export products, especially that of manufactured goods. But the effectiveness of the scheme on export is constrained by lengthy administrative requirement to get re-funded.

e) A foreign exchange retention scheme has been introduced which entitles exporters to retain 10 percent of their earning to hold in their account and to sell the 40 percent at a competitive rate, while submitting the remaining 50 percent directly to the National Bank. But the scheme may not be beneficial in view of the usual control over the use of the retained 10 percent and for the fact that it ties up the working capital.

f) A preferential interest rate scheme is also introduced for exporters, which is less by 3.5 percent compared to the interest rate paid on non-export activity loans. Such low preferential interest rate scheme is provided for exporters because it is believed to strengthen the country's export diversification efforts.

g) State exporting enterprises were provided a managerial autonomy but deprived of a monopoly power. This creates a conducive environment for private exporters and puts them at equal footing with public enterprises.

h) The Ethiopian Export Promotion Agency is established very recently as an autonomous body by proclamation No.132/1998. The main objective of the agency is to promote the country's exports. By doing so it is believed to achieve export diversification in agricultural, industrial and mining sectors of the nation's economy.

As a result of these trade policy reforms a remarkable decrease in the anti-export-bias incentive structure and an increase in export volume and earning was realized.

Table 2.4.2 shows the effective exchange rate for exportable (EER^*_x)[4], the effective exchange rate for importables (EER_m) and the anti-export-bias incentive structure (EERm/EERx) for the pre and post 1991/92 periods.

Table 2.4.2a Effective exchange rate (Birr/Dollar) and anti-export-bias (EER_m/EER_x).

Item	1985/86-1991/92 Average	1992/93-1998/99 Average	Percentage Change (%)
Effective Exchange rate for exports (EER_x)	1.89	5.82	208% increase
Effective Exchange rate for imports (EER_m)	3.74	8.39	124% increase
Bias Against Exports (EER_m/EER_x).	1.98	1.44	27% decrease

Source: MEDaC.

As can be seen from the Table, the reform measures raised the EER_x by 208% compared to the pre-reform period. This indicates that the reform has created an enabling environment for the export sector. In addition, since the reform, the anti-export bias incentive structure (EER_m/EER_x) has shown enormous improvement (a decline by 27% from the pre-reform period). However, there is still an anti-export bias incentive structure, which implies a need to take additional measures to fully achieve neutral incentive system that is conducive for effective export promotion.

[4] For definition and calculation of EER_x, EER_m and EER_m/EER_x see Annex 1.

3. REVIEW OF LITERATURE

3.1 Theoretical Literature

The idea that international trade brings economic growth and increases the welfare of a nation started during the 17th century by a group of merchants, government officials and philosophers who advocated an economic philosophy known as mercantilism. According to mercantilists, for a nation to become rich and powerful, it has to export more than it imports where the resulting export surplus is used to purchase precious metals like gold and silver. Thus the government in its power has to control imports and stimulate the nation's exports.

Adam smith attacked the main mercantilists' views and proposed the classical theory of international trade based on the concept of absolute advantage model. According to him stock of human, man-made and natural resources rather than stock of precious metals were the true measure of the wealth of a nation and argued that the wealth of a nation can be expanded if the government would abandon mercantilist controls. In addition, he showed that trade can make a nation better off with making another worse off [see Mannur, 1996 p.21].

Absolute advantage, however, explains only a very small part of the world trade today i.e. trade between developed and developing countries. Most of the world trade especially trade among developed countries could not be explained by absolute advantage [Salvatore,1990].

The model of comparative advantage was later articulated by David Ricardo to replace the principle of absolute advantage. According to this model, a country will specialize in the

production and export of the commodity in which it has a comparative advantage i.e. the commodity that it can produce at the lowest relative cost.

The comparative advantage model is based on a set of assumptions one of which is the labor theory of value. According to the labor theory of value, (a) either labor is the only factor of production or is used in the same fixed proportion (b) labor is homogeneous i.e. of only one type. Since neither of these assumptions is true the labor theory of value must be rejected. In addition to the above argument, the comparative advantage model states that trade depends on the terms of trade which in turn is determined by internal cost ratios in two trading countries i.e. by supply conditions alone. This obviously is flawed since terms of trade are not only determined by supply factors but also by demand forces. In order to modify the Ricardian theory, the principle of reciprocal demand was formulated by J.S Mill and later was developed by Edgeworth and Marshall. According to the reciprocal demand theory, it is both the demand and supply conditions which determine the terms of trade and hence trade between countries. However, the theory says nothing about the gains to be obtained through trade, it merely fills some gaps which existed in the early classical theory.

As an attempt to modify the classical theory of trade, the factor endowment theory of Eli Hecksher and Berti Ohlin (H-O), of external trade evolved. According to this theory, different products require productive factors in different relative proportions and Countries have different endowments of factors of production. Some countries have large amounts of capital (capital abundant) while others have little capital and much labor (labor abundant).

This theory argues that each country has a comparative advantage in that commodity which uses the country's abundant factor. Thus capital abundant countries should specialize in the production and export of capital-intensive goods while labor abundant countries should specialize in the production and export of labor-intensive commodities.

This theory, which played a predominant role in the early literature of trade theory, encouraged third world countries to focus on their labor and land intensive primary product exports. It was argued that by exchanging these primary products for manufactured goods of the developed countries, third world nations could realize enormous benefits obtained from trade with the richer nations.

Although the factor endowment theory contributed a lot to the modern theory of international trade, the validity of the theory is based on a set of assumptions that are unlikely to hold. Specifically, six basic assumptions of the neo-classical trade model are criticized in explaining trade between the developed and the developing countries[5].

In recent years economists have therefore challenged the static neo-classical model and developed new models that explain trade between developed and developing countries. Unlike the traditional model which is assumed to apply to all nations, the so called North-South trade models focus specifically on trade relation between rich and poor countries [see Ocampo, 1980].

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[5] For the critics of the basic assumptions in explaining trade between the developed and the developing countries see Todaro (1994) p. 454

Other theories of trade have also been put forward which attempt to either supplement the neo- classical trade theory or replace it with different approaches. These include the vent for surplus theory of international trade [Myint, 1958], preference similarity or overlapping demand theory developed by Linder (1961), the technological gap and the product cycle theory articulated by Posner (1961) and Vernon (1966), respectively [6].

These theories that are referred as complementary (alternative) theories do not suggest that the neo-classical trade model should be discarded. They are not comprehensive and try to fill a portion of the gap in the international trade that the traditional classical theory couldn't explain.

The notion of trade as an "engine of growth" is given much emphasis by many economists. Proponents of the traditional theory of trade still contend that trade can contribute substantially to the development of primary-exporting countries. It is argued that the growth of many developed countries like the United States, Canada, Australia, New Zealand (referred as regions of recent settlement), which were once developing nations is mainly attributed to international trade. However other economists strongly believe that the accrual of the gains from international trade is biased in favor of the advanced industrial countries and that foreign trade has inhibited industrial development in poor nations. Thus these economists contend that international trade as being completely irrelevant for developing nations and the development process.

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[6] For a good discussion of these trade theories and others see [Sodersten (1994) and Salvatore (1990)].

The controversy on the notion of trade as an engine of growth led developing countries to pursue different trade strategies for development. In what follows we present the two trade policies adopted by many developing countries namely, import substitution and export promotion and the discussion follows Todaro (1994).

3.2 Trade Strategies for Development: Export Promotion Versus Import Substitution

In a broader sense the trade policies that have been undertaken by developing countries for the past four decades can be categorized as outward-looking and inward-looking development policies. Proponents of the view that trade brings development encourage outward looking development policies. According to Streeten (1973), quoted in Todaro (1994), the outward-looking development policies " encourage not only free trade but also free movement of capital, workers enterprises and students,…, the multinational enterprises, and open system of communications" (p. 484). In contrast, opponents of the traditional view advocate an inward-looking development policy. This policy stresses the need for LDCs to implement their own styles of development and adopt indigenous technologies appropriate to their resource endowments. Thus by restricting trade, the movement of people and communication, multinational enterprises and their wrong technology, greater self-reliance can be realized.

Within these broad trade strategies, we have protectionists who advocate inward-looking import substitution strategies and free traders that are proponents of outward looking export promotion strategies. According to advocates of import substitution (IS), substitution of imported items by domestic production is supposed to take place in two stages. The first

stage involves substitution of previously imported simple consumer goods while the second involves substituting wider range of more sophisticated manufactured items by domestic production using high tariffs and quotas on these imports.

According to Salvtore (1990), three advantages of the IS strategy can be cited:

> "1) The market for the industrial product already exists, as evidenced by import of the commodity, so that risks are reduced in setting up an industry to replace imports. 2) It is easier for developing nations to protect their domestic market against foreign competition than to force the developed nations to lower trade barriers against their manufactured exports. 3) Foreign firms are induced to establish the so-called " tariff factories" to overcome the tariff wall of developing nations" (p. 327).

Furthermore, the IS strategy enables a country to have greater domestic industrial diversification and provides the ability to export previously protected manufactured goods as economies of scale, low labor costs, and learning by doing cause domestic prices to become more competitive with world prices.

During the 1950s and 1960s, the first export pessimism which characterized the thinking of most influential development economists Raul Prebish (1952) and Ragnar Nurkse (1959), led to the adoption of the IS trade strategy by many developing countries. According to Prebish, the terms of trade for primary product exports are deteriorating and hence the main exports of LDCs are declining regardless of the policies of developing countries. Nurkse's export pessimism arose from the view that markets of developed countries could not accommodate imports on a sufficient scale as developing countries accelerated their development [see

Bhagwati, (1988)]. This old brand of export pessimism linked external conditions with internal expansion. Specifically, Todaro (1994) argues that at least five external (demand side) factors inhibit the growth of LDC's primary exports.

> " First, the per capita income elasticities of demand for agricultural food stuffs and raw materials are relatively low compared with those for fuels, certain minerals and manufactures. …Second, developed-country population growth rates are at the replacement level, so little expansion can be expected from this source. … Third, the price elasticity of demand for most non-fuel primary commodities appears to be relatively low. … The fourth and the fifth factors working against the long-run expansion of LDC primary-product export earnings- the development of synthetic substitutes and the growth of agricultural protection in the developed countries are perhaps the most important (p. 487-88).

In addition it is argued that markets would not be able to absorb all the exports if developing countries shifted to an EP strategy at the same time. However, the success of some developing countries especially the four Far Eastern economies has refuted the validity of the first export pessimism. According to Riedel (1984), unlike the view of export pessimists, the export performance of these and other countries is explained by domestic incentives (supply) more than by external (demand) conditions.

In sum, although the first export pessimism was unjustified, it provided the rational for the adoption of the IS strategy in many developed countries. This strategy attempts to replace

commodities that are being imported, usually manufactured consumer goods by domestically produced items. Hence by erecting tariff barriers or quota on certain important commodities, it is argued that domestic industries will be able to reap the benefits of large-scale production and lower costs (infant industry argument) or that the balance of payment will be improved as fewer consumer goods are imported. However the growth performance of many developing countries has proved the IS strategy to be largely unsuccessful. According to Todaro (1994) the strategy led to five undesirable outcomes.

First, many IS industries remained inefficient and costly to operate as they become accustomed to protection from foreign competition through tariff walls. Second, the main benefits of the IS process is accrued to foreign firms that were operating behind tariff walls and take advantage of free tax and investment incentives. The local industrialists, however, benefited very little from what is left over by foreign firms after remitting the gains abroad. Third, the IS strategy led to a setup of capital intensive industries with little labor absorption and thus aggravated the unemployment problem of LDCs. In addition the increasing need for imported capital-good inputs and intermediate products further intensified the balance of payment deficits and the debt problem. Fourth, to lower the domestic currency price of their imports and hence encourage local manufacturing, many LDCs overvalued their exchange rate. This penalized the primary product export sector by raising the price of exports in terms of foreign currencies. As a result many LDCs experienced a decline in their earning from traditional exports. Fifth, in contrast to what has been conceived the IS strategy inhibited industrialization. This is because most infant industries didn't grow behind protective tariffs.

The overall result was that those developing nations that tried industrialization through import substitution grew at much slower rate than the few developing countries that followed an export-oriented policy. As Kruger (1985, p. 22) stated: "… development strategy that relies on integration with the world economy, rather than insulation from it, is not only feasible, but preferable".

As a result many developing nations began to pay more attention to export-oriented policy. The benefits or returns of this strategy are thought to be both numerous and widespread [Bhagwati, 1988 and Kruger, 1985]. It is argued that trade according to the principle of comparative advantage yields efficiency in terms of resource allocation. However the gains from efficient resource allocation is realized only when governments remove biases against exports. Another gain from adopting the EP strategy relates to the economies of scale issue. Advocates of this strategy argue that domestic markets are too small to allow firms to achieve optimal scale. It is through production for sale to foreign markets that firms can achieve increasing returns and, eventually, optimal scale [Grabowski, 1994].

Another benefits of the EP strategy relates to its dynamic effects. According to Bhagwati (1988), the EP strategy may lead to more competition and less-sheltered markets and hence more innovations which bring a positive externality to the rest of the economy. According to Grabowski (1994), the EP strategy removes the distorting impact of government policies in their attempt to guarantee the availability of the domestic market for domestic producers. Thus activities by the state that are likely to distort the market are restricted in the EP strategy of development.

Another possible dynamic impact of an EP trade strategy is the ability to import foreign technology. With the growth of exports new technologies that are important for development can be imported. Thus, the overall rate of growth is likely to be increased as the rate of technical innovation increases. For these reasons, advocators of an EP strategy proposes a move toward outward oriented policies as best strategies for promoting growth. In this respect, many studies have been made to validate whether an EP trade strategy is a superior policy or not.

Most of these studies confirmed that countries that adopted export led trade strategy performed better in terms of growth than those that adopted the IS trade strategy. This led many developing countries to look towards the EP strategy. However, the desire to shift to the EP strategy in developing countries is undermined by the second brand of export pessimism. According to Bhagwati (1988) there are two sets of factors generating this pessimism:

> "a) Objective events such as the slowing down of the world economy since the 1970s and the resurgence of powerful protectionist sentiments in the industrial countries, and b) New intellectual and academic arguments in support of inward looking trade policies in the developing countries" (p.41).

This second export pessimism rests on the notion that regardless of the absorptive capacity for the exports of LDCs, protectionist measures in the industrial countries will inhibit exports of developing countries and makes the pursuit of the EP strategy inefficient. However, the protectionist threat was not serious to force developing countries turn away from embracing

the EP strategy. This is evidenced by the fact that the exports from many developed countries continued to grow in spite of protectionist measures. As Kruger (1980) has stated [quoted in Meier, 1985]:

> " If such protectionist measures are taken, they will lower the rate of return to outward oriented trade strategies. They will however, for the foreseeable future, still leave the rate distinctly above the returns from a policy of persisting with inward-oriented growth" (p. 482).

The IS and EP strategies have often been viewed as opposites or completely separate theoretical categories. According to Grabowski (1994), however, these strategies are not opposite, but simply alternative ways for stimulating growth in the size of markets for manufactured goods.

In both strategies the main concern is the availability of sufficient market to enable firms realize an optimal scale of production. The IS strategy through tariff and non-tariff barriers creates a domestic demand for domestic industries while the export market permits industries to fully utilize the optimal scale of production. Grabowski (1994) goes on to argue that:

> "… import substitution is generally necessary for outward growth to succeed. Most important, the success of import substitution is linked to the development of productivity in the agricultural sector. If the later fails to grow rapidly, import substitution will fail and successful export-based growth will not occur" (p. 536).

This was justified by the success of countries like Taiwan and South Korea who successfully completed the transition to outward-oriented development via import substitution.

So far we have dealt the two trade strategies IS and EP, the superiority of the EP strategy over the IS based on the experience of many LDCs and an alternative strategy which views IS to precede the EP strategy. Since our aim is to test whether export growth leads to economic growth, in what follows we examine the channels through which exports may affect economic growth.

3.3 Export and Economic Growth

The relationship between export performance and economic growth is an area that has been given much attention by development economists. The results of different studies on export expansion and economic growth has broadly classified economists into those that support the hypothesis that export growth has a positive impact on economic growth and those that doubt the existence of such relationship. The central question to be addressed in this section is "how does export growth influence economic growth?"

Adam Smith's theory of international trade assumes that a previously isolated country about to enter into international possesses a surplus productive capacity above the requirements of domestic consumption. With trade the country is able to reallocate the given resources as to provide the new effective demand for the output of the surplus resources. Hence, a surplus productive capacity suitable for the export market appears as a costless means of acquiring imports and expanding domestic economic activity [Meier, 1995 and Myint, 1958].

One of the export-based models formulated to present a dynamic view of how an economy's growth can be enhanced by expansion of its exports is the staple theory of growth[7]. According to this theory, the discovery of a primary commodity in which a country has a comparative advantage or an increase in demand for its comparative advantage commodity leads to an expansion of resource-based export commodity which in turn induces a higher growth of aggregate and per capita income. The export of the primary product also has effects on the rest of the economy through reducing unemployment and underemployment, inducing a higher rate of domestic saving and investment, attracting an inflow of factor inputs into the expanding export sector, and establishing links with other sectors of the economy [Meier 1995, p.460].

Feder (1982) views a given economy as if it consists of two distinct sectors: an export and non-export sector. According to him the marginal factor productivities are significantly higher in the former than the latter. This arises from inter-sectoral beneficial externalities (capacity utilization, economics of scale incentives provided for technological improvement and efficient management due to competitive pressures from abroad) generated by the export sector. Thus, growth can be generated by reallocation of the existing resources from the less-efficient non-export sector to the higher productivity export sector.

According to Kavoussi (1984) and Moschos (1987), export expansion raises factor productivity and leads to various benefits, such as more efficient use of resources and

[7] The term staple according to Meier (1995) designates a raw material or resource- intensive commodity occupying a dominant position in the country's exports.

adoption of technological innovations, resulting from foreign competition, greater capacity utilization and gains of scale effects associated with large international markets.

Jung and Marshal (1985) argue that growth in real exports tends to cause growth in real GNP for three reasons. First, export growth may represent an increase in the demand for the country's output and thus serve to increase real GNP. Second, an increase in exports may loosen a binding foreign exchange constraint and allow increases in productive intermediate imports and hence result in the growth of output. Third, export growth may result in enhanced efficiency and thus may lead to greater output.

Chow (1987) suggests that in small open economies, export growth can expand their limited domestic markets, and contribute to the economics of scale necessary for industrial developments. Furthermore, export growth integrates domestic economy with regional and/or global economies thereby expanding the dimension of competition to the international markets. Competition promotes resource allocation in developing countries as they transform from less productive farming sector to relatively more productive manufacturing sector. Therefore, factor productivities are improved through export growth.

According to the "balanced growth" doctrine, there is a vicious circle present, which acts as a stumbling block in attaining self-sustaining growth. Rosenstein-Rodan (1943) and others quoted in [Krishna, 1998 et.al] argue that:

> "Firms did not industrialize because there was no market for their goods and there was no market for their goods because income was low and income was low because firms did not industrialize. This kind of low level equilibrium, it was argued, could be broken by the simultaneous industrialization of large part of the economy, and any failure to industrialize was essentially viewed as a coordination problem. Of course, exports, by breaking this circle of causation, could provide an important avenue for growth" [p. 1].

On the other hand the "unbalanced growth" doctrine led by Albert O. Hirshman (1958), while agreeing on the existence of a vicious circle, argue that industrialization of certain "leading" sectors would pull along the rest of the economy. Hence instead of industrialization of a large number of sectors, what was needed was the industrialization of the "leading" sectors. Then through backward and forward linkages these sectors would initiate the industrialization of the rest of the economy. Exports, especially in such leading sectors, could start the industrialization process.

Esfahani (1991) emphasized that the first and foremost purpose of exports is to relieve the import shortage that many developing countries confront. According to him although the externality effect of exports (efficiency of resource allocation, economy of scale and various labor training effects) may carry some weights of their own, the major purpose of exports to GDP growth is alleviating the import shortages, which restrict the growth of many LDCs. Thus exports can fill the "foreign exchange gap" that was perceived as obstruction to growth.

According to [Krishna, 1998 et.al] exporting firms, especially multinationals could provide externalities by serving as conduits for the dissemination of world class technology to less dynamic domestically oriented firms. Because international markets for technology and knowledge are imperfect, exporting helps to overcome some imperfections and permits access to international best-practice technology through other mechanisms.

In general all the above theories explain the different channels through which exports can induce economic growth. The empirical studies, which substantiate the above arguments are presented below.

3.4 Empirical Literature

The contribution of export growth to economic growth has been tested by different economists using different econometric techniques. All the tests that have been carried out are broadly classified as those that are based on cross-country analysis and those that are based on country specific time series studies.

3.4.1 Cross-sectional Studies

Using the data for 41 less developed countries for the period 1950-73, Michael (1977) tested the hypothesis that "export growth accelerates economic growth" using spearman rank correlation coefficient. He used the rate of growth of exports share of GDP and output growth to avoid spurious results stemming from the fact that exports are a component of GDP. The spearman rank correlation coefficient for the sample as a whole was found to be 0.38, which was significant at 1% level.

However the positive association of the economy's growth with the growth of export share is particularly strong among the more developed countries and does not exist at all among the less developed countries. Thus, he concluded that growth in output is affected by export performance once countries achieve some minimum level of development.

Similarly Balassa (1978) tested the hypothesis using the rank correlation methodology. He used pooled data on eleven developing countries for 1960-73. Again he found a positive correlation coefficient between growth of exports and output growth.

According to Edwards (1993) these results were criticized on three accounts:

> " First, by looking at correlation coefficient, the possible role of other factors on growth was ignored. Second, no attempt was made to distinguish between endogenous and exogenous variables. Third, these analyses were not based on firm theoretical grounds (p. 1379-80).

In order to deal with the above criticisms, a number of authors attempted to carry out the test by formulating a conceptual framework based on neo-classical production function.

For instance, Tyler (1981) took a sample of 55 middle-income developing countries for the period 1960-77 to investigate the impact of exports on economic growth. In his study the low income countries were eliminated because of the idea that a certain level of development is required for exports to bring economic growth. The regression result demonstrated a positive and significant association between export growth and economic growth.

Feder (1982) tested the export-growth relationship for a group of semi-industrialized less developed countries for the period 1964-73. He developed an analytical framework, incorporating the possibility that the marginal factor productivities are not equal in the export and non-export sectors of the economy. The regression result indicated that the coefficient of the export variable is about 0.42, which is significant at 5% level. This led to a strong support to the hypothesis that marginal factor productivities in the export sector are higher than in the non-export sector. Using the mean values of the sample variables he decomposed the average rate of GDP growth for the period under consideration. The contribution of exports is further decomposed into the gain in growth due to beneficial externalities affecting the non-export sector and the gain due to other elements underlying higher factor productivity in the export sector. Accordingly, the inter-sectoral externality effect of exports is found to be higher than the effect of higher factor productivity in the export sector.

In order to examine the relationship between export expansion and economic growth, Kavoussi (1984) took a sample of seventy-three low and middle-income developing countries for the years 1960-78. From the regression result he found that in large and heterogeneous sample of developing countries he considered, higher rate of economic growth is associated with higher rates of export growth. He also demonstrated that the positive correlation between exports and growth is not limited to middle-income countries (as argued by the previous authors) but holds for low-income countries as well. Furthermore, his result has shown that primary exports play an important role in the growth process of the low-income countries. On the other hand his finding seem to indicate that exports of manufactured goods to be strongly associated with economic growth for the middle income countries.

Balassa (1985) examined the export-growth relationship during the period of external shock (1973-78) for a sample of 43 developing countries. It has been suggested that while export orientation brought benefits during the period of rapid world economic growth, such would not be the case once the world economic environment deteriorated because of external shocks. So, having found a positive impact of exports on economic growth for 11 semi-industrialized countries, for the pre-1973 period, he attempted to re-examine the existence of such a relationship for the post-1973 period. Utilizing the same framework and extending the scope of the investigation to countries at lower level of development, he found that the rate of growth of exports significantly affected the rate of economic growth and the numerical magnitude of this effect increased compared to the earlier period. His results further indicate the possibilities for the low-income countries to accelerate their economic growth by employing an outward oriented policy as well as the advantages of relying on manufactured exports.

However, Balassa's (1985) finding that the contribution of exports to growth has increased in the post-1973 period as compared to the pre-1973 was criticized. According to Rana (1988), although his 'pre-post' comparison may be theoretically right, the empirical results need a close scrutiny. This is because of the heterogeneity of the samples considered. While the pre-1973 sample comprised pooled data from 11 semi-industrialized countries, the post-1973 sample is much broader and comprises cross-sectional data from 43 low and middle-income countries. Hence it is unrealistic to assume that the production function in the pre-1973 to be homogeneous across such a wide range of countries and over different time periods, and so the results of his 'pre-post' comparison could be misleading.

To overcome this problem, he re-examined the export-growth relationship for the pre-1973 and post-1973 periods by using a balanced sample of 43 countries in each period. He also employed other estimation techniques to adjust for the problems caused by the pooling of data by developing an error component model. In contrast to Balassa's finding, the empirical results indicated the coefficient of the export variable to decline in all cases. He concluded that exports would have less effect on growth when the world environment is unfavorable.

Ram (1985) used a fairly large sample of 73 LDCs to investigate the contribution of exports to economic growth for the periods 1960-70 and 1970-77, separately. Furthermore in order to examine the widely held belief that exports are not important to economic growth in the low-income LDCs, he considered low and middle-income countries for both periods. The results of his study indicated export performance to be important to economic growth. In addition his results suggested that the importance of exports to have increased during the 1970s. While the impact of export on growth does seem small in the low-income LDCs over the period 1960-70, the positive impact of exports on growth is large and almost equal in magnitude for the two groups for the period 1970-77. Again using two plausible growth models (the "Feder Type" and the standard Neo-Classical) for 88 LDCs and the period for 1960-82, Ram (1987), found a strong positive impact of exports on economic growth.

In order to test the hypothesis of the existence of a critical level of development, which causes a break in the relationship between export expansion and economic growth, Moshos (1989) employed a switching regression framework for a selected sample of LDCs. The result obtained on the basis of cross-sectional data do not support the view that the positive effect of export expansion on economic growth is limited to more advanced developing

economies and that its effect is non-existent among less advanced countries. On the contrary, the evidence indicates that output growth is influenced positively by export expansion for both more advanced and less advanced developing countries.

To test the export-growth relationship, Odedokun (1991) employed crossectional data for 85 countries at different levels of economic development and different regions of Sub-Saharan Africa, Asia, Western Hemisphere and others. From the regression result, export is found to be an engine of growth for all LDCs combined and the positive relationship between export expansion and economic growth is stronger in high-income LDCs than in other LDCs.

According to Sheehey (1992), the results of a substantial number of previous studies that showed the positive impact of exports on economic growth are biased by a built-in correlation between exports and GDP. Thus, he tested the export-growth relationship for 53 non-oil developing countries for a period the period 1960-81 using an alternative export variables not subject to bias. He found that rather than offering the widely available benefits suggested in previous studies, exports could result in a lower rate of output growth during a period of weak world demand. The positive effects of shifting more resources into exports were confined to a limited number of more industrialized countries in the 1960s, a period of strong growth for world trade.

3.4.2 Time Series Studies

All the above studies used cross sectional data to test the impact of exports on economic growth. However Rati (1987) argues:

> "Estimates obtained from cross sectional data are useful in many ways, especially when the number of observations for individual countries are small. However, there is evidence of tremendous parametric variations across countries in regard to estimates of the growth equations in such contexts. Imposition of a common structure in the form of cross sectional models can be
> a drastic simplification, and important parametric differences could be masked in cross-sectional estimates even when the sample chosen look fairly homogeneous with reference to certain prior criteria" (p. 52)

Therefore it is important to make an assessment of the export-growth nexus for individual countries on the basis of time series data. Accordingly, he made a beginning toward considering the export-growth nexus by estimating two growth models for 88 LDCs separately for the period 1960-82. The country specific results indicated that the predominant export-growth connection is positive. In the entire sample of 88 LDCs, the coefficient of the export variable is positive for more than 80% of the countries, and nearly one-half of these positive coefficients are statistically significant at least at 10% level.

Other country specific studies were also conducted to test the export-growth relationship. Begum and Shamsuddin (1998) have tested the relationship for Bangladesh for 1961-92. They employed the "Feder type" production function in their analysis. Their main finding was that the sum of the productivity differential and externality effects of the export sector is positive implying that reallocation of resources from the non-export to export sector will enhance the productive capacity of the economy. Therefore through this effect export growth can induce output growth.

Dodaro (1993) employed a simple model developed by Fajana (1990) to test the relationship between exports and economic growth for 43 LDCs for the period 1967-1986. Unlike most of the previous studies that relied on cross-sectional analysis, the results obtained from the regression analysis suggest a weak relationship between exports and economic growth. Although a positive and significant relationship does emerge for slightly more than 50% of the countries considered, for majority of them the coefficients are significant at the 10% level.

All of the above studies both from cross sectional and time series have found a significant positive impact of exports on economic growth. These studies have interpreted results in regressions of output variables on export variables as providing support for an export promotion development strategy. According to Jung and Marshal (1985), however, such interpretation is questionable since these regressions provide no means of determining the direction of causality. They criticize the usual approach that most of the studies followed (regressing real growth on contemporaneous real export growth) and to infer support for the proposition that export growth causes output growth from the significance of the export growth coefficient. According to them such an approach contains a serious methodological weakness. Although the hypothesis of export promotion clearly implies a correlation between export and real GNP growth, an equally plausible hypothesis is that output growth causes export growth. To substantiate their argument they perform causality test between export and economic growth for 37 developing countries. The time series results for the countries considered provided evidence in favor of export promotion in only four instances. Even countries like Korea, Taiwan and Brazil whose tremendous growth was largely attributed to

export growth provided no statistical support for the export-led growth hypothesis. This strongly suggests that the evidence in favor of export promotion is weaker than previous studies have indicated.

Chow (1987) investigated the causal relationship between export growth and industrial development during the 1960s and 1970s for eight newly industrialized countries (NIC)[8]. The result of Sim's causality test indicated that for most of the NICs there is a strong bi-directional causality between the growth of exports and industrial development. He concluded that depending on the size of the domestic market, export growth can cause industrialization, either unidirectionally, or bidirectionally by influencing the development of manufacturing industries.

Furthermore, Dodaro (1993) employed individual country time-series analysis to establish the direction of causality between export growth and real output growth. The causality test offers a very weak support for the contention that export growth promotes GDP growth. Support for the alternate contention that GDP growth promotes export growth is also weak.Hence the evidence is weak with respect to the alternate notion of trade as an "engine of growth" and suggests the need to reconsider the whole relationship between exports and economic growth within the context of LDCs.

According to Bahmani and Alse (1994), there are three major shortcomings associated with all the time-series studies just stated above. First, none of these studies have checked for the

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8 He used growth of manufacturing industries in LDCs as a proxy for industrial development.

cointegrating properties of the variables considered. The standard Granger and Sims tests are valid only if the time series involved are not cointegrated. Second, most economic variables like GDP and exports are non stationary which result in spurious regression. Finally, because lack of quarterly data most of the previous studies used annual data. If the time delay between cause and effect is small compared to the time interval over which data is collected, however, the lack of causation could be the result of temporal aggregation.

Accordingly they used an alternative test for Granger causality, which is based on error-correction models that incorporated information from the cointegrated properties of the variables involved. Using this approach they performed causality test for 9 developing countries based on quarterly data for the period 1973I-1988IV. The results indicated that in contrast to the previous studies when the cointegrating properties of the time series are incorporated into the analysis, bi-directional causality between export growth and output growth receives strong empirical support in almost all countries.

According to Amoateng and Adu (1996), the export-driven economic growth hypotheses have provided mixed results in a bivariate causality framework. The main shortcoming with the bivariate causality analysis is the omission of other relevant variables, which could bias the results. Hence, they introduced foreign debt service as a third variable within a trivariate causality analysis of exports and economic growth for 35 African Countries for the period 1971-1990. They found that there is a joint feedback effect between export revenue, external debt service and economic growth. Their main finding is that in the period 1971-90 both the

export-driven output growth and output growth-led export promotion hypothesis have found a strong empirical support. For the sub-period 1983-90, however, the structural adjustment programs, which removed economic distortions, promoted exports and encouraged repayment of the external debt, which resulted in economic growth in the countries considered.

Other methodological frameworks have been developed by some authors to examine the relationship between export and economic growth. Sprout and Weaver (1993) used a simultaneous equation model to test the export-economic growth relationship using cross-sectional data for 72 LDCs for the period 1970-84. Their results indicated that the simultaneous equation model has advantages over the commonly used single equation models. They argue that endogenizing export growth in a structural simultaneous equation model takes care of the simultaneity problem that may arise because of a two-way relationship between exports and economic growth. In addition following Thomas (1985), they argue that OLS estimates will underestimate the export-growth coefficient provided export growth is truly endogenous, and the export-economic growth relationship is positive. Hence, two-Stage Least Square (2SLS) estimates provide a more accurate measure of export-growth relationship than the Ordinary Least Squares (OLS). Their empirical finding seems to indicate a simultaneous relationship between economic growth and export growth among some LDCs. As with most of other studies undertaken the results are, however, mixed. Furthermore, they found that those LDCs that export more processed goods and have diversified exports enjoyed economic growth than those LDCs that export primary products and fail to diversify.

Esfahani (1987) also employed a simultaneous equation model to deal with simultaneity problem between GDP and export growth. According to his results the positive relationship between export and economic growth has been mainly due to the contribution of exports to the reduction of import shortages which restrict the growth of many LDCs. Hence he tested the export-growth relationship for a sample of 31 semi-industrialized countries from 1983-1987 using the simultaneous equation framework. His main finding was that the economic growth of most of the countries considered is largely attributed to the import supply effects of exports.

With regard to Ethiopia, few attempts have been made to test the export-economic growth relationship. Girma (1982) carried out country specific regression analysis for Ethiopia by incorporating GDP as the dependent variable and exports as the only explanatory variable. His results indicated that GDP and exports are highly correlated with correlation coefficient of 0.962 and the coefficient of determination (R^2) was 0.81. However, his work didn't consider the effect of other important variables that could significantly influence economic growth.

One of the country specific time series studies undertaken is that of Rati (1987) for a group of 88 LDCs including Ethiopia. In his study he provided estimates of two models of the export-growth linkage for the period 1960-82. From the regression result, although coefficients of the export variables in the two models are not significant, they have the expected sign. The weak statistical significance could be mainly due to the small sample size and the problem in the econometric technique applied.

In his study on the impact of exports on economic growth for Eastern and Southern Africa countries, Kedir (1998) estimated two models (conventional and "Feder type") of the export-growth relationship for Ethiopia. His result confirmed a positive and significant impact of exports on economic growth in both models. Furthermore, he run the Granger non-causality test to see the direction of causality and found out that the positive association runs from exports to economic growth.

One immediate comment on the methodology and results is that he did not take into account for the cointegrating properties of the variables considered in the Johansen framework. He used growth rate of the variables and hence the regression result conveys information only about the short run dynamics. In addition, the Granger causality test did not consider the possibility that exports and economic growth are cointegrated and hence the results could be biased. The sample size considered (1967-94) could be small to give reliable estimates.

In sum, all of the above empirical studies reviewed so far indicated that the export-economic growth linkage is an unsettled issue that needs further investigation. Although most of the crossectional studies indicated that the export-economic growth nexus is predominantly positive and significant the time series studies cast some doubt about the existence of such a relationship. Based on the methodological framework employed, these studies can be categorized into those that use single equation model (OLS) estimation (both crossectional and time series), causality test or simultaneous equation models. This study attempts to add to the existing literature by considering altogether the methodologies employed so far. The export-economic growth linkage will be studied using the Johansen framework for a relatively longer period (1960-2000). In addition, the Granger causality test will be

undertaken allowing for the presence of cointegration between exports and economic growth. Furthermore, to take care of the simultaneity problem that may arise between exports and economic growth and to see the role that trade structures play in export growth and economic growth, simultaneous equation model will also be estimated.

4. METHODOLOGY, MODEL SPECIFICATION AND DATA SOUCE

4.1 Econometric Methods

4.1.1 Stationary and Non-Stationary Series

The standard classical methods of estimation which are used in the applied econometric work are based on a set of assumptions one of which is the stationarity of the variables. A variable is said to be covariance (weakly) stationary if the mean and the variances of the variable are constant over time and the covariance between two periods depends only on the gap between the periods, and not the actual time at which this covariance is considered.

A non-stationary series has a different mean at different points in time and its variance increases with the sample size. So, the first thing in an econometric work is to check whether a series is stationary or not. Using the classical estimation methods to estimate relationships with non-stationary variables results in spurious regression. This is a situation in which results obtained suggest there are statistically significant relationships between the variables in the regression model when in fact all that is obtained is evidence of contemporaneous correlations rather than meaningful causal relations [Harris (1995)].

Hence the non-stationary (trend) in variables needs to be removed first before getting into any econometric work. If the trend in a variable is trend deterministic, then it is perfectly predictable and can either be removed by regressing the variable on time (with the residuals from such a regression forming a new variable which is trend-free and stationary) or can be

captured by including a deterministic time trend as one of the repressors in the model. If on the other hand the trend is not deterministic (stochastic) then it is not perfectly predictable. In such a case the variable needs to be differenced to nullify the trend and make it stationary. A variable is said to be integrated of order one denoted I(1) if it must be differenced one time to make it stationary. A level stationary series is said to be integrated of order zero i.e. I(0). In general if the series need to be differenced d times before it becomes stationary, it is said to be integrated of order d denoted I(d).

4.1.2 Tests for Unit Roots

There are several ways of testing for the presence of unit root. The most common and popular one in econometric work is the DF test either because of its simplicity or its more general nature [Harris (1995)]. Hence the emphasis here will be on using the Dicky-Fuller (DF) approach to testing the null hypothesis that a series contains a unit root (i.e. it is non-stationary) against the alternative of stationarity.

The AD test is based on the assumption that the data generating process of the variable being tested is a random walk [auto regressive process of order one (i.e. AR (1)]. If however, the variable follows a higher order auto regressive process, the error term will be auto correlated which will invalidate the use of the DF distribution. The ADF test solves this problem by considering a higher order and augmenting the random walk equation with some more lags. It is suggested to allow both an intercept and time trend in the regression model used to test the presence of unit root. In both tests the null hypothesis is that the variable is non-stationary against the alternative stationary. The null hypothesis is rejected only when there is strong evidence against it at the conventional levels of significant.

4.1.3 Cointegration and The Error Correction Model (ECM)

Many macro economic time series are not stationary at levels and are most adequately represented by first differences. Even though the individual time series are not stationary, a linear combination of these variables could be stationary (i.e. they may be cointegrated). If these variables are cointegrated, then they have a stable relationship and can not move "too far" away from each other. In contrast lack of cointegration suggests that such variables have no long run link, in principle they can wonder arbitrarily far away from each other [Rao(1994)].

There are two common methods for testing co-integration and estimating the relationship among co-integrated variables. These are the Engle and Granger (1987) two-step procedure and the Johansen's maximum likelihood methods.

In the Engle Granger methodology, the residuals from the long-run relationship are tested for stationary to determine whether the variables are cointegrated or not. The DF test could be performed on the residuals to determine their order of integration. If the residuals do not appear to be white noise, the ADF test can be used instead.

Testing for co-integration using the Engle-Granger procedure has a number of weaknesses. First the test for cointegration is likely to have lower power against the alternative tests. Second, its finite estimates of long-run relationship are potentially biased and third, inferences cannot be drawn using standard t-statistics about the significance of the parameters of the long run model [Harris (1995)]. In addition to the above the test procedure

assumes that there is only one cointegration vector, when in fact there could be more, that is any linear combination of these vectors is obtained when estimating a single equation. The Johansen procedure takes care of the above shortcomings by assuming that there are multiple cointegrating vectors.

The Johansen procedure is a multivariate generalization of the Dickey-Fuller test [Enders, 1995]. Under this procedure the variables under consideration are by vector auto regressive (VAR) of lag p given by:

$Z_t = A_1 Z_{t-1} + A_2 Z_{t-2} + \ldots + A_p Z_{t-p} + \epsilon_t$

Where:

Z_t is the (nx1) vector (Z_{1t}, Z_{2t}, ..., Z_{nt}) and A_i is an (nxn) matrix of parameters. The error term ϵ_t is an independently and identically distributed n-dimensional vector with zero mean and variance matrix $\sum_{\varepsilon}$

The above equation can be written in vector error correction model (VECM) as:

$$\Delta Z_t = \sum_{i=1}^{p-1} \Pi_i \ \Delta Z_{t-i} + \Pi Z_{t-p} + \epsilon_t$$

In the above formulation, the rank of the matrix Π is equal to the number of independent cointegrating vectors. If rank(Π) = 0, the matrix is null implying no cointegration. If instead, Π is of rank n, then the vector process is stationary. For cases in which 0<rank (Π)<p, there are multiple cointegrating vectors and in particular if rank (Π) = 1, then there is a single cointegrating vector and the expression ΠZ_{t-p} is the error-correction factor.

The rank of a matrix is equal to the number of its characteristic roots (λ_i) that differ from zero. Once Π and λ_i's are estimated, the test for the number of characteristic roots that are insignificantly different from unity can be conducted using the $\lambda_{trace}(r)$ and $\lambda_{\max}(r)$ statistics [Harris, 1995].

In the $\lambda_{trace}(r)$ test statistic the null hypothesis is that the number of distinct cointegrating vectors is less than or equal to r against a general alternative while in $\lambda_{\max}(r)$ statistics the null is that the number of cointegrating vectors is r against the alternative of r+1 cointegrating vectors.

4.1.4 Granger Causality Test

In multivariate time series analysis, causality test is done to check which variable causes (precedes) another variable. Given two variables X and Y, X is said to Granger cause Y if lagged values of X predicts Y well. If lagged values of X predict Y and at the same time lagged values of Y predict X, then there is a bi-directional causality between X and Y.

According to Granger (1988), the existence of cointegration between X and Y must be checked before running causality test. If cointegrating relationship is found, then there must exist causality in at least one direction. To test for causality the, first the following cointegrating equations need to estimated by using the OLS.

$$X_t = \alpha_o + \beta_o Y_t + \mu_t \quad \text{---------- (4.1.4a)}$$

$$Y_t = \alpha_1 + \beta_1 X_t + \mu'_t \quad \text{---------- (4.1.4b)}$$

Assuming that X and Y are I (1), Cointegration implies that the residuals μ_t and μ'_t be I(0). Having found that the variables X and Y are cointegrated, the error correction models are formulated as follows:

$$\Delta X_t = a_o + b_o \mu_{t-1} + \sum_{i=1}^{M} C_{oi}\Delta X_{t-i} + \sum_{i=1}^{N} d_{oi}\Delta Y_{t-i} + \varepsilon_t \quad \text{---------- (4.1.4c)}$$

$$\Delta Y_t = a_1 + b_1 \mu'_{t-1} + \sum_{i=1}^{M} C_{1i}\Delta Y_{t-i} + \sum_{i=1}^{N} d_{1i}\Delta X_{t-i} + \varepsilon'_t \quad \text{---------- (4.1.4d)}$$

The error correction terms μ_{t-1} and μ'_{t-1} are the stationary residuals from the cointegration equations (4.1.4a) and (4.1.4b) respectively. By including these terms in equations (4.1.4c) and (4.14d), the error correction models introduce an additional channel through Granger causality can be detected. In equation (4.1.4c) Y is said to Granger cause X not only if the d_o's are jointly significant, but also if b_o is significant. The error correction model allows for the finding that Y Granger cause X as long as the error-correction term carries a significant coefficient even if the d_o's are not jointly significant.

4.3 Model Specification

In the study of the export-growth linkage, a number of variables that might be important in the analysis can be considered. However, the limited number of available observations often necessities the use of simple models that capture the basics of the relationships of interest. The assessment of the effect of export performance on economic growth is carried out in a production function framework in which exports enter as an additional 'input' in the production process. Following the works of different authors [Balassa(1978), Tyler(1981), Kavoussi(1984) for instance], the model to be used can be derived from a general production function of the type:

$Y_t = f(L_t, K_t, X_t)$ ----------(4.3a)

Where, Y_t is aggregate real output, L_t and K_t are the conventional labor and capital inputs and X_t denotes real exports, which is introduced as an additional input. Using equation (4.3.a) and expressing the variables in logs, the model to be used in this study can be specified as:

$LGDP_t = \beta_0 + \beta_1 LLAB_t + \beta_2 LINV_t + \beta_3 LEXP_t + U_t$ ----------(4.3b)

In equation (4.3b) above, $LGDP_t$, $LLAB_t$, $LINV_t$, and $LEXP_t$ are the logs of output, labor, investment[9] and export variables respectively. The coefficients β_1, β_2 and β_3 are elasticities and U_t is the random disturbance term.

A number of authors [Tyler (1981), Sheehey(1990)] argued that if evidence is found in support of the export-led growth hypothesis, then this could be biased by the built-in correlation between GDP and exports which is a component of GDP. According to Sheehey(1990), alternative measures of the export variable not subject to this bias should be used to test the desired relationship. Hence following this argument equation (4.3b) above will be re-estimated using the share of exports to GDP as an alternative export variable.

In equations (4.3b), it is expected that coefficient of the export variable (β_3) be positive and significantly different from zero. In addition coefficient of the investment variable (β_2) is expected to be positive. However, the labor force coefficient (β_1) will be positive or negative depending on whether the country is labor surplus or not.

[9] Since data on capital is usually not available, instead gross fixed investment is used.

The above models have been conventionally used by many authors to test the export-economic growth relationship. Estimation of the models is based on the assumption that export is exogenous and there is no feedback relationship between exports and economic growth. However, if export is truly endogenous, then the OLS will underestimate the export-growth coefficient. Hence, a simultaneous equation model will be estimated which takes into account the feedback relationship between exports and economic growth.

Following Sprout and Weaver(1993), the model to be used consists of three equations. The first equation like the previous models tries to measure the direct effects of export growth on economic growth. To measure the indirect impact of trade structures on economic growth, equations two and three will be estimated. Equation two portrays the determinants of domestic investment while equation three addresses the issue of feedback from economic growth to exports. Furthermore, it attempts to measure the extent to which the export sector is influenced by internal supply factors versus external demand factors.

The model is specified as follows:

$$GRGDP_t = \alpha_o + \alpha_1 GDI_t + \alpha_2 GLAB_t + \alpha_3 GEXP_t \quad \text{---------- (4.3c)}$$

$$GDI = \beta_o + \beta_1 PCI_t + \beta_2 GPCI_t + \beta_3 XSH_t + \beta_4 KI_t \quad \text{---------- (4.3d)}$$

$$GEXP = \gamma_o + \gamma_1 GRGDP_t + \gamma_2 PRI_t + \gamma_3 TPGRW_t + \gamma_4 TPCON_t + \gamma_5 TSCOMP_t \quad \text{--------- (4.3e)}$$

Where

$GRGDP_t$ = Growth of real GDP

GDI_t = Gross domestic investment as a percentage of GDP

$GLAB_t$ = Growth of the labor force

$GEXP_t$ = Growth of real exports

PCI_t = Real GDP per capita

$GPCI_t$ = Growth of real GDP per capita

XSH_t = Exports share of GDP (exports as a percentage of GDP)

KI_t = Capital inflow

PRI_t = Price competitiveness

$TPGRW_t$ = Trade partner's growth.

$TPCON_t$ = Trade partner concentration

$TSCOMP_t$ = Trade structure composite

In equation (4.3c) it is hypothesized that economic growth ($GRGDP_t$) is a positive function of the growth of the two primary factors of production, capital and labor, as well as the growth of the export sector.

In equation (4.3d), it is hypothesized that investment (GDI_t) depends on the level of real per capita income (PCI_t), the growth of real per capita income ($GLAB_t$), the size of the export sector (XSH_t) and foreign capital inflows (KI_t).

It is theorized that investment in LDCs is limited by an inadequate rate of domestic savings and insufficient foreign capital inflows. The domestic saving rate, in turn, is theorized to be a positive function of the level of income, growth of income and the size of the export sector. Higher levels of income and greater growth of income generate greater savings as well as consumption.

Hence, it is expected that the coefficients of PCI_t and $GLAB_t$ be positive. It is argued that a large export sector result in greater savings and hence investments for a number of reasons. First, a large export to GDP ratio produces a higher propensity to save than does the rest of the economy. Second, income generated from export is easier to tax than more diffused wage or profit income thus increasing public savings. Finally, the foreign exchange generated from exports enables the purchase of the intermediate goods, which are deemed to be important for investment. In contrast, it is argued that a higher developed export sector is responsive to the demands of the world market rather than to internal development needs. Hence, while a large export sector may initially induce investment by attracting foreign capital, most of the benefits will accrue outside the country's borders. Therefore a positive or negative GDI_t - XSH_t relationship is expected based on the above arguments. Foreign capital inflows are viewed as a means to augment domestic investment by increasing domestic savings. The coefficient of *KI*, hence, should be positive.

In equation (4.3e), it is hypothesized that the growth of exports ($GEXP_t$) is a function of (a) the economic growth of the country ($GRGDP_t$); (b) the price competitiveness of the country relative to its competitors (PRI_t); (c) the economic growth of the country's major trading partners ($TPGRW_t$); (d) the degree to which the country's exports are confined to a few trade partners ($TPCON_t$); and (e) a composite measure of the country's composition and concentration of exports ($TSCOMP_t$).

Following the arguments of many authors (see Jung and Marshall (1985) a growing output may be channeled abroad if internal demand is insufficient. Hence, while a growing export sector can contribute to greater economic growth, the reverse may also hold true. According

to this view, the coefficient of $GRGDP_t$ in equation (4.3e) should be positive. In addition, the growth of exports is contingent to a greater extent on how well the country can compete in the world markets. A high figure for the price variable (PRI_t) represents greater price competitiveness in the country relative to its competitors. Hence, a positive $GEXP_t$ - PRI_t relationship is expected. Following the notion of trade as an engine of growth, export growth will slow down as the demand for LDCs weaken from a slow down in economic growth in industrial economies. According to this argument the relationship between export growth ($GEXP_t$) and economic growth in major trading partners ($TPGRW_t$) would be expected to be positive. Similarly, the greater the trade partner concentration, the more likely demand constraints for the country's exports will arise. Hence the $GEXP_t$ - $TPCON_t$ relationship is theorized to be negative. In addition, it is theorized that the greater the percentage of primary product exports to total exports and the greater the concentration of export goods, the lower will be both export growth and economic growth. Hence it is expected that the coefficient of the commodity concentration variable ($TSCOMP_t$) to be negative.

4.2 Data Description and sources

The main sources of data in this study are the Ministry of Economic Development and Cooperation (MEDaC), The National Bank of Ethiopia (NBE), Ministry of Finance (MOF), the Ethiopian Export Promotion Agency (EEPA) and various publications of International Monetary Fund (IMF) and World Bank (WB).

Data on Gross domestic product (GDP), GDP per capita, domestic investment, exports of goods and services and labor force are basic from which various real and other variables used

in the regression analysis are derived. Data on labor force participation is obtained from World Development Indicator (WDI) of the year 2000.

The real value of exports is calculated by computing the export unit value index and then deflating the nominal export earnings using this index. The growth rate of real GDP, real GDP per capita, real exports and labor is computed as the annual growth rates of each of these variables.

Price competitiveness is calculated by taking the ratio of domestic export unit value index to the export unit value index of major competitors. Trade partner's growth is calculated by using a weighted average of the real GDP growth rate of the five leading recipient countries of Ethiopia's exports. The weights reflected the proportion of exports received by each of the five trading partners. Trade partner concentration is computed as proportion of the total exports received by the country's five major trading partners while The trade structure composite variable is calculated by taking the average of the value of primary exports as a percentage of total exports and the value of the two leading export commodities as a percentage of total exports.

The length of the time series data used in the analysis ranges from 1960/61 to 2000/01.

5. EMPIRICAL ANALYSIS

5.1 Result of Unit Root Tests

Before any meaningful regression is performed with the time series variables, it is essential to test the existence of unit roots in the variables and hence to establish their order of integration. The variables used in the analysis need to be stationary and/or should be cointegrated in order to infer a meaningful relationship from the regression.

Estimation of the cointegration relationship to be undertaken in the next section requires all the time series variables in the model to be integrated of order one. The test results of the standard Dickey-Fuller(DF) and ADF statistics for all the time series variables used in the estimation are presented in table 5.1 below

Table 5-1. Results of Unit Root Tests for Order of Integration of the Variables

VARIABLE		DF			ADF					
		Without drift and trend	With drift	With drift and trend	Without drift and trend with lag		With drift with lag		With drift and trend	
					1	2	1	2	1	2
$LGDP_t$		4.30	0.05	-1.98	3.34	4.59	0.07	0.36	-2.21	-1.09
$LEXP_t$		1.76	-0.24	-1.26	2.14	1.65	0.30	0.15	-0.76	-0.95
$LLAB_t$		12.3	-1.18	-2.59	6.02	3.91	0.22	-0.37	-2.40	-2.05
$LINV_t$		-0.96	-1.18	-0.12	-0.01	-0.02	-1.80	-1.80	-1.24	-1.19
$\Delta LGDP_t$		-4.21	-5.80	-5.75	-3.8	-1.46	-6.58	-3.05	-6.53	-3.03
$\Delta LEXP_t$		-7.21	-7.83	-7.90	-3.70	-2.45	-4.13	-2.72	-4.26	-2.89
$\Delta LLAB_t$		-2.16	-6.93	-6.85	-0.84	-4.11	-4.44	-4.11	-4.35	-4.05
$\Delta LINV_t$		-3.76	-3.71	-3.94	-3.19	-2.25	-3.15	-5.66	-3.42	-2.56
Critical Values	1%	**-2.62**	**-3.60**	**-4.20**	**-2.62**	**-3.60**	**-4.20**	**-3.61**	**-4.20**	**-4.21**
	5%	**-1.95**	**-2.93**	**-3.53**	**-1.95**	**-2.94**	**-3.52**	**-2.94**	**-3.52**	**-3.53**

From the above test result we see that the variables are non-stationary at levels but are stationary at first difference hence the variables are considered as I (1) processes.

5.2 Estimation of the Long Run and Error Correction Models

The fact that the time-series variables under consideration are non-stationary implies that, taken alone, the variables do not have the tendency to revert to their long run levels. Having found that these variables are non-stationary, the next step is to check whether any linear combination of the variables is stationary or not.

Using the Johansen's framework, the variables $LGDP_t$, $LLAB_t$, $LINV_t$ and $LEXP_t$ can be represented as a vector autoregression in full as:

$$\begin{bmatrix} \Delta LGDP_t \\ \Delta LLAB_t \\ \Delta LINV_t \\ \Delta LEXP_t \end{bmatrix} = \Gamma_i \begin{bmatrix} \Delta LGDP_{t-i} \\ \Delta LLAB_{t-i} \\ \Delta LINV_{t-i} \\ \Delta LEXP_{t-i} \end{bmatrix} + \Pi \begin{bmatrix} LGDP_{t-1} \\ LLAB_{t-1} \\ LINV_{t-1} \\ LEXP_{t-1} \end{bmatrix}$$

Under the above formulation, the rank of the matrix Π determines the number of cointegrating vectors between the variables. The method used for determining the number of cointegrating vectors is the Johansen's (1988) maximum likelihood approach.

The results of the Johansen's cointegration test for the variables under consideration is presented in Table 5.2[10].

[10] The econometric package PcFIML 9.0 version is used for estimation

Table 5.2a Result of the Test for the Number of Cointegrating Vectors

H_o: r =	n-r	$\hat{\lambda}_i$	-Tln(1- $\hat{\lambda}_{r+1}$)	T-nm	$\lambda_{\max}(0.95)$	-T $\sum \ln(1-\hat{\lambda}_i)$	T-nm	$\lambda_{trace}(0.95)$
r =0	4	0.95	*116.7***	*104.8***	*28.1*	*146.2***	*131.2***	*53.1*
r ≤1	3	0.29	*13.63*	*12.23*	22.0	*29.42*	*26.4*	*34.9*
r ≤ 2	2	0.24	*10.83*	*9.724*	*15.7*	*15.79*	*14.17*	20.0
r ≤ 3	1	0.12	*4.953*	*4.44*	9.2	*4.953*	*4.44*	9.2

As presented in table 5.1a the null of no-cointgration is rejected at 1% critical level while a case of one cointegrating vector is supported by both $\lambda_{\max}$ and λ_{trace} statistics. In addition, the adjusted $\lambda_{\max}$ and λ_{trace} for small sample size still reject the hypothesis of no cointegration and identify the existence of a single cointegrating vector[11].

Having found one cointegrating vector among the variables, the unrestricted dynamic model is then estimated from which the long-run model is solved. According to Inder(1993) quoted in Harris (1995), the unrestricted dynamic model gives precise estimates of the long-run parameters and valid t-statistics about the significance of these parameters. Using lag length of 2 and testing to insure that this lag structure is general enough to pass various diagnostic tests relating to the properties of the residuals U_t, the following long-run model is estimated using the dynamic modeling approach (with t-values in parenthesis).

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[11] According to Reimers (1992), quoted in Harris (1995), using the Johansen's procedure with small sample size problem results in over rejection of the null when in fact it is true. Thus he suggests using test statistics that take into account the number of parameters to be estimated in the model and making an adjustment for degrees of freedom.

Table 5.2b Result of the Estimated long-run Model

LGDP =	***5.852 +***	***0.6581 LLAB***	***+***	***0.1353 LINV***	***+***	***0.01362 LEXP***
	(18.94)	***(2.626)***		***(1.382)***		***(0.324)***

WALD test χ^2 (3) = 382.21 [0.0000] **

AR 1- 2 F(2, 23) = 1.349 [0.2793]
ARCH 1 F(1, 23) = 0.959 [0.3376]
Normality χ^2 = 2.172 [0.3375]
X_i^2 F(22, 2) = 0.199 [0.9839]
RESET F (1, 24) = 0.508 [0.4830]

The Wald test rejects the null that all the long-run coefficients (except the constant term) are zero. The results of various diagnostic tests [the Breush-Godfrey Lagrange Multiplier (LM) test for serial autocorrelation, the autoregressive conditional hetroscedasticity test, the Jarque-Bera test for normality, the White's test for hetroscedasticity and Ramsey's general test of model misspecification] are reported and all tests did not detect any problem of serial correlation, hetroscedasticity, non-normality and model misspecification. However, the degree of freedom is not sufficient to conduct the White's hetroscedasticity /functional misspecification test.

In the above long-run model, all coefficients have the anticipated signs indicating that labor, capital and exports positively affect output. As can be seen from the t-ratios, however, it is only labor that significantly affects economic growth in the long-run.

Having already obtained the long-run model and estimated the coefficients, the next step will be estimation of coefficients of the short-run dynamics that have important policy

implications. Hence, an error correction model will be estimated that incorporates the short-term interactions and the speed of adjustment towards long run equilibrium. In the error-correction model, the short-run disequilibrium is approximated by the first lag of the estimated long-run linear combination.

The procedure adopted for estimation is the Hendry's approach of general to-specific modeling. In this approach a large model is estimated first which includes as many of the explanatory variables and their lags as possible. Then all insignificant explanatory variables are continuously dropped until a parsimonious model with few explanatory variables but acceptable in terms of significance, economic interpretation and diagnostic validity is obtained.

The error-correction model has been estimated using the OLS technique and the results are summarized in Table 5.2c.

Table 5.2c Result of the Error-Correction Model

Variable	**Coefficient**	**t-ratio[prob.]**
$\Delta LRGDP_{t-2}$	-0.343	-2.860 [0.0075]
$\Delta LLAB_t$	1.491	4.997 [0.0000]
$\Delta LEXP_t$	0.057	2.649 [0.0126]
ECM_{t-1}	-0.763	-3.329 [0.0023]
Dum	-0.121	-4.523 [0.0001]

R^2= 0.719 σ = 0.0322 DW= 2.23

AR 1- 2 F(2, 29) = 5.159 [0.0121]
ARCH 1 F(1, 29) = 0.134 [0.7181]
Normality χ^2 = 2.287 [0.3187]
X_i^2 F (11, 19) = 1.558 [0.1908]
Xi*Xj F (22, 8) = 1.203 [0.4151]
RESET F(1, 30) = 0.029 [0.8669]

In estimating the error-correction model, dummy for war (dum) is introduced to capture the effect of war and policy change from the regression analysis. The results of the various diagnostic tests are reported and the tests did not detect any problem of hetroscedasticity, non-normality and model misspecification. However, serial autocorrelation is detected at 5% critical level.

In the above model, the coefficient of the error correction term is significant with expected sign and of fairly large magnitude (-0.763). Its magnitude indicates that deviation from the long run equilibrium is adjusted fairly quickly where 76.3% of the disequilibrium is removed each period. Coefficients of the short run dynamics show that, labor is statistically significant at 1% critical level while export at 5%, indicating that labor and exports growth significantly affect the growth of the economy in the short run. The negative and significant coefficient of dummy for war (dum) indicates that the prolonged war that took place during the Derg regime has negatively affected the growth of the economy. In addition, the above model has been estimated using the share of exports in GDP as one of the explanatory variables and the regression result still indicate that labor and exports significantly affect the growth of the economy (see Annex 2). The regression result using these different specifications of the export variable confirm the hypothesis that exports positively and significantly affect the growth of the Ethiopian economy[12].

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[12] Previous country specific studies used the average annual growth rate of the variables to test the export-economic growth relationship. In most of these studies the growth of real exports or the growth of exports share to GDP. Some other studies [Feder(1983) and Ram(1987)] used growth of exports multiplied by the share of exports to GDP. Although the models used do not say anything about the long run relationship of the variables, they are important in the dynamic sense. For completeness, these models have been estimated and the coefficient of the export variable is predominately significant (see Annex 3 for the results).

The results obtained from these regressions explain some of the most important questions that usually arise while examining the contribution of exports to economic growth in developing countries context.

The first is the issue of requirements of a minimum threshold level of economic growth in order to enjoy the benefits of rapid exports growth. Most of the previously undertaken studies [Michaely (1977), Kavoussi(1987) and Ram(1985) and others] confirmed the export-economic growth to hold only for those semi-industrialized and middle-income LDCs. According to theses studies, the positive and significant export-economic growth relationship is restricted to those LDCs with an income per capita of approximately U.S.$ 360[13]. With a per capita income of $110 and export composition dominated by primary products (Coffee, pulses & oilseeds and hides and skins accounting for about 80% of the total export earning), the positive association of exports and growth in the Ethiopian context casts doubt on the argument that a higher level of income and a higher proportion of manufactured exports are required to reveal such a positive relationship.

The second is the issue of proper specification of the export variable in the regression analysis. Most of the previous studies used either the growth rate of real exports or the rate of growth of exports share to GDP. Some other studies like Feder(1983) and Ram(1987) used growth of exports multiplied by the share of exports to GDP. The test results using these specifications of the export variable are somewhat mixed.

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[13] Studies undertaken by some authors like Balassa(1985) and Odedokun(1991) confirmed the relationship to hold for lower income LDCs.

According to the results of this study the export-economic growth relationship is confirmed in the Ethiopian context regardless of the specification of the export variable.

The Third is the issue of the trade policy adopted by most of the developing countries. According to studies like Balassa(1985), countries that exhibited a positive and significant impact of exports on economic growth were those that were relatively open and followed an outward oriented trade strategy. The World Bank(1987) report classifies Ethiopia among the strongly inward oriented countries for both separate periods of 1963-73 and 1973-85. During these periods, which coincide with the Imperial and Derge regimes respectively, Ethiopia was following an import substitution rather than export promotion trade strategy. The results of this study indicate that that the export-economic linkage could still be evident even in the face of an inward oriented trade strategy.

The other two are the issues of causality and simultaneity. In order to tackle the simultaneity problem, previous studies either performed causality test or employed a simultaneous equation model. Simultaneous equation model is estimated in order to take into account the idea that there is simultaneity or feedback relationship between exports and economic growth and to examine the indirect impact of exports on economic growth. The simultaneous equation model is estimated using the two-stage least square and the result is reported in Annex 4.

From the estimation result, although most of the variables under consideration are not statistically significant, coefficients of the export growth variable (GEXP), exports share to GDP (XSH) and GDP growth (GRGDP) are statistically significant. In the first equation, the

positive and statistically significant coefficient (at 1% critical level) of the export growth variable once again supports the hypothesis that exports growth leads to economic growth. In the second equation the positive and significant coefficient (at 5% critical level) of the exports share to GDP variable suggests that a large export sector may raise investment either by augmenting public savings through the tax generated from export proceeds or by attracting foreign capital from the revenue generated from exports. Thus, in addition to its direct effect, indirectly exports can induce economic growth via enhancing savings. In the last equation the coefficient of the GDP growth variable is found positive and highly significant (at 1% critical value). This result suggests that while growth in export can contribute to greater economic growth, conversely, a growing economy may result in greater exports growth. This happens particularly when the domestic demand for particular goods is insufficient in which case the growing output is channeled abroad.

The causality between export growth and economic growth is the final issue to be analyzed in this section. The causality test is conducted by taking into account the cointegration and error-correction formulation of the variables. It has already been shown that both output and exports are I(1) variables. What remains is to check whether these two variables are cointegrated in the Engle-Granger sense. The result of the cointegration test based on the Engle-Granger two-step procedure is reported below.

Table 5.2d Results of the DF and ADF test for the Residuals of Cointegration Equations

VARIABLE	DF	ADF
ERRy	-1.97[-1.95]	-1.99[-1.95]
ERRx	-1.17[-1.62]	-1.92[-1.62]

In the above table ERRy and ERRx are the residuals from the cointegration equations $LGDP_t = f(LEXP_t)$ and $LEXP_t = f(LGDP_t)$ respectively. The results of the DF and ADF test statistics are presented with the 5% critical values given in brackets.

From the test results, the residuals ERRy and ERRx are stationary which implies that the variables LGDP and LEXP are cointegrated. Hence Granger causality which is based on error-correction models that incorporate information from the cointegrated properties of the variables is used.

Tables 5.2e and 5.2f below show the results for error correction model for the variables LY and LX.

Table 5.2e Results of the Error correction Model for the dependent variable $LGDP_t$

Variable	**Coefficient**	**t-statistic[prob.]**
C	0.0421	4.580[0.0001]
$ERRY_{t-1}$	-0.0750	-1.818[0.0787]
ΔLY_{t-1}	-0.0133	-0.090[0.9282]
ΔLY_{t-2}	-0.5220	-3.589[0.0011]
ΔLX_{t-1}	0.0289	1.011[0.3194]
ΔLX_{t-2}	0.0156	0.550[0.5856]
$R^2 = 0.362$ RSS =0.049 F-statistic = 3.519[0.0123]		

Table 5.2f Results of the Error correction Model for the dependent variable $LEXP_t$

Variable	Coefficient	t-statistic[prob.]
C	0.013	0.223[0.825]
$ERRX_{t-1}$	-0.103	-0.968[0.340]
ΔLX_{t-1}	-0.158	-0.830[0.413]
ΔLX_{t-2}	0.164	0.877[0.387]
ΔLY_{t-1}	0.345	0.377[0.708]
ΔLY_{t-2}	1.47	1.620[0.115]
R2 = 0.167 RSS = 1.923 F-statistic = 1.249[0.310]		

Given the above test results the Wald test statistic for the hypothesis that the lagged ΔLX_{t-i} 's do not have a joint significance effect on the variable ΔLY_t is 0.549 with probability 0.583 which is rejected at both 5% and 10% critical levels. The F-statistic for the hypothesis that the lagged ΔLY_{t-i}'s do not have a joint significant effect on the variable ΔLX_t is 1.38 with a probability 0.267, which is also rejected at these critical levels. The coefficient of the residual ERRx is insignificant as indicated by the t-statistic. However, significance of the variable ERRy is weakly supported at 10% critical level, which suggests that the causation runs from exports growth to GDP growth. Therefore, the result of Granger causality test from the error correction model indicates a different channel through which exports growth could cause output growth.

In sum, all the above methodologies that are undertaken in this study summarize the different approaches that have been followed by different authors to test the export-economic growth relationship. The results from these analyses proved that regardless of the methodologies and specification of the export variable, exports are found to significantly affect the growth of the Ethiopian economy. Therefore, export expansion brings economic growth through alleviating import shortages faced by the country, inducing public investment from the revenue collected from the export tax, expanding the limited domestic market, contributing to the economies of scale necessary for industrial developments and generating positive externality to the rest of the economy.

6. CONCLUSIONS AND POLICY IMPLICATIONS

6.1 Conclusions

Recently, the issue of accelerated economic growth is gaining much attention by many development economists. The decline in economic growth of most of the Sub-Saharan African countries and other LDCs coupled with the alarming population growth led to stagnation and even a continual decline in the income of these countries. This led to closer scrutiny into the economic structure of these countries to determine factors determining the growth and hence help these countries achieve a sustained economic growth.

Following the traditional trade theory, international trade is recognized to play a decisive role in the economic growth of many countries. The classical trade theory accepts the notion that trade acts as an "engine" if not as a "handmaiden" playing a supportive role in the economic growth of most LDCs. Proponents of this theory argue that trade can contribute substantially to the development of primary exporting countries while opponents of the theory strongly contend that international trade as being completely irrelevant for development process of LDCs. The controversy on the role of trade led to the emergence of the import substitution (IS) and export promotion (EP) trade strategies. Failure of the IS strategy and success of developing countries that pursued the EP strategy, led many LDCs to pay more attention to the EP trade strategy.

Different arguments have been forwarded as to how growth of exports is associated with the growth of the economy. These are greater capacity utilization, exploitation of economics of

scale, technological improvements, efficiency rising benefits of comparative advantage, better allocation of resources, higher rates of productivity, and provision of foreign exchange. To substantiate these arguments, a number of cross-sectional and country specific time series analyses have been undertaken on many LDCs. Many authors have employed different analytical methodologies to test the export-economic growth linkage in the context of developing countries. Although, the results from these studies are somewhat mixed, predominately a positive and significant relationship between exports and economic growth is observed.

In Ethiopia, owing to structural problems and policies that were pursued by the different regimes that came to power, the performance of the export sector has been less satisfactory. The nation's output and exports are highly concentrated in agricultural commodities. And primary agricultural products accounted for about 80-90 percent of the merchandise export earnings of Ethiopia in the past four decades. The commodity concentration index for the five major export products averaged 0.56 still confirming the heavy dependence of the country on few export commodities. Furthermore, the sectoral structure of exports reveals the reliance of the country on raw agricultural products for about 80% of its total exports earning. Manufactured exports, which are crucial for a rapid structural transformation of production is very weak in Ethiopia and the country is among the least industrialized country in the world.

Different trade policies have been implemented by the different governments that have ruled the country for the last four decades. The policy adopted in the pre-1991/92 period (both in the imperial and military government of Ethiopia) was characterized by strongly inward-oriented development strategy that had a negative impact on export through influencing

directly or indirectly the profitability and competitiveness of export. The current government that came to power in 1991/92 has undertaken trade policy reforms, which aimed at promoting exports through diversifying the country's commodity exports. Despite the policy reforms, however, there is still a bias against exports that calls for active government intervention to create a conducive atmosphere for an effective export performance.

This study attempted to examine the contribution of exports to economic growth of Ethiopia using different econometric techniques. Different econometric techniques that tested the export-economic growth linkage were employed. The main reason was to be able to see the export economic growth relationship in wider perspective and also check whether the results are sensitive to the methods applied.

In the first part an OLS techniques was used to test the export-economic growth relationship. Data from different sources covering the period 1960/61-2000/01 are used for the analysis. Exports were used together with labor and capital as an input in the neoclassical production function. Pre-estimation tests of the statistical behavior of the variables (the DF and the ADF tests for unit root) showed that all the variables used in the analysis are integrated of order one (I(1)). The Johansen's technique was applied and the result of the cointegration test supported the existence of a single cointegrating vector. Then, the static long run equation was estimated and from the result although all the variables have the expected signs it is only labor that was found to significantly affect economic growth at 1% critical level.

The error-correction model was then estimated using Hendry's general to specific approach in order to determine a parsimonious model. The regression result shows that exports and labor

growth do significantly affect the growth of the economy. Specifically, a one percent change in exports brings about 0.06 percent change in economic growth whereas a one percent change in labor is related to more than one percent change in output growth. Furthermore, the same model was estimated using a different export variable (exports share to GDP) in order to check whether the results obtained are sensitive to the type of export variable used. The regression result still supported a positive and significant relationship between exports and economic growth.

A simultaneous equation model is then estimated which incorporated three separate equations. The aim is to take care of the simultaneity problem that may arise between exports and economic growth and also to shed light on the role that trade structures play in export growth and economic growth. The estimation result using 2SLS is statistically robust, where a one percent increase in export is related to about 0.16 percent growth of the economy.

In addition, although there is a direct contribution of exports to economic growth, indirectly exports can foster economic growth substantially by inducing pubic savings, attracting foreign capital and hence promoting investment. It is also found that there is a positive and significant output-exports growth relationship i.e. the hypothesis that a growth in output can positively influence exports growth is statistically supported. Lastly, the question of causality between exports growth and economic growth is examined using techniques of cointegration and error-correction modeling. The results showed that the causality runs from exports growth to economic growth.

In sum, this study attempted to test whether exports contribute to economic growth or not in the Ethiopian context. An error-correction model and the methodological frameworks that have been employed so far in the literature were used to test the required relationship. The results suggest that exports can substantially contribute to economic growth of the country and the results obtained are not sensitive to the methodology used.

6.2 Policy Implications

The immediate policy recommendation that emerges from this study is that the government in power should attempt to diversify and promote exports in order to fully exploit the benefits of the sector and promote economic growth. In this regard, the policies towards export promotion are crucial. As indicated in the calculation of the effective exchange rate for imports and exports, there is still an anti-export bias (about 44%) that should be eliminated in order to fully achieve a neutral incentive system that is conducive for efficient export promotion. To this regard, the following measures should be taken.

a) The tax burden on exports and imports of inputs should be lowered. Specifically, the duty draw back scheme should be very effective which allows exporters get a refund of the tax and duty they pay on the inputs they use on export production. In addition, the current coffee tax needs to be lowered in order to increase the profitability of the export and reduce domestic consumption.

b) The gap between the official and parallel exchange rate need to be narrowed by maintaining a realistic exchange rate. This will reduce the implicit import subsidy and increases the competitiveness of exports.

c) domestic exporters should be given an equal status with their foreign competitors by enabling them to work in undistorted market and policy environment. By increasing the competitiveness of exporters in the world market the bias against exports can be greatly reduced. This can be achieved for instance by providing exporters an automatic access to foreign exchange for the purchase of their intermediate goods and also providing them a preferential interest rate on bank loans which is much lower from the interest rate paid on non-export loans.

In addition to reducing the biases against exports, supply (sector specific) constraints need to be addressed. Particularly, improvements in the coffee sector need to be made all along the production, marketing, transport and processing chain in order to increase exports measurably. For instance the auction system should be modified and coffee buyers should be allowed to inspect and test coffee before the auction and facilities to allow testing should be developed. With regard to the export of hides and skins, efforts should be made to control the parasitic disease, which has greatly reduced the quality and demand for the hides and skins and finished leather products in the international market. In addition, incentives should be provided for livestock producers to care for their animals and to increase the number and quality of hides and skins sold for processing. Special attention need to be given to the export of chat whose share is enormously increasing during the past 10 years. Price regulation of chat export need to be relaxed in order to obtain the greatest revenue possible from exports and reduce the incentive for smuggling.

Finally, the high cost of transportation, which greatly hindered the competitiveness of the different export sectors need to be greatly reduced. Particularly, much emphasis should be

given to infrastructural facilities development. Adequate supply of efficient transport networks in road, air and railways can greatly reduce transportation cost and increase the competitiveness of export sectors.

In sum, the above measures to be undertaken in order to reduce and eliminate the supply constraints deterring the performance of export sector are somewhat general. A closer look and detailed investigation into each sectors is very important if export promotion and diversification schemes are to be successful.

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