EXPORT INSTABILITY AND ECONOMIC GROWTH IN ETHIOPIA

BY

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Contents

Acronyms

2SLS	Two Stage Least Squares
ADF	Augmented Dickey-Fuller
ADLI	Agriculture Development Led Industrialization
BOP	Balance Of Payment
CA	Customs Authority
CSA	Central Statistics Authority
CTA	Coffee and Tea Authority
DCs	Developed Countries.
DF	Dickey-Fuller
DSP	Difference stationary process
ECMC	Ethiopian Coffee Marketing Corporation.
EG	Engel Granger
EPRDF	Ethiopian Peoples Revolution Democratic Front.
ERP	Economic Reform Program
GDCF	Gross Domestic Capital Formation
GDP	Gross Domestic Product.
ICA	International Coffee Agreement
ICO	International Coffee Organization
IFS	International Financial Statistics
IMF	International Monetary Fund
LDCs	Less Developed Countries.

MEDaC	Ministry of Economic Development and Cooperation
MoTC	Ministry of Transport And Communication
NBE	National Bank of Ethiopia
NICs	Newly Industrializing Countries
OLS	Ordinary Least Squares
SAP	Structural Adjustment Program
SSA	Sub-Saharan Africa
Stabex	Stabilization of Export Earning
TGE	Transitional Government of Ethiopia
TSP	Trend Stationary Process
UNCTAD	United Nations Conference on Trade And Development.
VAR	Vector Auto-regressive.
WB	World Bank
VECM	Vector Error Correction Model.

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Abstract

The study tried to examine the relationship between export earning instability and economic growth in Ethiopia using relatively long time series data; and assessed the political economy factors worsening coffee sector performance and thereby instability in the export earnings of the country.

Export earnings instability in many primary commodity producing LDCs has been found to affect their economies adversely, the positive relationships found in some cases, however, are criticized for their mis-specification of the equation to be estimated and the technique used in constructing the instability index.

The instability in the export earning analyzed in this paper is found to have an adverse effect on the growth of the economy in the short run. The long run effect though happened to be adverse it is so insignificant to affect the economy. The political economy assessment gave the vision that the external shocks and bad domestic policies have resulted in lower farm gate prices thereby the production and export of coffee than would have been if these influential policies weren't in action.

Chapter One

Introduction

1.1 Background

Ethiopia, like most sub-Saharan African countries, is an agrarian economy with a very small industrial sector. The basic feature of the country's economy is the dominance of the agricultural sector in the employment generation, value added and exports earnings. Hence, the performance of the economy as a whole is greatly influenced by what happened in this sector. Agriculture accounted for about 74%, 62%, 50% and 45% of GDP in 1965, 1978, 1988 and 1999, respectively. The declining trend over the 35 years depicts as if agricultural transformation is taking place. Despite the declining share, the age-old contribution of the sector to such things as the foreign exchange earnings and employment generation remained more or less stagnant at around 90 and 85 per cent, respectively[1].

The real gross domestic product (GDP) growth rate and per capita income are the most frequently and widely used indicators of the performance of a country's economy and its relative position in the ranking of countries in the world. GDP has been growing on an average by 3.73% from 1965-1974, 2.18% from 1975-1990 and 5.52% from 1992-1999. In the light of about 3 per cent growth rate of

[1] Data from MEDaC(various issues)

population, the per capita income has shown declining trend in the Derge regime relative to a below 1% and 3% marginal positive growths in the regimes before and after Derge, respectively[2].

Improvements in the per capita income of Ethiopia compared to Indonesia & Korea, which had more or less closer per capita with one another three and half decades ago have now shown dramatic divergence. For instance, the per capita income in 1965 was 50 US dollars for Ethiopia, 70 US dollars for Indonesia and 130 US dollars for Korea. However, their respective share in 1997 were 110, 670 and 6790 US dollars. In 1999/00 the per capita income of Ethiopia further declined to about 100 US dollars. This shows that the Ethiopian economy has been performing poorly relative to the other countries in either reducing the population growth or foster economic growth and is now found at a low level of equilibrium with hardly any change in the structure of production, employment and trade over several years[3].

If we look at the structure of Ethiopian export in 2000 coffee accounted 53.4%, chat (catha edulis) 13.5%, hides and skin 10.3% and oilseeds 5.7% all the four items together accounting for about 83% of the total export earnings. Export earnings from Chat has achieved the second place, next to coffee, since 1998. Coffee has been the single major export item contributing on average about 60-66 per cent to the overall exports earning in the last 30 years. Coffee, oil seeds and hides and skins in 1980/81 contributed about 62%, 3% and 11% of the export

[2] Growth rate calculated using ordinary least squares (OLS) data from MEDaC.
[3] Data from IFS(various issues)

earnings, respectively all together accounting for 76%. In 1989/90, however, their respective share for coffee declined to 55%, oil seeds lowered to 1% while that of hides and skins raised to 18%; together accounting for about 74%. This contribution is more or less the same as that of the 1980/81 level of the total exports earning. The stagnation of the contribution of these three items over a decade depicts the failure of government policies in diversifying export in non-traditional items[4].

At the end of 1965 in which year 64.7% of the total exports come from coffee and out of this 76.8% of coffee was exported to a single market, the United States of America (NBE, 1965). This shows that the country's export was highly concentrated in one commodity and one market. Concentration in commodity has continued to increase from the Imperial time to the present day despite some efforts made in diversifying export both within and out of the export basket. The Hirschman concentration index shows 0.51, 0.63 and 0.65 for the three regimes respectively. Presently, When we look at the geographic destination of our export, on average about 45% of the country's export find their way to Europe. Germany, Japan, Saudi Arabia, U.S.A., Italy and Djibouti are the six major trade partners of Ethiopia. These countries altogether absorb on average about 70% of Ethiopia's export. This statement gives evidence that the export market of the country is geographically concentrated in Europe[5].

[4] Data from MEDaC(various issues)
[5] Ibid

Currently, the private sector participation in export sector in general and the coffee in particular has been increasing. In the Derge regime government parastatals were the dominant exporters and the participation of private investors were highly restricted. In the year 1995/96, for example, the private sector export earnings was more than 50 per cent of the total export earnings from the merchandise trade[6].

The external sector in Ethiopia has been suffering from stagnation and even decline in the overall performance since the last years of the Imperial regime. Export to GDP ratio in 1965,1980,1987 and 1999/00 was 12, 14, and 11 and 15.6 percent respectively. While import to GDP ratio in 1965, 1980, 1987 and 1999/00 was 12.7, 19.5 and 24 and 31.4 percent respectively. With widening deficits in the balance of payments (BOP) of 0.7, 5.5, 13 and 15.8 percent in 1965, 1980, 1987 and 1999/00 respectively [Lyakurwa, 1991 p.8 and MEDaC].

The shares of Ethiopia's export in the world coffee trade which was 2.5 in 1968/69 has declined to 2.3 in 1999/00 (CTA, 2000). Not all that is produced and supplied to the central auction market find its way as export; a significant share is consumed locally. For instance, on average about 75 per cent of the coffee supplied to the central auction markets are exported and 50 percents of the production is domestically consumed. This is mainly because of quality problem and stringent sanitation requirement, which fails to meet international standard [CTA, 1998/99]

[6] Ibid

Economic Reform Program (ERP) was introduced in 1992/93 by the two sister institutions: World Bank (WB) and International Monetary Fund (IMF) in their attempt to address the persistent deficit in the Balance of Payment (BOP) and other structural problems of the country. The introduction of this reform took place parallel with the coming into power of the government in power. The ERP was so broad and inter-related. Owing to the various and serious economic and social problems the country faced in the dying days of the Derge regime, the scope of the reform went beyond short-term crisis management, and encompassed structural problems. Trade policy reform tends to dominate Economic Reform Program. This includes among others the cutting of tariffs, avoiding of non-tariff trade barriers, devaluation, etc.

1.2 The Problem

The study on the relationship between export earning instability and economic growth has pretty important development policy implication for Ethiopia. For example, if export instability is found to affect economic growth adversely, there may be the need to build large foreign exchange reserves in order to smooth out fluctuations in export earnings in the short-run. A long-run strategy may involve trade and exchange rate policies as a means of reducing instability in export earnings. If, however, export instability does not have any adverse effect on economic growth, the efforts to stabilize export earnings is misplaced. These resources could have been used else where to increase productivity and improve economic management.

The sample period of the time series data of this paper (long time series data) encompasses radically different policy regimes internally and shocks of different kinds externally. Domestically, the shifting of economic management from a relatively free market during the Imperial regime to a command system in the Derge regime and again back to free market oriented system, presently. Internationally, the two oil crises with their consequent mounting oil bills on LDCs those that do not produce oil are in this period. The decade 1980s was also when African countries had been hard hit with the collapse of commodity prices, deterioration in their terms of trade and debt serving difficulties. Among the major events, the 1973 world commodity boom and the 1982 worldwide recessions could specifically be cited. These events are expected to have worsening impact on the instability of the export earnings of these developing countries.

Most countries, from an economic point of view are intimately linked with one another. Rarely any country could conceivably withdraw from the world economy without disastrous consequences to themselves. It would bring not only a drastic lowering of economic welfare but also a change in their ways of life. All countries must accept the fact that they are part of an integrated world economy. No country can escape its role in the system of interdependent trading nations. The problem facing developing countries is not so much whether to trade but in what commodities to trade, and to ensure the favorability of the terms on which they trade with the developed countries.

The benefits of outward looking policies that take advantage of the possibilities for international trade and capital flows are well understood in economic theory and are also demonstrated by development experience. By linking itself to the world economy, however, a country also exposes itself to external shocks, that is, it can experience economic disturbances that originate in events outside the country. Coping with such external shocks is often the most crucial test facing policymakers in developing countries.

Ethiopia is a small country having a narrower range of natural resources and therefore less flexibility to deal with internal and external economic disturbances. In addition, it is highly under developed country producing and exporting unprocessed primary commodities, which are both price and income inelastic.

Instability and downward trend in export earnings are of extreme concern to policy makers. They tend to equate a narrow export commodity base with the instability and declines in earnings, and propose export diversification. However, the impact of alternative export mixes on export earnings performance is unclear. In addition diversification is directly related to the structure of the economy and it changes as development proceeds; the relationship between economic structure, diversification, and export earnings growth and instability has to be considered.

If export earnings derived from mainly agricultural products are relatively subjected to large fluctuations, then examining the impact of instability on economic growth is relatively critical for Ethiopia. it heavily depends on the exports of few primary commodities whose international price tend to be unstable. And lastly, it imports almost all of its intermediate inputs, fuel and capital goods, which are deemed to be so critical for the country's growth process.

Ethiopia is becoming more and more open economy over time, for instance, export plus import to GDP ratio which was 27.3 per cent in 1980/81 has increased to about 45 per cent in 1997/98. The increasing openness can also be supported by the gradual eroding of the gap between the parallel and official exchange rate.

In countries, like Ethiopia, characterized by fundamental structural dis-equilibria and extreme imperfections of various types, it cannot be assumed that the market prices of goods and factors of production reflect the social costs and benefits of

production. Therefore, liberalization and leaving of every thing to the market has its own effect on the economy.

There was an attempt to look at the relationship between instability and economic growth in Ethiopia. Yohannes (1992) has found a negative relationship between instability and growth. The time series he dealt with, however, was too short for the result to be meaningful and of use by policymakers. Thus, reasonably long time series analysis is required since the various effects of instability are long term in nature and can only be captured by the statistical analysis if enough time is allowed for the effects to work their way through the economic system. In order to get reliable and true relationship between them, this paper employed long time series that encompasses the three political regimes the country has experienced with the application of advanced econometrics software.

1.3 The Hypotheses

The key hypothesis of this research is that export earnings instability adversely affects the economic growth of primary commodity producing developing countries. This statement consists of three distinct but related parts. The first is that developing countries experience a high degree of export instability, second, instability is transmitted to the rest of the economy and third, the resultant economic instability is harmful to the growth of the economy.

1.4 Objectives

Given the importance of looking at the relationship between export earnings instability and economic growth in the problem part, this paper has the following specific objectives:

- Review trade policies and strategies pursued and diversification efforts by the existing and the ruling and the last two regimes
- Tries to assess briefly the political-economy situations worsening instability (the case of coffee)
- Analyze the relationship between export earnings instability and economic growth; and;
- Put forward policy recommendations based on the findings of the paper.

1.5 Methodology and Data Sources

In order to achieve the objectives outlined, econometric analysis is the major tool with which various parameters of the model will be estimated. The data used for analyses is time series, however, such a series may have the problem of non-stationarity in most of its variables. So as to avoid such a problem, the necessary and appropriate differencing techniques are employed. Taking into account the reliability of the series without ignoring the problem the small sample can create on the estimates of the various parameters of the model, appropriate length is considered. Endogenous growth model was employed as a springboard for the specification of the equation and instability Index is constructed based on the five year moving averages. The final estimation is the result of an exhaustive search process using both Hendry's general to specific approach and diagnostic tests. The estimation has based itself on Pc-GIVE and PcFiml computer software with the Johansen procedure. The political economy section assesses external and internal factors that have impacts in reducing farm gate prices thereby production and export of coffee approached the topic by surveying empirical studies made on the area and conducting an interview with experts in the coffee sector, CTA, public and private exporters.

The main sources of data for this study are: National Bank of Ethiopia (NBE), Ministry of Economic Development and Cooperation (MEDaC), Ministry of Transport And Communication (MoTC), Customs Authority (CA), Central Statistical Authority (CSA), Coffee and Tea Authority (CTA), International Financial Statistics

(IFS) and various publications of International Monetary Fund (IMF), World Bank (WB) and United Nations Conference On Trade And Development (UNCTAD).

There are many ways of measuring export-earning instability. The definition adopted here is the squared value of the difference between the actual real exports and a five-year moving average. Squaring the deviation gives different weights for smaller and larger deviations from the trend.

The moving-average is a preferred trend to any other trends in the literature owing to its flexibility in accommodating different trends over the sample period. The export data series of the country in the sample period has three clear trends. From 1962/63 up to 1974 increasing but slowly, in the Derge regime declining and in the post Derge increasing a bit fast, this proves the presence of multiple trends in a sample period of 36 years.

On top of the above advantages; the low predictive capacity of economic agents in Ethiopia, the difficulty in forecasting both internal and external shocks in advance especially for a very long period by making use of the available information, if any, and the planning experience of the country all together supplement the appropriateness of the five-year centered moving average trend.

1.6 Organization

The study is organized in six chapters. Chapter one presents an introductory part comprising background, the problem, objectives, the hypotheses, and

methodology and data sources. Chapter two reviews trade policies, strategies and efforts in diversifying export. The third chapter gives a high light on the political economy considerations worsening the performance of coffee sector and its consequence on instability. The fourth one surveys the relevant theoretical and empirical literature. The model specification, econometric analyses and research results are presented in chapter five. The last chapter winds up the discussion by giving conclusions and policy recommendations.

CHAPTER TWO

Review of Trade Policies, Strategies and Efforts towards Diversification

Increasing information about the costs of import substitution policies and the benefits of outward oriented strategies led to widening attempts to take advantage of export-oriented manufacturing development strategy. Rapid economic change followed the adoption of export oriented policies in many countries.

Ethiopia has the lowest per capita exports in the world. From 1991/92 onwards the country has joined the 14 land locked African countries and access to ports has become through ports controlled by other countries. This has its own impact on the promotion of exports as a driving force in the country's endeavore to bring economic growth.

The composition and level of Ethiopia's export makes socio-economic development very difficult. The country's export since longer period has been financing only about 50% of its import bills and for the rest it has been looking for foreign loans, bilateral and multilateral aids.

Indeed, no vivid structural change in the export has been observed since the early 1960s. The higher the degree of commodity concentration, the greater would be

the risk of being affected by world market price fluctuation and adverse conditions on the supply of the major export commodity. The continued dependence on a few exports items for longer time along with the bad economic policies pursed have severely handicapped the development efforts of the country.

Lack of diversification, supply side problems (declining volume of export) and demand side problems (unfavorable terms of trade) have weakened the development of the country's export sub-sector. Hence, to stabilize the export earning, diversification is indispensable though it cannot be the only remedy.

The main justification for diversification is that it may reduce the sector's dependence on a single commodity, i.e. coffee, for its foreign exchange earnings and minimize the vulnerability of the country's primary exports to the world market price changes. The country has rich potential for diversifying its exports both in the primary and manufactured products i.e., it has rich soil, water and tropical climate as well as abundant and cheap labor, etc.

Rapid growth in exports both of volume and diversity is a necessity if the country is to detach itself from excessive dependence on an inflow of foreign loans and aid which are mostly uncertain and come with some conditionalities; and be able to obtain crucial imports such as capital goods and intermediate inputs that are badly needed for rapid industrialization, sustainable agricultural development and Growth.

Primary commodity prices are also subject to severe fluctuations than manufactures. Specialization on primary commodities like coffee and others offers less in terms of economies of scale and learning by doing than manufactures exports. Moreover, the large share of Ethiopian exports in certain agricultural commodities together with their low-income elasticities of demand mean that increases in output result in a less than proportionate increase in earnings.

A study by Stewart et al (1995) showed low income and price elasticities for the major Sub-Saharan African (SSA) export crops, like coffee, cocoa and tea. For individual developing countries, the price elasticity of export demand may be high, but elasticity is low for developing countries taken together, meaning simultaneous action by all or many LDCs in increasing supply results in a movement along an inelastic aggregate demand curve with a damaging repercussions for export revenues

To overcome constraints facing primary commodity exports such as sluggish demand growth, declining commodity terms of trade and fluctuating export earnings, there should be export diversification measure put in place both in agricultural and mining as well as manufactured goods so as to make export earnings dependable/stable. Furthermore, policies like export diversification can bring about improved utilization of existing factors of production, expanded factor endowments, and linkage effects (Gills, 1996: 460-67). Thus, the country needs to diversify the export commodity bundles in manufactures.

However, if those manufactures are not mature products or not products in which Ethiopia has no comparative advantage, the country may not achieve its objective of minimizing export earnings instability. If developing countries, like Ethiopia, want to reduce their export earnings instability in the short run, they should diversify into mature industrial products in which they have comparative advantages. In the long-run export instability of growth products may decline as the countries go through learning by doing process and become established in international market. Experiences in both Asia and Africa indicated that even if they rely on primary commodity exports, countries following their comparative advantage have grown faster than those do turn away from this path. The successful primary product exporters also diversified their export base, both within primary products and by shifting gradually to manufactured exports, to reduce the instability of total export earnings [Gills, 1996].

The relationship between openness to international trade and growth is not conclusive either theoretically or historically. There is a presumption from trade theory that, if countries specialize according to their comparative advantage, they will maximize global welfare and probably their individual national welfare. Thus, depending on the society's decisions about allocating resources between consumption and investment and on the rate of technical change, the growth rate will be higher with free trade policies than with autarchic policies. The historical evidence from Europe and North America is also inconclusive because it is impossible to isolate the influence of trade policy on economic development; no

country pursued free trade policies during its initial industrialization; and the variation in actual policies was such that all one can say is that no specific trade policy is a necessary condition for economic development to occur [Promfret, 1997].

There was a common view that international trade was the engine of nineteenth century growth and development but later on conditions changed in the twentieth century and trade ceased to be an engine of growth. During the boom of the 1950s and 1960s the engine role of trade revived again but it broke down again after 1973 when the growth of demand in the high-income countries slowed down [Commission and Lewis (1980) as quoted in Promfret (1997)]

More recent studies have tended to be skeptical about both of the trade roles as an engine of growth concept and of the idea that world market conditions have worsened in the twentieth century thereby making trade to be blamed for the failure of developing countries. Kravis (1970) cited in Promfret (1997) coined the phrase 'trade is a handmaiden of growth,' that is, it helps economic growth but is a guarantor of neither success nor failure.

Nurkse's view of the breakdown of the trade engine of growth and the Prebisch – Singer hypothesis – relative price of primary products to manufactured goods declines in the long run – enjoined considerable popularity during the 1950s and early 1960s as quoted in (Promfret, 1997 p.81). Together they contributed to export pessimism. Both arguments turned many developing countries' policies

toward import substitution behind highly protective walls, undermining their export capacity. These strategies were known as import substitute industrialization strategies

There is strong presumption from economic theory that a manufactured export expansion strategy will lead to more efficient resource allocation than import – substitution policies. Many developing countries now recognize the importance of trade for efficiency, a healthy balance of payments, employment creation and the exploitation of comparative advantage in resource endowment. The composition of exports from developing countries has started shifting from traditional primary commodities to manufactures and services.

It was believed that import-substitution industrialization would accelerate the development process, for productivity is higher in this sector than other sectors of the economy. It will reduce import in the long run thereby save the scarce foreign exchange that would be allocated for other critical imports such as investment goods. It will also lead to the transfer of technology. Contrary to expectations, imports-substitution strategy increased trade deficits rather than reduces them. For a time such tactics led to growth by stimulating construction and import substitution; but import substitution booms ended at its first easy phases. Employment ceased to grow, and the balance of payment worsened, as intermediate inputs had to be imported to supply the newly established factories [Promfret, 1997 P]

Trade policy reform tends to dominate structural adjustment program. It is really agreed that protection will not be the first best policy. Evidences tend to show that outward oriented countries perform very well. Export orientation approximate free trade situation than import substitution industrialization. In general, trade policy plays a pivotal role in an economy. In fact the best policy for small country is free trade [Promfret, 1997]

The great danger of import substitution policies is that by violating comparative advantage, increasing costs, and reducing competitiveness, they impair the long run efficiency and export - growth prospects of a county in the future [ThirWell, 1994]

Trade policies and strategies pursed, and efforts exerted in diversifying export in the three regimes will briefly be reviewed in the next section in their order.

2.1 The Three Regimes

Imperial Regime

The Imperial era, Ethiopia's trade policy was characterized by an inward-looking strategy. The tools used were overvaluing exchange rate, which help importers to import cheaply by taxing exporters implicitly, high tariff rates, foreign exchange control and non-tariff barriers such as restrictions on some items and heavy tax on export.

The first Five-Year Development Plan (1956 – 1961) gave due attention to the import substituting industrialization and expansion of infrastructure. The attention given to export diversification or promotion emanated from the need finance the increased import. It stated measures that should be taken to boost export viz. the relaxation of foreign exchange regulations and amendments to the export duties and freight rate, etc. However, the end result of the plan period was a deficit in the visible trade balance.

Understanding the weaknesses of the First Five-Year Development Plan (1961-66) and its adverse effects, the Second-Five Year Development plan intended to diversify export by introducing new export items in manufactures and mining while maintaining the role played by the traditional export item (coffee, hides and skin, etc.) intact.

In this development plan, the target share of the agricultural export to total exports was to decline from its level of 93.6% in 1961 to 72.3% in 1966. While that of manufacturing to grow from 5.2% in 1961 to 24.2% in 1966. Towards the achievement of the target level, incentives of various types were offered to the participants in the production and export of non-traditional export goods.

The Imperial Third-Five Year Plan (1968-72) targeted to further reduce the share of agricultural exports. The share of coffee was planned to decline from 55 to 44% at the end of the plan period and due emphasis was given to the processing of hides and skins. Moreover, the move towards export in manufactures was highly insisted. It was believed as the processing of agricultural commodities such as canning fruits, vegetables and meat will bring an improvement in the export earnings of the country. Generally, the Third Five-Year Development Plan had put diversification as its turning point.

The Derge Regime

It was the regime, which overthrew the Imperial regime in the1974 revolution and declared socialism as its ideology. This regime highly restricted the private sector participation in the export sector in particular and the economy at large. Its overall policies were expanding collective and public enterprises and manage the economy through central planning.

Like the Imperial period, the Derge period strategy of trade was an inward looking behind a highly protective tariffs and quantitative restrictions. In the Derge Ten-

year perspective plan of (1984/85 – 1993/94), it was planned to orient export towards manufactures and mining to increase the country's foreign exchange earnings. To this end, the Derge utilized strategies such as favorable tax, transport tariffs, encouraging the exporting of manufactures (processed) products, introduced barter trading techniques for products those that cannot be sold for hard currency, providing current information on world market prices to producers and exporters, to mention just a few.

The plan period envisaged the reduction of the share of the traditional export commodities (coffee, hides and skins, oil seeds and pulses) from its level of 73.5 % in 1984/85 to 53.2% in the end of the plan period. The plan period emphasized diversification mainly in the mineral products like copper, potash, marble, soda ash, etc.

The other effort considered relevant for export diversification was the directive issued to ban the export of rawhides and skins in 1989/90. From this point on, exporting of semi-processed and processed hides and skins to the world market has increased significantly.

Export subsidy and preferential interest rate were the support rendered by Derge in order to encourage export sector. In which export sub sector was given a preferential interest rate of 6% on bank loans while 8%for importing activities. However there was unfavorable taxes on exports which offsets the subsidies provided [MEDaC, 1997].

The Post Derge

This regime is the period in which the military junta is overthrown by the EPRDF-Led Transitional Government Of Ethiopia in May, 1991 come up with a new economic policy aimed at changing the socialist oriented economy into a free market oriented one. The then transitional government of Ethiopia (TGE) accepted and started implementing SAP.

There is a hot debate concerning whether trade liberalization should follow macroeconomic stabilization measures or occur concurrently, and whether import liberalization should come before or after export promotion. When a country contemplates introducing trade policy reforms, the timing, sequencing, credibility and sustainability of the reforms are very important. In terms of sequencing, it must be determined whether inward orientation is to be followed by outward orientation or vice versa and the appropriate timing at each stage in the reform process should be specified [Lyakurwa, 1991].

With the coming into power of EPRDF led TGE, a number of policy, institutional, administrative as well as legal measures and reforms have been taken on the basis of free market principles. The exports measures taken were aimed at diversifying the country's few commodity based exports by changing the structure of the sub-sector in particular and the whole economy in general to bring about rapid socio-economic development. Among the measures undertaken are the following relevant policies are put from various proclamations 1991-to date.

- Revitalization of the nation's economy by replacing the previous centrally planned economy with a market-based economy.

- Government left the room open for private sector participation including foreign companies in mining industry through Mining Proclamation of 1993 and the accompanying Mining Tax of 1993. Revised legislation in 1996 improved the incentives for private mining exploration and subsequent investments. This included reducing the income tax once operations begin, from 45 to 35 percent. Furthermore, government has simplified business registration and licensing procedures in its 1997 proclamation. These incentives and trade liberalization measures created favorable conditions for export diversification;

- Reforms on Customs Duty and Taxes aimed to nullify an anti-export-bias. Export taxes except on coffee export are eliminated and even that of coffee export tax is rationalized. The maximum tariff rate (on import) has gone down from 230% to 40%. These measures are believed not only encourage exports (both in quality and number of items) but also force import substitutes to become more efficient through a pressure of competition and finally leading them to enter into an export market;

- Devaluation of the Birr from 2.07/$ to 5.0/$ in October 1992, which made Ethiopian exports competitive and thereby encouraging the production of exportable and rechanneling of the other wise smuggled. It was also meant to

bring about structural change in the country's production structure towards manufacturing by reducing the anti-export-bias;

- Duty Drawback Incentive Scheme is introduced to encourage industries engaged in the production of export goods in terms of reducing their tax and duty cost. It also creates an enabling environment that will allow exporters to be competitive in international market. Under the duty incentive scheme, there are two schemes: duty drawback and duty free importation schemes. A Duty Drawback Scheme is introduced in order to refund duties and other indirect taxes paid on imported inputs/raw materials used for packing and processing or manufacturing of export products. This is to provide exporters a free status on the import of inputs and encourage non-traditional export products, especially that of manufactured goods. These schemes are believed to promote export diversification tremendously, especially in manufactures;

- Agricultural Development Led Industrialization (ADLI), as the national development strategy, is introduced so as to bring about structural changes in the overall economy in general and export in particular. Its main objective is to give the relative emphasis to agriculture. The strategy visualizes export-led development, which feeds into a synchronized agricultural and industrial development process.

- With technical assistance from UNCTAD, a Trade Point Service is being set up to provide exporters international market information. It is envisaged to link up

Ethiopian exports with foreign importers by undertaking promotional campaigns, designing product-specific promotional packages and using modern techniques with the aim of entering into new and growing markets as well as staying in the country's existing markets. It also responds to trade information inquiries of exporters and foreign importers. In this regard, it collects raw information from foreign or domestic sources, processes and disseminates to users. Therefore, the introduction of trade point service is believed to enhance the country's export diversification by widening export markets all over the world.

- A Foreign Exchange Retention Scheme has been introduced. This scheme entitles exporters the right to retain 10% of their export earnings in hard currency in their account and to sell the 40% at a competitive rate to one or more commercial banks, but obliges submitting the rest 50% directly to the National Bank of Ethiopia (NBE). This is envisaged to fulfill the exporters' increasing demand for foreign exchange to finance imported input for their exporting activities;

- The National Bank of Ethiopia (NBE) issued a directive in 1997 allowing private non-guaranteed foreign commercial loans in kind and cash for exporter. Such a loan is expected to promote exports significantly, not only in the traditional ones but also new ones to the export basket. A preferential Interest Rate Scheme is also introduced for exporters, which is less by 3.5% compared to the interest rate charged on non-export activities. Such a low and preferential

interest rate scheme is meant to strengthen the country's export diversification efforts;

- An export Credit Guarantee Scheme has been very recently introduced so as to encourage both old and new exports in agricultural, manufacturing and mining sectors. It is introduced especially to meet the need for working capital, like pre-shipment and other financial requirements;

- New Export Promotion Strategy is designed whose objectives are to realize the continuity of agricultural productivity, fetch dependable foreign exchange earnings and promote internationally competitive industries. In so doing, the strategy focuses on a specific export products such as coffee, cotton, fruits and vegetables, live animals and animal products and others which have already wide export market and promote industrial product exports such as textiles, leather and shoes as well as processed meat and meat products,

CHAPTER THREE

Political Economy of Coffee Sector Performance

Analyzing export sector performance without due attention to coffee in the Ethiopian setting may well be expressed as searching for an item lost in the light somewhere in the dark. Thus, this political economy assessment section is limited to issues related to coffee. At the center of this assessment is the following counter factual: had there been no deterrent interventions in coffee marketing and pricing both from domestic and international, and other infrastructure bottlenecks, much more out put, exports and foreign exchange earnings would have resulted?

The most developed literature on state intervention is that of market failure. The literature is primarily concerned with the failure of the market mechanism in equating private and social costs and benefits, and with the possible correctives to such failures through state intervention. In many theories of state intervention, it is (implicitly) assumed that the state knows every thing and can do every thing. When government fail to achieve its objective, it is called government failure. This argument has two major strands. One is the informational argument, which points out that the state may be able to collect and process all the information relevant for the correction of market failures only at costs that are greater than the benefits from such correction. The other is the theory of 'rent seeking', which argues that

state intervention creates additional 'wastes' that may more than offset the benefit it produces [Change, 1996 p.25]

Government usually intervenes in exportable agricultural prices in two ways, through direct price interventions such as sales and excise taxes; and indirect interventions through its control over the exchange rate. If the exchange rate is over valued, foreign currency becomes cheaper relative to domestic currency. To a farmer, for instance, selling rice to a foreign customer, an over valued exchange rate implies that fewer domestic currency for every ton of rice that he sells abroad compared to when the exchange rate is in-equilibrium. Such intervention is known as turning the terms of trade against agriculture.

The real exchange rate is one of the most important factors affecting the competitiveness of a country's export sector. There is considerable evidence being accumulated to support the statement that over-valued exchange rate have been an important reason, why SSA's agricultural exports have performed so poorly in the past. Although important, it should be noted that real producer prices affect the competitiveness of prennial crops only in the long run as short run elasticity are small. One of the key micro - economy variables that determine production and hence export quantities of agricultural commodities is the producer price in real terms. The real producer price indices for coffee in Ethiopia in 1974-75, 1980-81 and 1985-86 respectively were 77.8, 57.4 and 48.8 [ICO, 1989].

While agricultural terms of trade affect directly the incomes received by farmers, industrial interests are also affected often because they use agricultural produces as raw material. The industrialists would like the price of agricultural raw material to be low. They would also prefer to import their machinery cheaply. These objectives will be met when terms of trade are turned against agriculture through over valued exchange rates. This is an important element of the import substitution strategy for industrialization. It helps to transfer large surplus out of agriculture into industry. In addition to the farmers and industry groups urban consumers, traders of agricultural commodities, and the government bureaucracy also attempt to influence agricultural prices. Thus, while intervening in prices, exchange rates and taxation policies that affect agriculture, policymakers have to carefully balance the conflicting interest of all these groups. [Hamid et al, 1990].

Export performance can be affected by high marketing margins of state owned marketing enterprises and private traders at different levels that will lead to a reduced ratio of producers gate price to border prices, particularly of the major export items. The marketing and pricing policies of the Derge regime, for instance, have particularly put heavy burden on coffee growers by reducing the farm gate prices.

Measures of price distortion have most commonly been specified as the ratio of some observed or derived price or cost to the border price. Two quite different basic ratios are used: the first compares the domestic producer price with the world price at the border. The second measure is the ratio of the farm gate price

adjusted for the costs of moving the commodity to the border price [Westlake, 1987].

Analysts have aimed to measure the extent by which particular interventions have changed prices, rather than the extent by which prices have been distorted from levels considered optimal. The interventions that have been investigated most frequently are the imposition of taxes; subsidies and government enforced trade and price controls that directly affect prices in the final market for the commodity [Westlake, 1987].

In the absence of government intervention, the domestic price of an export commodity at each point in the marketing chain from the farm-gate to f.o.b. would be equal to the f.o.b. international border price less the total marketing and processing costs from the point in question to f.o.b. These export parity prices are the appropriate variables from which to measure price distortion at each point in the domestic marketing chain for an exported commodity [Westlake, 1987].

Most export commodities are also used domestically to a greater or lesser extent, either as industrial inputs or by final consumers. In the absence of government intervention, the marketing of an export good for domestic use would take place under a structure where the price at each point of sale is equal to the export parity producer price plus processing and marketing costs to that point. Using this export parity price structure, the extent of price distortion can be measured at each point of domestic sale [Westlake, 1987].

The comparative advantage/free trade argument is a static one based on restrictive, and very often unrealistic, assumptions. As a criteria for the international allocation of resources it suffers from the same static defects as the investment criteria of traditional micro - economic theory, which is the marginal rule for resource allocation. If the application of the marginal rule leads to an efficient allocation of resources, What is the allocation problem in developing countries? Since fundamental structural dis-equilibrium and extreme imperfections characterize them, it cannot be assumed that the market prices of goods and factors of production reflect the social costs and benefits of production? One good reason is that the assumption of traditional micro theory accord neither with the realities nor with the aspirations of developing countries .Two major drawbacks of the applications of the marginal rule may be cited. First, the marginal rule is a static criterion and the second is that the traditional static theory ignores a host of factors that may have a bearing on the socially optimum allocation of resources [ThirWell, 1995]

New export activities, of course, require tariff protection or subsidization in the early stages of their establishment, but there is a distinct difference between identifying lines of activities in which to promote exports and identifying lines of activity in which to develop import substitutes. In the former case, one is seeking out lines of comparative advantage; in the latter case, one is attempting to reverse the pattern of trade altering comparative advantage [ThirWell, 1995]

There are several ways in which the developed countries can contribute to a solution of the BOP problems of developing countries: one is the granting of trade preferences and the other is international commodity agreement to stabilize or increase earnings from exports. The main pressure group for trade preferences for developing countries export is the UNCTAD. Among its objectives are more stable commodity prices and compensation for developing countries whose foreign exchanges fall below expectations owing to deterioration in their terms of trade.

The low prices for coffee internally may well have adverse effects on much coffee producing countries unless significant changes are made in the tax systems or in the exchange rate; these low world prices would result in lower producer prices in these countries. This, in turn, would reduce farmers' incentives to replace aged trees, to plant new higher yielding varieties and provide good management to an existing tree stand. As a result many countries would not only suffer from low world prices but also from low production and hence low export quantities for several years. When arable land is very limited in per capita terms, intensive cultivation method, well-organized research facilities, and planting of high yielding varieties are very important [Thirwall, 1995].

Perhaps the most important trade agreements negotiated to date to help pooper developing nations is that signed at the Lome Convection in 1975 between the EEC and forty-six developing countries, mainly in Africa. It provides for free access to the European market for all developing countries manufactured goods and also for 90% of their agricultural exports. In addition, agreement was reached to

stabilize the foreign exchange earnings of twelve key commodities: Cocoa, Groundnuts, Coffee, Cotton, Coconuts, Palm, hides and skins, wood, bananas, tea, sisal and iron ore (the so called Stabex scheme). The producers of these commodities are guaranteed a certain level of earnings, provided the commodity concerned represents a certain minimum portion of the total export earnings of the producer country. If so, it may request a transfer from EEC when export earnings fall short by more than 7.5% below a four year moving average [Thirlwall, 1995].

The Stabex (Stabilization of Export Earnings) scheme is part and parcel of the Lome` Convention. The purpose of which was to mitigate the ill effects of fluctuations in export earnings through providing cash transfers that would offset loss of earnings caused by falls in export prices, sales volume or both. The country was free to decide how the money would be spent. Nevertheless, it must exercise its discretionary powers in conformity with the rules of the convention. The funds that are transferred through the system must be devoted to maintaining financial flows in the sector affected or for the purpose of promoting export diversification.

The first International Coffee Agreement (ICA) came into force in October 1963 with the main aim of halting a declining price trend. It was discontinued in 1973 for producing and consuming countries could not agree on the price and quota level. By making use of the export quota system, International Coffee Agreement (ICA) has succeeded in keeping world coffee prices fairly stable in the most recent

period of its operation in spite of wide fluctuations in world coffee production. This agreement has expired in September 1989 [Akiyan et al, 1989].

The world prices for Ethiopian coffee usually depends on the performance and weather conditions of the major coffee suppliers (like Brazil and Colombia). In most cases, Ethiopian coffee price booms were associated with some form of supply shortfalls in these major producers and suppliers to the world market.

As part of the package of structural adjustments, several developing countries have liberalized their trade regimes with the consequence of that domestic producers are no longer insulated from international price fluctuations. Indeed, it may well be better for the individual producers to manage their risk directly, rather than the government intervening to stabilize domestic earnings and absorbing the resulting risk [Love, 1986].

3.1 Summary of an Interview with Experts in the Coffee Sector

1. Coffee exporters (both private and public) purchase coffee from suppliers (Akrabies) at the auction markets in Addis Ababa and Dire Dewa after the country adopted free market economic system in 1991/92. The coffee supplied to the auction centers will be sampled, coded; quality will be examined and graded through the liquor taste process by the Coffee and Tea Authority (CTA). It is these graded samples that will be demonstrated in the auction hall to the exporters. Like any other auction system, it will be sold to the one, which give high price. Buyers at the auction are private exporters, state-owned Ethiopian Coffee Exporting Enterprise (ECEE) and domestic coffee wholesalers. Bid rate is believed to reflect the current world price (with premiums or discounts applied as appropriate).

2. The CTA forecasts International coffee price based on International Coffee Organization (ICO) or London indicators. The ICO forecasts are based on the size of production by both coffee types and quantity, and the pattern of consumption in both the producers and buyers of coffee. All the forecasts are made assuming all other affecting factors as constant i.e., under normal conditions. And the other base for the forecast is the probability of the occurrence of frost in Brazil - the country that is estimated to supply about 1/3 of the world coffee market. But these forecasts don't mostly mimic the actual movements of the prices on the ground.

3. Producers and primary collectors are informed about the auction and international prices through radio broadcasting and quarterly coffee bulletin, which is published by CTA. It is the average price of a region's coffee that is made to be known by producers. CTA gets information on coffee price from National Bank of Ethiopia, Internet and other sources.

4. Almost all Ethiopian coffees have been sold to ROW (rest of the world) on contract basis which include mode, date of shipment and quality of the coffee to be send to the overseas clients. This contract, in most cases, has low enforceability from legal point of view. The foreign customers can easily cancel the contract by a very minute problem or on a minor pretext.

5. Ethiopia exports the type known as Arabica coffee. The natural content of which has commanded a very good price for Ethiopian export relative to other similar coffee exporting countries. Especially, dry processed Harar coffee has a niche in the Middle East where they realize substantial premiums over top quality washed Arabicas.

6. Most of the coffees growing areas are found far from the centers where the auction is conducted. The major problem is the poor or unavailability of feeder roads, which serve for the evacuation of coffee to sites of the primary collectors. At the same time the asphalt road under utilization between the coffee producing and the center is of low standard and unfavorable to transport coffee as quick as it should be. This, in turn, would affect the quality and

thereby the selling price. The resultant delay of coffee arrival at the auction markets will result in a lower price in declining trends of coffee prices. These are some of the main reasons why a significant percentage of coffee is consumed domestically and smuggled out of the country.

7. Some of the justifications as to why the auction market is at Dire Dewa are: one it has historical incidence related with the rail way that passes through Dire Dewa; second its proximity to the port of Djibouti, third its proximity to markets in middle East, usually Saudi Arabia, and lastly for the government don't want to mix Harar coffee with other regions' coffee because so doing will lower the quality, thereby price and eventually leading to the loss in the popularity of Harar coffee.

8. The explanations as to the question why the auction center is in Addis Ababa instead of being at the places of production; besides being the capital city in which so many kinds of transaction having linkages of various kinds took place compared to regional capitals, Addis claims the following advantages:

- Coffee of various types and quality will arrive Addis where auction takes place and these different types will be mixed and sold under the well-known brand names. For instance, Jimma 5 grade is a combination of coffee from Jimma and some other types of coffee from different regions. The arrival of different region's coffee enables the exporters to compare them and buy the variety that

the overseas client wants to import. These options may not be there if the auction goes Jimma or Awassa.

- The already established infrastructure at the centers such as modern warehouses, processing plants, banking facilities and transport services are few of the major structures to mention. Viewed from the total economy point, the conducting of auction in Addis has a greater and irreplaceable advantage. Moreover, auction markets in most coffee producing African countries are located in the capital cities than at the area of production.

- Experts view reveal that any attempt to move the auction from Addis to any of the repeatedly opted places (Jimma and Awassa) has no any benefit from the whole economy point of view unless looked from any other angles. The political rather than the economic rational may justify the re-location of the centers of the auction markets. Given the limited capacity of the regional states' capitals and some zonal capital in every aspect, it is unthinkable to move the auction centers toward these localities, at least in the short run. Let alone to the regions and zones, the already established and functioning centers aren't without their problems. The issue of economy of scale shouldn't be ignored. A high capacity processing plant which has already established in Addis can process a great deal of coffee which in most cases is greater than the amount produced and sold to the exporter in a given period in one zone - ending up with under utilization of capacity and idleness in some seasons.

9 The major problem facing the coffee sector currently is the low emphases given to it due the misunderstanding among policymakers regarding the workings of the free market economic system in the Ethiopian setting. This misunderstanding resulted in the destruction of the infrastructure and institutional arrangement that has already established by the past regimes, especially the Derge for the improvement of this strategic and main source of foreign exchange earnings of the country. Currently, the government has almost withdrawn from the support the Derge has been giving for the improvement of this strategic cash crop.

10 Coffee is not like any other crops. It needs great care starting from drying; storing and transporting it to its destination. There must be trucks reserved to transport coffee from place of collection to ports. Trucks that serve other purposes aren't appropriate to transport coffee because coffee is so sensitive that it attracts the smell of other commodities it was carried with when transporting from place to place and when stored.

11 Truly speaking, the quality of coffee for export is so poor. Poor not because of the types of coffee we produce, but the care that we don't take specially when drying (problem of over or under drying of cherries, drying on bad materials which can change the smell, for instance, drying on skin or bare ground), storing and transporting to the required place. If we make use of the latest and sophisticated machines that could identify the quality of coffee for instance by

its color, hardly little coffee will survive the test thereby less export and fewer earnings than under the current operation.

12 The establishment of futures market in Addis is very important. One of the advantages is that you can sell coffee when the price is so beautiful from which all the parties (producers and dealers) could benefit. The gradual standardization of coffee in terms of quality and conditions of trade enabled it to be bought and sold unseen internationally. If quality, delivery date and conditions of sale are clearly stipulated, exporters and importers inevitably move into trade in coffee that would become available only at some point in the future. It is the continuous improvement of transport and other supporting facilities that made delivery date to be forecasted accurately. If one takes a look at the preconditions that are required for the establishment of futures market, the country isn't in a position to meet. The poor transport and other supporting facilities, fluctuation in the quality of coffee produced and exported are the major factors to be blamed. Before the exporters embark on such types of coffee marketing system, they need to clearly assess its feasibility and sustainability; otherwise the consequence will be disastrous.

- The strategy to diversify export shouldn't be at the expense of reducing the quantity and quality of coffee exported, for coffee is estimated to support about 10–15% of the country's population and 60-66 percent of the country's export earnings. Moreover, looking from the gender dimension, women are the beneficiaries from the employment in the processing of coffee for export. In the

years of high coffee boom, the effects are felt in the surroundings of coffee producing towns and villages of the south to the west zones of the country. These high earnings could serve as a base for the areas' growth if it is properly channeled to investment. The problem is that growers in these cash crop regions have no access and know-how of credit schemes in order to save when they earn more and borrow when they fall short of cash. As a result their consumption aren't smooth through out the year, high during the harvesting and marketing and low during the rainy seasons. as a result they are falling victims of informal money lenders among which are coffee collectors who want to recoup their money in the form of cheaper coffee during harvest.

13 One can say Ethiopia has comparative advantage in producing and exporting coffee for the following reasons. One, the country's coffee is so unique among coffee growing nations in the world facing less competition. It is more of natural coffee than the result of genetic engineering. The inherent quality of Ethiopian coffee, that is, its natural and organic nature has helped to fetch high price relative to coffee of other nations. Second, unlike most of the coffee producing nations, Ethiopia has vast area of land (more than 20 millions of hectares) ecologically highly suitable to grow coffee yielding on average 620kg per ha per year with minimum imported input. And lastly the cost of producing coffee is low compared to other countries' with mainly labor which is very cheap, some hand tools and almost negligible chemical utilization. Within the domestic production itself, coffee production incurs lower cost relative to the production of other crops.

All these analyses show that the country has developed comparative advantage for a long period of time in producing and exporting coffee. Therefore, in a globally integrating economy and free market philosophy, countries should produce and export commodities in which they have comparative advantage. Thus, Ethiopia should give due emphases to the production and export of coffee in order to rape the comparative advantage there in.

A recent research conducted by CTA in 1997 indicated that farmers receive about less than 40% of the economic f.o.b. price for washed and often little more than 20% on world price. As to the dry processed coffee the following marketing shares were estimated by the CTA (see table 3.1 below).

Table 3.1 Estimated Marketing Shares of Coffee in 1997

No.	Agents	Shares (%)
1	Farmers	30
2	Primary collectors(Sebsabies)	7
3	Suppliers(Akrabies)	18
4	Regional governments	4(tax)
5	Central governments	5(tax)
6	Transport to port	3
7	Exporters	33
	Total	100

Source: CTA

Table 3.1 enables one to compare the shares of the various agents in coffee marketing with the primary producers. Producers get only 30% of the world price for their coffee while exporters get 33% a slightly higher than that of the coffee growers. This unfair share may have discouraged the producers to increase the production and improve the quality of the coffee they reduce. Without any simulation exercise, one can conclude from the low producers' price, in this case 30 %, that growers in Ethiopia have been discouraged relative to other coffee

growing countries implied by the declining share of the country's coffee export in the world market from its higher level before some 30 years (see figure 3.1).

Agriculture is the most heavily protected and subsidized sector in the industrial market economies. However, most tropical products that don't compete with production in the developed countries are relatively less protected goods

Government price interventions in coffee sub-sector may be of two types, i.e., direct and indirect .The indirect intervention has been the result of an overvalued Birr. This overvaluation was the outcome of the import substitution strategy following by the whole Derge regime and the final years of the Imperial time. In the existing government, however, due to the gradual elimination of the gap between the official and the market rate proxied by the parallel exchange rate, the indirect methods have ceased to serve the purpose they meant for.

The direct price effect is seen in two ways; one, through the establishment of Ethiopian Coffee marketing corporation (ECMC) which has been the sole exporter of coffee during Derge limiting the participation of private exporters. The farm gate price set by this corporation was reasonably far below the international price. This resulted in the smuggling of coffee out of the country. In addition, this low producer price resulted in higher and increasing domestic consumption. In order to maximize its revenue, the Derge attempted to cut leakage into the domestic market, smuggling by establishing finance police and expanding its role in the

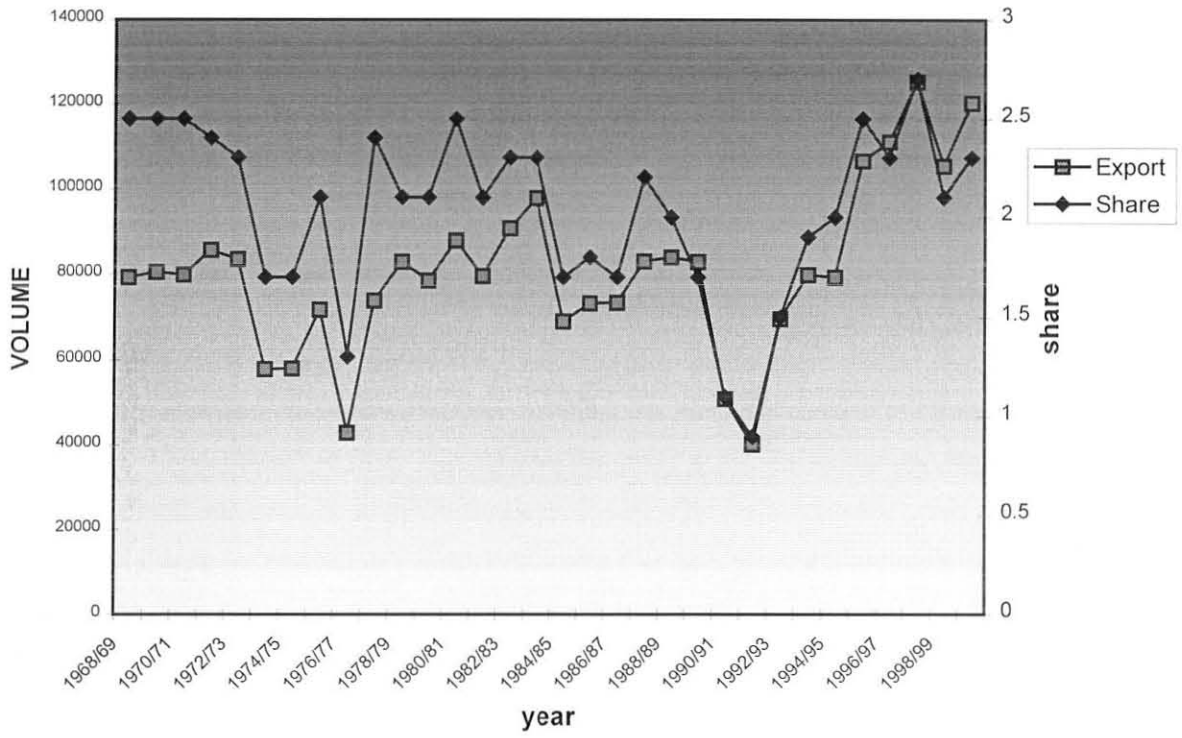
coffee trade. The high marketing margins of state -owned marketing institution led to reduction in the ratio of producer to border prices of coffee in the Derge regime.

Coffee was worth only about half as much to farmers in 1990 compared with the early 1970s. The average price paid to growers for sun-dried coffee for the five-years 1991 to 1995 were 85 US cents per pound. Improved receipts will lead to a positive response by coffee growers. Other countries' experience shows that an increase of 10 per cent in the real prices paid to growers would stimulate output by 1 per cent or greater. The early 1997 estimate of the average cost of production for farmers for deliveries of dry cherry to primary collectors varied between 31 and 37 US cents per pound (between 62 and 74 US cents per pound for green coffee). The prices received by farmers generally, but not always, covered the annual cost of production (at the imputed wage rate of only 85 US cents per day) but, except for the most efficient farmers, failed to cover the cost of establishment or provide sufficient allowance for any necessary renovation. The cost of transportation and handling from the major coffee marketing centers – Addis Ababa and Dire Dewa – to the Red Sea ports of Assab (Eritrea) and Djibouti is particularly onerous when global prices are low [ICO, 1997].

Internal transport costs are also said to double or triple the free on board (f.o.b.) cost of exportable agricultural products relative to farm gate prices in outlying agricultural areas in most Sub-Saharan African economies (UNCTAD, 2000).

The export volume and shares of coffee in the international coffee market can be presented by the following figure, which is deemed to show the relative performance of Ethiopia among coffee exporting countries in the world.

Figure 3.1 Ethipia's coffee export share and volume in the world market



The figure depicts trends in the share and volume of Ethiopian coffee export in the world coffee market. The share depicts a declining trend from 2.5 % in 1968/69 to 2.3 % in 1999/00 despite an increasing trend in the volume of export. This shows the low performance of the Ethiopian coffee sector relative to other coffee exporting countries in the world thereby lowering its rank currently compared to 31 years ago. This lower performance can also be explained by other influencing factors.

CHAPTER FOUR

Literature Survey

4.1Theoretical Literature

In the face of globally integrating world economy, international trade is the major linking variable. Nonetheless, by linking to the rest of the world a county exposes itself to external shocks that can disturb the smooth functioning of the economy.

Instability is usually defined in terms of deviations from trend and a number of indices have been developed which have typically been sample estimates of the variance of such deviations. In addition, a number of different trends form, including linear, exponential and moving average have been employed [Love, 1986]

The dependence on more diversified commodities for export will reduce the chances of a country in having fluctuations in one direction, some of the decline in its export earnings being offset by movements in the opposite direction in the other export items. The risk will be high if a country depends on a few commodities for its exports. The base argument behind the concentration hypothesis of both types (commodity and geography) is that it is always risky to put all of one's eggs in the same basket [Lim, 1991].

Lahouel (1981) as quoted in Behrman (1987) notes that in foreign exchange constrained developing economies, fluctuations in foreign exchange proceeds from primary commodity exports may generate fluctuations in the availability of non-competitive imported intermediate inputs and raw materials. Such effects are likely to be stronger, of course, the less the substitution between imported and domestic inputs. These fluctuations, in turn, could cause aggregate supply fluctuations

The other transmission of Export instability is by creating instability in government revenue that translate into instability in government expenditures which, in turn, is seen to affect economic growth adversely in two ways. First, it makes the orderly implementation of development plans difficult. And the second one is the adverse effect the expenditure instability has on investment. in fact, Instability in public expenditure reduces the confidence that private investors have in the ability of the government to provide the necessary complementary public facilities. This result in the precautionary discounting of potential investment returns and so lower investment level Idachaba (1975) cited in Lim (1991 p.40). In addition, Love (1986) said a large share of government revenues to finance development is derived from export taxes. Instability in export earnings implies instability in government revenue, thus adversely affecting the implementation of development plan and completion of development projects.

The theoretical rationale underlying the possible effect of export instability on economic growth has been extensively discussed in the development literature. The usual postulation of a negative influence is based on assumptions (1) export instability reduces productive efficiency by creating uncertainty in the supply of

foreign exchange required for capital imports in a timely fashion and (2) export instability disrupts or discourages capital formation and hence output. Others, arguing against this hypothesis, have contended that greater uncertainty about future income fostered by a higher export instability may actually encourage growth by increasing savings, and hence investment, through the precautionary demand motive Caine et al cited in Fosu (1992)

The most prominent counter argument of the adverse effect of instability is by Knudsen and Parner's (1975) suggestion that increased income instability causes greater savings within a permanent income framework, so that investment can be increased.

— Fluctuations in the export earnings can be caused by fluctuations in export prices or export quantities or both. If prices are kept completely stable by the operation of, international commodity agreement, unstable export earnings, caused by fluctuations in the quantities exported, will be made more stable, only if supply is price inelastic and the price elasticity of demand is less than half Kanbur (1986) cited in Lim (1991).

Alicia (1988) suggests that export instability is related to comparative advantage in such a manner that a country experiences relatively less instability in export earnings of a product when it has a comparative advantage in that product. The sources of comparative advantage may be, and often is, lower manufacturing costs. However, mainly in the case of differentiated products, considerations other

than price, such as market structure, ease of market entry, and quality, are important determinants of comparative advantage.

It is not possible, however, to make any prediction as to the nature of the relationship between export instability and the growth rate of output. It is possible that the nations react to export instability by reducing consumption, thus increasing investable funds and hence increasing the growth rate of output. On the other hand, it is possible that incomes in LDCs are already so low that any reduction in export earnings leads to a reduction in savings in order to maintain subsistence living standard in these countries. Under such circumstances, export instability leads to a reduction in investment and hence a reduction in the growth rates in output. Also, the relationship between export instability and economic growth rate will depend on producer's aversion to risk. A risk-averse nation (producer) will invest resources to "insure" itself (himself) against fluctuations in export earning-building foreign exchange reserves and so on-while a risk- loving or risk-neutral nation (producers) will not devote its (his) resources to such an "insurance scheme". The sign of the instability variable can therefore only be determined empirically [Kwabena, 1991].

There are intuitive reasons why instability in export earnings in LDCs is likely to have a negative impact on the economy's growth of these countries. Because most LDCs import most of their capital goods and because technical progress in these countries tends to be of the embodied variety, sustainability in import, which is partly a function of stable export earnings, is crucial to sustained economic growth.

Even when imports are not emphasized as a source of technical progress, one may point to the fact that African countries import most of their crucial production inputs. Decreased export earnings implies inability to import these inputs or inability to import them at the time when needed during the production process. Export also provide larger markets than would be supported by domestic demand alone, making it possible for African countries to take advantage of specialization and economies of scale [Kwabena, 1991].

There has been considerable diversity and change in the exchange rate regimes adopted by developing countries. The implications of exchange rate variations for the measurement of instability can be seen initially at the level of the individual country. Assume a country with export values in US dollars exhibiting no deviations from trend. Measured instability is then zero. If, however, the exchange rate between the local currency and the US dollar varies over time, changes in export values in local currency will differ from those in US dollar values generating in turn different series of trend values and of deviations from trend. Except in the unlikely case that following exchange rate variations actual and trend values coincide, measured instability in terms of local currency will be greater than zero [Love, 1986].

A change in the export proceeds of a developing country will affect its economy through the direct effect on the incomes of the producers in the export sector and through the indirect multiplier and accelerator effects. These will produce changes in the gross national product (GNP) which move in the same direction and which,

in the absence of any government intervention and leakage, will be more than proportional to the initial changes in the export earnings. Governments of developing countries with abundant supply of international reserves can cushion the impact of revenue instability by drawing on their reserves. International reserves can thus act as a buffer mechanism. The ability of the government to borrow from resident and non-resident individual enterprises and institutions can also produce a cushioning effect, as does the availability of grants from foreign governments and multilateral agencies [Lim, 1991]

Countries have a variety of alternatives when confronted with instability in the price of their key export. If commodity prices are uncorrelated from year to year, and fluctuate around a known trend, and if the country can lend and borrow freely on international financial markets, then consumption can be smoothed out by lending and borrowing. The fluctuations in consumption will thus be substantially reduced and the cost of the risk correspondingly reduced [Love, 1986].

If part of the reason for the export revenue fluctuations lies in commodity price instability then perhaps price stabilization would achieve this goal. However, only few commodities are at any moment subject to successful international price stabilization schemes, and so this option is typically not available. What is needed is some way for the country to secure stable or partially stabilized prices, and the obvious answer is to use futures or forward markets, in the absence of international price stabilization.

A diversified national trade portfolio can help achieve stability-oriented and growth-oriented policy goal. It can lower instability in export earnings by providing a broader base of exports, and enhance growth by substituting commodities with positive price trends for those with declining price trends, through increasing value added of export commodities by additional processing and marketing [Redwan et al, 1991].

The process of export diversification may seem, at first, to contradict the concept of comparative advantage. Specialization in activities in which a country has comparative advantage can lead to greater allocative efficiency. Trade theory argues that the more a country becomes involved in international markets, the more specialized it becomes and the higher will be its competitive power. At the same time specialization in a narrow group of exports can conceivably lead to increased instability in export earnings. The production and trade of a variety of commodities (a diverse export mix) can potentially stabilize a country's economic performance; however, this stability might be achieved at the expense of benefits associated with specialization [Redwan et al, 1991].

If one wants to know whether it has comparative advantage in a commodity or not instead of using the amount of labour time embodied in a good, we can use its opportunity cost as a way of determining its price or value. In doing so the law of comparative advantage can be restated as that, the country with the lower opportunity cost in the production of a good has a comparative advantage in this good [Shaikh et al, 2001].

Virtually all traditions of economic analysis treat competition within a single nation in roughly the same manner. Firms with lower costs arising from higher productivity due to better technology, longer working hours, etc., and possibly lower wages if the labour pool is segmented, are assumed to beat out ones with higher costs. However, the existence of separate national currencies changes the very nature of competition in the international trade between countries. Competition within national territory is assumed to be ruled by absolute costs, it is now argued that international trade is ruled by comparative cost shaikh (1991) as quoted in Shaikh et al (2001).

The relationship between openness to international trade and economic growth is not conclusive either theoretically or historically. There is a presumption from trade theory that, if countries specialize according to their comparative advantage, they will maximize global welfare and probably their individual national welfare. Thus, depending on the society's decisions about allocating resources between consumption and investment and on the rate of technical change, the growth rate will be higher with free trade policies than with autarkic policies. The historical evidence from Europe and North America is also inclusive because it is impossible to isolate the influence of trade policy on economic development. No country pursued free trade policies during its initial industrialization, and the variation in actual policies was such that all one can say is that no specific trade policy is a necessary condition for economic development to occur [Promfret, 1997]

There are still many restrictions on international trade. Not only are these restrictions in the forms of tariffs, quotas and non- tariff barriers, but groups of countries can also decide to band together and establish trading blocs. Such blocs impose restrictions on trade with non-member countries [Ibid.]

Product cycle theory suggests that at an advanced stage in the standardization of some products, the less-developed countries may offer competitive advantage as a production location. This is at variance with the Heckgher – Ohlin Theorem according to which one presumably ought to anticipate the exports of the less developed countries to be relatively labour-intensive products. In speculating about future industrial exports from the less developed areas, therefore, we are led to think of products with a fairly clear-cut set of economic characteristics. Their production function is such as to require significant inputs of labor; otherwise there is no reason to expect a lower production cost in less developed countries. In addition, products whose production process did not rely heavily upon external economies would be more obvious candidates than those would, that required a more elaborate industrial environment [Vernon, 1966].

If we assume that highly standardized products tend to have a well articulated, easily accessible international market and sold largely on the basis of price (an assumption inherent in the definition), then it follows that such products will not pose the problem of market information quite so acutely for the less developed countries. Foreign investors seeking optimum location for a captive quality may not have to concern themselves too much with questions of market information;

presumably they are thoroughly familiar with the marketing end of the business and are looking for a low-cost captive source of supply. In that case, the low cost of labour may be the initial attraction drawing the investor to less developed areas [Vernon, 1966].

Integrating into the world economy makes a country to exposes itself to external shocks – that is, it can experience economic disturbances that originate in events outside the country. Copying with such external shocks is often the most crucial test facing policymakers in developing countries. An unstable world environment can adversely affect developing countries through either international goods market or international capital markets. Within these broad categories, shocks in the goods market can take the form of declines in export demand, with a subsequent decline in the price of exports and, in some cases, constraints on the volume of exports. Alternatively, declines in world supply of important commodities, notably oil, can raise the price of some imports into developing countries. Some shocks can be viewed as either import or export shocks. The Dollar's rise from 1980 to 1985 was an export shock if one measures prices in other currencies and an import shock if one measures prices in dollars [krugman, 1988].

Adverse shocks are those that either reduce the foreign exchange earnings of an economy or increase its payments to the rest of the world. Developing countries also sometimes experience favorable shocks, which are without their dangers. External shocks demand a policy response for two reasons. The first, and usually

most urgent, is that adverse shift in the world economic environment produces a balance of payments problem. Whenever the central bank of a country establishes an official value for the currency, it issues a fall in the receipts of domestic residents from abroad or an increase in their payments to foreigners leads to a drain on the bank's foreign exchange reserves. The effect of adverse external shocks may be to produce an unacceptably large depreciation of the currency. The second reason for policy response is that adverse external shocks inevitably have repercussions in the domestic economy. A decline in export demand will reduce income and employment in export sectors, and this decline will in turn reduce demand for the products of industries that serve the home market [krugman, 1988].

4.2 Empirical Literature

Empirical research on the relationship between export instability and economic growth in less developed countries (LDCs) has yielded mixed results. Some find a negative, others a positive and some third group finds no significant relationship. Those who find a negative relationship stress the negative effect export instability has on the supply of output through the generation of uncertainty in the long run planning as well as due to shortages of inputs at a critical times during production process. Those who find positive relationship argue that LDCs respond to the export instability by reducing consumption. This process if repeated over a period of time, increases savings and hence the rate of investment. The third group who find no relationship argue that LDCs are able to anticipate the fluctuations in export earnings and plan for such fluctuations; hence instability in export earnings has no appreciable effect on economic growth [Kwabena, 1991].

The real export earnings of a great majority of sub-Saharan African countries declined over the 1970-85 period. Moreover, the African countries lost shares in most of the world primary commodity markets on a substantial scale. In 1988, Singapore with a population of 2.5 million had export revenues at par with all of the SSA countries together-the home of over four hundred million people [Erzan and Svedbelg, 1989].

It has been shown that although supply short comings were the pre-dominant cause of the poor export performance of most SSA countries, the demand side, specifically the deterioration in the barter terms of trade had a negative impact on export revenues (Svedbelge, 1988). The other constraint on the demand side is the extent to which protection in the major industrial market economies facing SSA countries products might have hampered their export growth. The price decline of primary products accounted for about one third of the overall world market share of the SSA. The remaining two thirds was due to failures to expand volumes. The volume decline has so far been ascribed to problems on the supply side [Erzan and Svedbelg, 1989].

An early pioneering study of international economic instability, by Coppock (1962) cited in Lim (1991), shows that the instability index of the export proceeds of forty-five developing countries (estimated 23.1) was greater than that for eighteen developed countries (estimated 17.6) for the period 1946-58.

Studies by Massel (1970) confirmed that the results of the earlier studies that the export earnings of developing countries fluctuated significantly more than those for developed countries in the 1950s and 1960s. Lancieri (1978) and UNCTAD (1985) as quoted in Lim (1991) also confirmed the difference to have continued into the 1970s and early part of the 1980s also observed the difference. Perhaps equally important is the finding by the UNCTAD study that the absolute level of export instability for developing countries has increased over the period 1962-81.

Tropical beverages (coffee, cocoa and tea) are not import–competing products in the developed countries and their market access conditions were already relatively good before the conclusion of the Uruguay Round. Moreover, from 1982 up to the late 1990s, these commodities have suffered as a result of the fall in real world market prices, largely because of a sizeable potential for increased output in major producing countries in the face of relatively inelastic demand (UNCTAD, 1997).

Dawe (1996) was concerned with the effects of export instability on investment and growth. It is shown that past cross-sectional empirical studies on the effects of export instability either in prices or in value terms used an incorrect measure of instability that doesn't properly take into account the share of exports in GDP. Using a new instability index and a broad set of conditioning variables, it is shown that export instability was positively associated with investment but negatively associated with growth in a large sample of countries during the period from the early 1970s to the mid 1980s.

Regarding the question as to which of the sources of instability (quantity or price) is more pronounced, there is sufficiently strong evidence for believing that volume instability is more pronounced than price instability at the country level. The implication of this is that, on balance, supply factors are more important than demand factors in explaining instability in export earnings.

Empirical evidences that show low instability for the aggregated data on exports of manufactures have been the bases for advice to LDCs to diversify into exports of

manufactures. But if the export instability of manufactures for LDCs is higher than for developed countries (DCs), export diversification may not lead to less instability when LDCs diversify. Further more if export instability of manufactures is higher than that of primary commodities for LDCs, diversification will lead to increased export instability for LDCs. In a study of 24 developing countries, Love (1983) found evidence that export diversification had taken place in each country and that increased shares of non-traditional exports have been accompanied by relatively greater increases in their instability.

Abay and Zewdu (1999) have tried to assess the causes of export instability in Ethiopia. Their result reveals that the proportions of the value of food items exports to total export proceeds and the country's share in the world market have negative relationships with the export earnings instability.

It is found as export to GDP ratio highly explains the level of domestic saving. In addition, the propensity to save may be higher in the export sector than in the non-export sectors. The strong association between domestic saving and exports is partly due to the heavy reliance of government savings on the taxes on foreign trade (UNCTAD, 2000).

On average, evidences show the presence of a negative relationship between export instability and economic growth. They stress the adverse effects of export instability in output through the generation of uncertainties in long term planning as

well as due to shortage of inputs at critical times during the production process [Duraisam, 1996].

It is generally accepted that if the export commodity concerned have low price elasticities of supply and demand, and encounter large and frequent shifts in their supply and demand, then their export earnings will fluctuate significantly. The price elasticities of supply of agricultural products, especially those of perennial crops and of mineral products are considerably less than one Behrman (1968) quoted in Lim (1991 P.7). It reflects the inherent lags in supply responses found in the production of most primary commodities [Lim, 1975]. At the same time, the price elasticities of demand for primary commodities are also low, as the demand is derived one in which the cost of the primary commodity is a very small percentage of the cost of the final product.

Ray (1977) uses the divergence between autarkic and free trade relative commodity prices as an index of the gains from trade. He also argued that a small country could gain more by trade than a large country. With trade restriction, however, the large country gains more than the smaller one.

Shifts in the supply of exportable commodities can be brought about by at least four categories of factors. First, availability and cost of inputs, second disease, plant exhaustion and production cycles, third inadequate quality and supply control, warehouse and storage facilities, and fourth unexpected changes in government policies.

Changes in demand can happen because of two major factors: one changes in the economic conditions in the developed countries and in the world's strategic environment. The changes can be quite marked, especially in the demand for industrial raw material. And the other reason is speculation and monopsonistic practices.

Besides supply, demand, commodity concentration and geographic concentration; there are other important determinants of instability in the export earnings: one, the size of the country (for small countries have on average a narrower range of natural resources and therefore less flexibility to deal with internal and external economic situations) and the level of development of a country, a more advanced country produces more of relatively finished products which are more stable, and has a more flexible and sophisticated production base disturbances [Erb et al , 1969].

Given the substantial instability in all primary commodity markets, some countries are likely to experience sharp fluctuation in export earnings and their underlying wealth. To the extent that these fluctuations will affect consumption they will be costly, and we would expect the countries to seek ways of managing these risks and reducing their cost [Kenneth et al, 1990]

Policymakers concerned with the instability and downward trend in export earnings in the three countries: Malawi, Tanzania, and Zimbabwe – tend to equate these

trends with the countries' narrow commodity base. They often propose export diversification as expedient remedies. But Ali, et al (1991) found that horizontal diversification in these countries would have produced lower export earnings and more instability. They added that policymakers introducing horizontal diversification must first consider price forecasts, comparative advantage, the economy's changing structure, and the costs of adjustment.

Erb et al (1969) have identified categories of factors affecting the supply and demand for exportable. A shift from favorable to unfavorable price tends, and shifts in the covariance of deviations from price trends complicate the design of export diversification policies-especially policies aimed at stabilizing export earnings. Generally, although international commodity prices have fallen and instability has increased, the most effective way to achieve growth and stability in export earnings is to increase and stabilize agricultural production and the volume of exports [Ali et al, 1991]

A number of measures of instability of export earnings have been proposed in the literature. Linear and exponential trend lines are used by Massell(1970), MacBean (1966) used deviations from 5 years moving average of values Kenen and Voivodas rely on the supposition that total export proceeds can be described by a first order auto-regressive scheme, or modified random walk. The major difference between them, however, is in the method of trend elimination from the data case cited in [Murray, 1978 P. 62]

In his attempt to look at whether there is any tendency for relative levels of earnings instability to be correlated with relative levels of price or quality instability, Murray (1978) using rank correlation found a stronger association of instability of export earnings with quantity than with price in developed countries. The evidence for the under developed countries is broadly similar to that for the developed countries where there appears to be a stronger relationships between earnings and volume instability than between earnings and price instability, suggesting that the explanation of earnings instability is likely to be found in an examination of the sources of quantity fluctuation.

In his analysis of the contribution of price and quality to earnings instability Murray (1978) concluded that for some countries quantum fluctuations have contributed more than price fluctuations to earnings instability, while for other countries the reverse holds. In the nine countries where instability was the dominating factor there were (with the exception of Brazil) relatively low levels of earnings instability. This suggests that where price instability is the dominant factor, earnings instability is (relatively) unimportant. Fluctuations in prices and quantities traded do not arise randomly but reflect underlying changes in demand and supply. Movements in the demand schedule will result in (supply unchanged) price and quantity variations in the same direction. Shifts in the supply schedule will result in (demand unchanged) price and quantity variations in opposite direction. The results obtained generally suggest that export earnings instability in under developed countries be in the main due to volume rather than price fluctuations. Further it

would appear that the variation in earnings is due to variation in supply rather than demand

Using percentage deviation from the exponential trend fitted to the observed value of a short period of time Yohannes (1992) found that Ethiopia's export earnings to be more vulnerable to external shocks (such as price falls and world economic recession) than domestic supply problems (due to natural disaster, drought and so on). He has also tried to see the sensitivity of total export earnings to price variations with their sensitivity to changes in quantities. In which he found the elasticity of export earnings with respect to the prices of the dominant export items (namely coffee and hides and skins) to be so sensitive. The data he used is only 11 years making the conclusion drawn from such short period analysis less reliable. The results of his study could be concluded as that, the prices of Ethiopia's export commodities are not only highly unstable but also the major sources of the fluctuations in the total export earnings.

There is a common view that international trade was the engine of nineteenth century growth and development, however, conditions have changed in the twentieth century and trade ceased to be an engine of growth. Later on the trade engine revived during the boom of the 1950s and 1960s, but it broke down again after 1973 when the growth of demand in the high-income countries slowed down Brandt Commission (1980), Lewis (1980) as quoted in Promfret (1997).

More recent studies have tended to be skeptical about both of the trade as an engine of growth concept and of the idea that world market conditions have worsened in the twentieth century. Kravis (1970) cited in Promfret (1997) coined the phrase trade is a handmaiden of growth i.e., it helps economic growth but is a guarantor of neither success nor failure.

CHAPTER FIVE

Econometric Analyses

5.1 The Model

The absence of generally acceptable international trade model that captures the long-run dynamic aspect of international trade and economic development led advocates of international trade to use growth models to investigate the availability of dynamic gain from trade in the long-run.

I have followed the foot steps of the researchers in the area of international trade, particularly those who made endogenous growth model their frame of reference to analyze the relationship between international trade (export in particular) and economic growth, for instance, Dawe (1996) and Fosu (1992).

The basic feature of endogenous growth model is that growth occurs not because of automatic and unmodeled (exogenous) improvements in technology but it occurs as profit-maximizing firms or investors seek out newer and better mousetraps [Romer, 1994].

The model to be specified for the analysis made its point of departure from the following aggregate production function;

$$Y = (A, K, L) \quad (5.1)$$

Where Y is real aggregate output; L, K and A are labor and capital stock and the total factor productivity or the given level of technology, respectively.

Based on this frame, expanding and splitting of some of the explanatory variables, the model for this paper can be specified as:

$$\ln Y_t = \beta o + \beta_1 \ln L_t + \beta_2 \ln K_t + \beta_3 \ln EX_t + \beta_4 \ln H_t + \beta_5 \ln I_t + U_t \quad (5.2)$$

Where: $\ln Y_t$ is the log of real GDP (gross domestic product); $\ln L_t$ is the log of the labor force; $\ln K_t$ is log of capital stock proxied by investment to GDP ratio; $\ln EX_t$ is log of the trend/ expected (stable) real export earnings calculated using the five year moving averages; $\ln H_t$ is the log of the development in human capital proxied by gross enrollment in the senior secondary school; $\ln I_t$ is the log of the measure of instability. β_0 is the intercept; β_j (j=1,2,3,4,5) measures the impact of the functional arguments, U_t is the error term assumed to be Gaussian and t is the time period.

The export variable X, though not a traditional neoclassical argument of the production function, is usually included as a regressor to reflect those international factors influencing productivity not captured in L or K. The export variable is here splitted into stable (expected) and unstable part to enable us distinguish their individual effect on the regressand. Kwabena (1991) strengthened the splitting by

saying the import of the crucial capital and intermediate inputs embodied in it technical progress is partly a function of stable export earnings.

The inclusion of export instability index (I) in the growth model is based on the assumption that instability is transmitted to the rest of the economy and such instability is detrimental to economic growth. Indeed, this argument depends on the assumption of the behavior of economic agents i.e., whether agents are risk averse or not.

Expected Signs of the Parameters

Neoclassical theory suggests that β_1 and β_2 to be non-negative. Moreover β_3 is expected to be positive due to the beneficial effect of export (for example, specialization on the basis of comparative advantage, economies of scale, and a larger world wide market leading to the adoption of relatively efficient techniques), Emery (1967) cited in Fosu (1992).

Regarding Educational attainment level or the development in human capital, a positive coefficient is expected since more educated labor have higher productivity than the less educated ones. Thus, the higher the rate of enrollment in schooling and training the faster will be the rate of economic growth thereby establishing a direct relationship with economic growth. Literacy level in Ethiopia is found to increase not only the efficiency of farmers through better utilization of the existing resources and reducing allocative errors but also by increasing the probability of

farmers to adopt new technologies such as fertilizer Abay (1997) and Sharada et al (2000).

The usual postulation of a negative influence of instability on economic growth is based on the following two assumptions: one export instability reduces productive efficiency by creating uncertainty in the supply of foreign exchange required for capital formation and hence output; and two, export earning instability disrupts or discourages capital formation and hence output [Lim, 1976].

In fact β_5 measures the independent impact of instability, that is, after controlling for other factors including the growth of capital formation. Thus, β_5 reflect effects other than that caused by a reduction in the level of investment.β_5 is likely to capture such factors as a reduction in production efficiency emanating from untimely flows in capital formation [Fosu, 1992].

5.2 The Data

For the estimation of the model and construction of the instability index time series data (data ordered by time) is collected from various sources cited in the methodology and data sources section of the first chapter of the paper.

Data on GDP (gross domestic product), GDCF (gross domestic capital formation), exports of goods and services, labor force, secondary school gross enrollment ratios and GDP Deflator are basic one the based on which various real and other data sets for the variables in the regression are derived. The real export earnings are found by deflating the nominal export earnings by GDP-deflator. Data on labor force participation and senior secondary school gross enrollment are collected from WB world development indicator (WDI) 2000. For the years before 1980 since the data on enrollment rate is available every five years, interpolation was made to get the annual rate. Data on each of the variables of the model into play have no equal starting date from the same and reliable sources. Taking into account the reliability of some of the sources, all the variables in the regression are made to have the same starting date of the fiscal year 1964/65. Real variables are employed to net out the effects of inflation from the analyses.

5.3 INSTABILITY INDEX

Fluctuations are undesirable for they create uncertainty and thus don't serve as a guide in the allocation of resources to bring about appropriate long-run adjustment

in supply and demand. Hence, in using fluctuations to refer to such undesirable earnings fluctuations, the appropriate measure of instability is indispensable

Instability refers to the short-term variation from the "normal" value. There are different ways of measuring the "normal" value. Such differences could have been responsible for the different results obtained on the effects of export instability on economic growth [Lim, 1991].

A good example of how a faulty measure of the instability index can produce misleading results can be found in the comment by Tan (1983) on a paper by Lam (1980) cited in Lim (1991). Tan pointed out that, the export values of the countries in the sample used are in fact not linearly related to time, and the imposition of a linear trend to non- linear data will produce two undesirable effects. First, it will give biased regression coefficients because of the presence of first order auto-correlation in the residuals; and secondly it artificially makes countries registering higher export growth to depict larger standard errors of estimate.

Glezakos (1984) says the choice, with respect to index formula as well as the trend estimating equation, made for the estimation of unpredictable variability in export proceeds should not be an arbitrary one, but which is concise and that reveals the actual behavior of each countries' time series of export.

Dowe (1996) preferred to estimate the trend or the expected value using moving average of seven and five-year giving the following reasons as to why he preferred

it to any other trend estimating methods. 1) Its flexibility in accommodating different trends over the sample period. The use of a single trend, either linear or exponential, is inappropriate for a long year period because the purpose of calculating a trend value is to capture deviations of exports from "expected" value and 2) the use of a single trend, for instance for 15-year period to measure expected value implies that the trend was some how expected by economic agents' 15 years in advance which is clearly stretching the concept of rational expectation. In addition, estimation of a single trend dose not allow for multiple trends within the sample period, thus will clearly biases if, for example, exports are sharply increasing over the first half of the period and then decreasing over the second half.

Polume (1992) has also used the five -year centered moving average in a time series analysis in her study to see the effects of the instability of export earning on growth and development of Papua New Guinea, a country which is highly dependent on international trade.

By closely looking at the relevance, strengths, weaknesses of the various instability measures, the behavior and capacity of economic agents of the country and its planning experience, I have preferred to use the five - year centered moving average, to estimate the expected (stable) export earnings or the trend value, the deviation from which is the unstable one.

Instability index is constructed by squaring the deviation of the annual real stable export earning, which is calculated based on the five- year centered moving average from the annual real actual export earnings of the same year. Squaring the deviation could help to assign different weights for the deviation at different distance from the moving average trend. Since larger deviations have larger weight in influencing the economy than the smaller ones.

The instability index formula used here is similar to that used by Dawe (1996) and

$$I_J = \left[X_J - 1/5 \sum_{K=J-2}^{J+2} X_K \right]^2$$

Polume (1992) with little amendment. It can be given as:

Where:

I_J Export earning instability in the year J (inflation adjusted)

X_J is the real actual export earnings in the year J

$1/5 \sum_{k=j-2}^{j+2} X_k$ is the five-year centered moving average.

Since the calculation of the five- year centered moving average necessitates dropping of two years from the starting year and two years from the ending. In order to avoid the loss of the last two end years' data 1998/99 and1999/200, the researcher has tried to use the forecasted value of export earnings for two years 2000/01 and 2001/02.

5.4 Analysis and Estimation

5.4.1 Unit Root

The analysis here is a specific country case with time series data. However, time series data usually posses the problem of non-stationarity in the variables. The moments of the distribution of a time series variable often change through time, that is, the mean, variance and so on of the underlying distribution from which an observation is drawn are not constant, but depends on the point in time at which the observation was made. A stochastic process, a family of real valued random variables, is said to be stationary in weak not strong sense (for in practice the former is the most widely used) if the means and variances of the process are constant over time. While the value of the covariance between two periods depends only on the gap between the periods, and not the actual time at which this covariance is considered. If one or more of the above conditions are not fulfilled the process is non-stationary [Charemza and Deadman, 1997],

Hypothesis tests concerning the coefficients of non-stationary variables cannot be conducted using traditional t-tests or F-tests. Because the assumption of the classical regression model necessitate that all the variables of regression be stationary. In the presence of non-stationary variables, there might be what Granger and Newbold (1974) call a spurious regression. A spurious regression appears to be significant, but the results are without any economic meaning.

In order to check whether the variables in the model are stationary or not, one has to conduct a unit root test. Of the various unit root tests for the order of integration of a series (or test of non-stationary) Dickey-Fuller (DF) and the augmented Dickey-Fuller (ADF) are the most popular and widely used methods. The null hypothesis in the unit root test is that the series is non-stationary against the alternative stationary. The null hypothesis is on the pedestal and it is rejected only when there is overwhelming evidence against it at the conventional levels of significance [Maddala, 1992].

When one talk of trends in a series, it is important before all to distinguish between deterministic and stochastic trends. If in a series the short run deviations in the end returns to the trend, the series is called Trend Stationary Process (TSP). On the other hand, if it displays no tendency to return to the trend it is called Difference Stationary Process (DSP). In fact many economic time series follow DSP. Detrending a DSP doesn't make the variable stationary-so OLS is invalid. Differencing a TSP, however, will result in a stationary series and valid OLS. This implies that it will always be safe to difference any non-stationary series than detrending [Mukherjee et al, 1998].

When testing for unit roots unless the researcher knows the actual data generating process, he should start testing the null hypotheses of unit root from the most general model, the model which includes the intercept (or drift) term, time trend and lags. In other words, it is important to use a regression equation that mimics the actual data generating process. The key problem is that the tests for unit roots

are conditional on the presence of the deterministic regressors and conversely tests for the deterministic regressors are conditional on the presence of a unit root. The critical values of the t-statistics depend on whether an intercept and/or time trend is included in the regression equation. Once you find the series to manifest a unit root, the solution is to difference or detrend depending on whether the series is DSP or TSP in order to make the variable stationary. The number of times you are needed to difference a non-stationary variable to make it stationary depends on the number of unit roots found [Enders, 1995].

5.4.2 Co-integration Analysis and Results

The coefficients of regression equations of the differenced non-stationary variables, however, give us a short-term dynamic analysis. This analysis, however, throws away potentially valuable information on the long run relationship about which economic theories have a lot to say. Fortunately, the theory of co-integration addresses this issue of integrating short run dynamic with the long run equilibrium [Maddala, 1992].

A principal feature of co-integrated variables is that their time paths are influenced by the extent of any deviation from long run equilibrium. After all, if the system is to return to the long run equilibrium the movements of at least some of the variables must respond to the magnitude of the dis-equilibrium. The short run dynamics is influenced by the deviation from the long run relationship. The dynamic model implied here is an error correction. In an error correction model, the short run

dynamics of the variables in the system are influenced by the deviation from equilibrium [Enders, 1995].

The coefficient of the lagged residual in the error correction model has the interpretation of a speed of adjustment parameters. The larger it is, the greater the response of the variable to the previous period's deviation from long run equilibrium. Very small values imply that the short-term rate is unresponsive to last period's equilibrium error [Enders, 1995].

The next question is whether the linear combination of the non-stationary variables co-integrates. There are two important ways of testing for co-integration: the Engel-Granger (EG) methodology and the Johansen procedure. The EG methodology seeks to determine whether the residuals of the equilibrium relationship are stationary. Dickey Fuller test could be performed on the residual to determine their order of integration. Since the residual sequence is a residual from a regression equation; there is no need to include an intercept term and the equation can be specified as:

$$\Delta \hat{e} = a_1 e_{t-1} + \in_t$$

If the residual from the equation do not appear to be white noise, an Augmented Dickey-Fuller test can be used for its assumption on the residual is looser than that of the DF.

The Engle and Granger methodology is found to have some defects, one among, which is its inability to detect the existence of more than one co-integrating vector.

In fact, if there are n variables in a model there may be n co-integrating vectors or less. EG, however, assumes the presence of only a unique co-integrating vector.

In an attempt to address this issue, new method was developed by Johansen. What necessitates the application of this new method is the problem in the EG single equation approach which assume the existence of only one co-integrating vector, when in fact there may be more thereby resulting in inefficient estimates of coefficients of the parameters of the model [Harris, 1995].

This procedure can estimate and test for the presence of multiple co-integrating vectors by relying on the rank of a matrix and its characteristic roots.

The rank of a matrix is equal to the number of its characteristic roots that differ from zero. The test for the number of characteristic roots that are insignificantly different from zero can be made using λ_{trace} and $\lambda_{\max}$. The former statistics tests the null hypotheses that the number of distinct co-integrating vectors is less than or equal to some number r against a general alternative. The latter statistics, in contrast, has a specific alternative hypotheses [Enders, 1995].

THE JOHANSEN PROCEDURE

Under this procedure the variables of the model is represented by defining a vector, say Z_t . Z_t is modeled as unrestricted vector auto-regression (VAR) involving up to k -lags.

$$Z_t = A_1 Z_{t-1} + \ldots + A_k Z_{t-k} + U_t \qquad (5.3)$$

Where:

Z_t is an $(n \times n)$ and each of the A_i is an $(n \times n)$ matrix of parameters. The error term is independently and normally distributed with mean of null vector of 0 and vector variance of $\sum$. This VAR model estimate dynamic relationships among jointly endogenous variables without imposing strong a priori restrictions (such as particular structural relationships and /or the exogeniety of some of the variables)

Equation (5.3) can be reformulated into error - correction (VECM) form as:

$$\Delta Z_t = \Gamma_1 \Delta Z_{t-1} + \ldots + \Gamma_{K-1} \Delta Z_{t-k+1} + \Pi Z_{t-k} + U_t \qquad (5.4)$$

Note:

Γ_1 Contains information of the short -run adjustment to changes in Z_t

Π Contains information on the long- run adjustments to changes in Z_t

In fact, $\Pi = \alpha\beta'$ where α: represents the speed of adjustment to dis-equilibrium, and β is a matrix of long run coefficients such that the term $\beta' Z_{t-k}$ embedded in equation (5.4) represents up to (n-1) co-integration relationships in the multivariate model which ensure that the Z_t converge to their long run steady - state solutions.

Given the variables of the model to be estimated: $\ln Y_t$, $\ln K_t$, $\ln L_t$, $\ln H_t$, $\ln EX_t$ and $\ln I_t$; equation (5.4) can be reformulated in full as:

$$\begin{bmatrix} \Delta \ln Y_t \\ \Delta \ln K_t \\ \Delta \ln L_t \\ \Delta \ln H_t \\ \Delta \ln EX_t \\ \Delta \ln I_t \end{bmatrix} = \Gamma_i \begin{bmatrix} \Delta \ln Y_{t-i} \\ \Delta \ln K_{t-i} \\ \Delta \ln L_{t-i} \\ \Delta \ln H_{t-i} \\ \Delta \ln EX_{t-i} \\ \Delta \ln I_{t-i} \end{bmatrix} + \begin{bmatrix} \alpha_{11}\alpha_{12}\alpha_{13}\alpha_{14}\alpha_{15} \\ \alpha_{21}\alpha_{22}\alpha_{23}\alpha_{24}\alpha_{25} \\ \alpha_{31}\alpha_{32}\alpha_{33}\alpha_{34}\alpha_{35} \\ \alpha_{41}\alpha_{42}\alpha_{43}\alpha_{44}\alpha_{45} \\ \alpha_{51}\alpha_{52}\alpha_{53}\alpha_{54}\alpha_{55} \\ \alpha_{61}\alpha_{62}\alpha_{63}\alpha_{64}\alpha_{65} \end{bmatrix} \begin{bmatrix} \beta_{11}\beta_{21}\beta_{31}\beta_{41}\beta_{51}\beta_{61} \\ \beta_{12}\beta_{22}\beta_{32}\beta_{42}\beta_{52}\beta_{62} \\ \beta_{13}\beta_{23}\beta_{33}\beta_{43}\beta_{53}\beta_{63} \\ \beta_{14}\beta_{24}\beta_{34}\beta_{44}\beta_{54}\beta_{64} \\ \beta_{15}\beta_{25}\beta_{35}\beta_{45}\beta_{55}\beta_{65} \end{bmatrix} \begin{bmatrix} \ln Y_{t-1} \\ \ln K_{t-1} \\ \ln L_{t-1} \\ \ln H_{t-1} \\ \ln EX_{t-1} \\ \ln I_{t-1} \end{bmatrix} \quad 5.5)$$

The next step is to determine the number of co-integrating vector and get estimates of α and β. If there is a rank of 0,then there is no co-integration, that is, $\prod$ is (n×n) null matrix and it would imply that there is no long run relationship among the variables involved and therefore, estimation by difference would be appropriate. If, however, it is found to exist a reduced rank, $\prod Z_{t-k} (= \alpha\beta' Z_{t-k})$ is stationary (I (0)) so that U_t becomes white noise [Harris, 1995].

In order to reduce the lag length of the VAR, we use the F-test statistics on the retained regressors.

Table 5.1 Unit Root tests For the Order of Integration of variables

Variables		DF			ADF					
		Without drift and trend	With drift	With drift and trend	Without drift and trend with lag		With drift and lag		With drift and trend with lag	
					1	2	1	2	1	2
LnY_t		3.213	-0.041	-2.764	2.728	4.149	-0.049	0.318	-2.764	-1.411
LnK_t		-0.256	-2.523	-3.061	-0.212	-0.186	-1.883	-2.646	-2.404	-3.250
LnL_t		11.06	-0.596	-1.758	5.856	3.499	-0.640	-0.593	-1.426	-1.826
LnH_t		2.037	-4.513	0.229	0.290	0.217	-2.272	-2.310	-0.408	-0.253
$LnEX_t$		2.603	0.831	-0.120	0.955	1.057	-1.482	-1.253	-2.276	-2.122
LnI_t		-0.362	-4.875	-5.428	0.004	0.143	-3.333	-2.973	-3.850	-3.672
ΔlnY_t		4.320	-5.422	-5.382	-4.204	-1.849	-6.531	-3.037	-6.503	-3.044
ΔlnK_t		-7.600	-7.574	-7.483	-3.433	-3.433	-3.440	-3.458	-3.386	-3.418
ΔlnL_t		-2.155	-6.558	-6.496	-1.075	-0.919	-3.696	-3.503	-3.672	-3.477
ΔlnH_t		-2.246	-2.376	-3.526	-1.982	-1.782	-2.039	-1.676	-3.486	-3.203
$\Delta lnEX_t$		-1.980	-2.207	-2.230	-2.043	-1.948	-2.309	-2.243	-2.342	-2.292
ΔlnI_t		-9.424	-9.341	-9.232	-5.829	-4.898	-5.888	-5.088	-5.831	-5.019
Critical values	1%	-2.639	-3.65	-4.271	-2.639		-3.65		-4.271	
	5%	-1.952	-2.956	-3.556	-1.952		-2.956		-3.556	

From the unit root tests conducted, all the variables which constitute the vector Z_t are found to be integrated of the same order one, i.e., I (1). It is thus, pretty convenient to make co-integration analysis although co-integration analyses is possible with variables integrated of different order.

The Johansen procedure enabled us to check the possibility of having more than one co-integrating vector, which the EG single equation method failed to do. Estimating the model of the paper, the following results on the number of co-integrating vectors are obtained from the PcFiml 9.0 output.

Table 5.2 Tests of the Co-integrating rank

H_O: rank=r	n-r	$\hat{\lambda}$	$-T\ln(1-\hat{\lambda}_{r+1})$	λ_{max} (95%)	$-T\Sigma\ln(1-\hat{\lambda})$	λ_{trace} (95 %)
r==0	6	0.867	44.44*	39.4	111.6**	94.2
r<=1	5	0.707	27.03	33.5	67.11	68.5
r<=2	4	0.571	18.61	27.1	40.08	47.2
r<=3	3	0.475	14.17	21.0	21.47	29.7
r<=4	2	0.240	6.052	14.1	7.306	15.4
r<=5	1	0.055	1.254	3.8	1.254	3.8

** denote rejection of the null at 1% level of significance.

* denote rejection of the null at 5 % level of significance.

The sample size under use (36 years) is small enough for a good Johansen procedure application. Reimers (1992) cited in Harris (1995) starts by saying that a small sample analysis leads the Johansen methodology to reject the null when in fact it is true and in such cases he suggested using the method that adjusts for the degrees of freedom. Accordingly I made use of the recommended the adjusted trace and max that adjust for small sample. Thus, the null hypothesis of no co-integrating vector in a VAR model is rejected while the number of the co-

integrating vector is at most equal to one cannot be rejected. The conclusion is that there is precisely one co-integrating vector in the estimated model putting differently the rank of the matrix π is one. This is supported by both the adjusted λ_{max} and λ_{trace} statistics. The λ_{max} statistics rejects the null at level of significance 1% while the λ_{trace} at 5%.

Table 5.3 Results of Co-Integration Analyses

a) Standardized β` Eigenvectors					
LnY_t	lnL_t	lnK_t	lnH_t	$lnEX_t$	lnI_t
1.000	-0.2904	-0.09409	-0.1030	-0.2575	0.001639
-0.4615	1.000	-0.2349	-0.1228	-0.1218	0.03239
-3.890	2.856	1.000	-0.09340	0.5124	0.1480
-4.179	1.069	0.2488	1.000	1.111	-0.06572
1.949	6.696	-1.958	-2.860	1.000	0.1943
-75.53	-279.5	17.77	103.0	60.60	1.000

a) Standardized α-coefficients						
LnY_t	-0.8540	0.07386	0.03820	0.1285	-0.00291	-0.000078
LnL_t	-0.0243	-0.03670	0.02747	0.01406	-0.00354	0.0001091
LnK_t	-0.9795	1.476	-0.07348	0.03594	0.02132	0.001607
LnH_t	-1.277	-0.07734	-0.09421	-0.1186	-0.00944	0.0001925
$LnEX_t$	0.4116	0.4182	-0.03905	-0.0737	-0.01085	-0.0001244
LnI_t	22.25	-6.978	-4.358	2.223	-0.4218	0.001679

Diagnostic Tests

Vector AR 1-2F(2, 15) = 0.46429[0.9548].

Vector normality $\chi(12)$=22.741[.0300]*

Number of lags used 2

Variables entering unrestricted: constant, dummy for policy

The tests for serial correlation and normality don't detect the problems stated by their respective null hypotheses at 5% for normality and 1% for serial correlation.

Since the existence of only a unique co-integrating vector is statistically supported in the above tests, the first column of the α-matrix and the first row of the β`matrix of equation (5.5) happen to be the relevant entries. This, in turn, makes the relevant equation the one in which $\ln Y_t$ is written as a function of the other five explanatory variables. However, the explanatory variables are required to be weakly exogenous in order to fulfill the classical linear regression assumptions. This test is made by imposing a zero restriction on the α-coefficients of the columns using the loglikely Ratio (LR-test). The results of the tests for weak exogeneity is summarized in table 5.4 as:

Table 5.4 Tests for Zero Restriction on α-coefficients

	$\ln Y_t$	$\ln L_t$	$\ln K_t$	$\ln H_t$	$\ln EX_t$	$\ln I_t$
α-coefficients	-0.8540	-0.0739	0.0382	0.1285	-0.00291	-0.0000784
LR-test:χ^2($\approx$1)	8.7811	0.1374	0.9539	17.176	1.9256	0.52538
p-value	0.0030**	0.7108	0.3287	0.0000**	0.1652	0.00219

** denotes rejection at 1% level of significance.

* denotes rejection at 5% level of significance.

When testing for weak exogenity $\ln Y_t$ and $\ln H_t$ are found to be endogenous while the remaining variables happen to be weakly exogenous. In fact, it is a requirement for the dependent variable, $\ln Y_t$ to be endogenous. As a result I have

estimated both the endogenous variables simultaneously using the two stage least square (2SLS). The result of the estimate for the variable of interest is presented in table 5.5 as:

Table 5.5 Results of the estimating of $\Delta \ln Y_t$ by 2SLS

Variable	Coefficient	S.E	t-value	t-prob
ΔlnHt-1	-0.088045	0.11529	-0.764	0.4532
ΔlnHt	0.65331	0.78440	0.833	0.4139

The results of the 2SLS estimates though not an end by it self could help us to estimate the model recursively. The results show that the coefficients are not significantly different from zero implying invalid simultaneous models. Tests for structural breaks were made using Chow tests to see whether the parameter estimates are non-constant. Plots of the Chow test below suggest the parameter $\Delta \ln H_t$ to be unstable which is supported by the plots' crossing of the band at 5% level of significance.

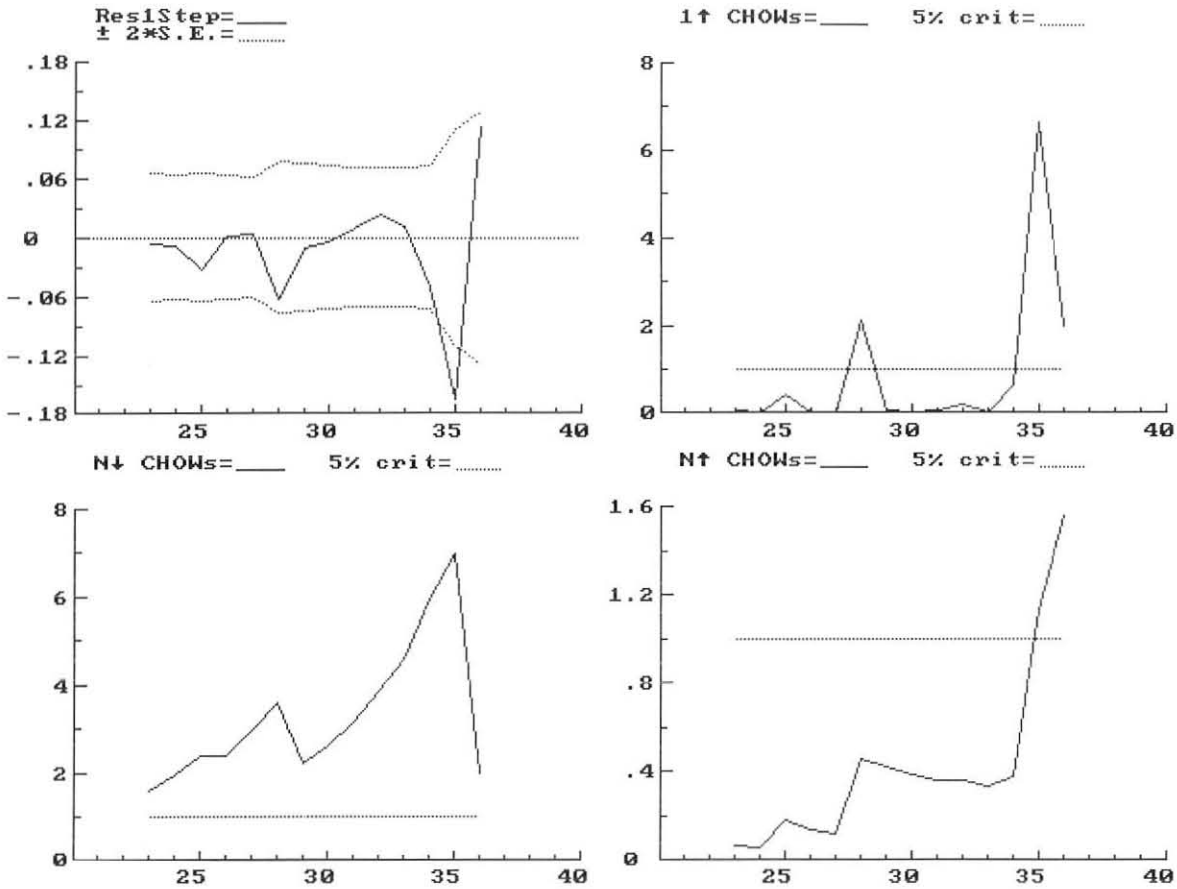


Fig. 5.1 Parameter Stability test for $\Delta \ln H_t$ from 2SLS Estimation

Hendry (1988) suggested that if a parameter is found to be unstable, it implies weak exogeneity and therefore we don't go to estimate the model simultaneously but return to the single equation estimation method. Bardsen (1994) added saying the non-constancy of the marginal (short- run) models form the basis for the validity of weak exogeneity.

The columns of β have an economic interpretation as co-integrating vectors. After normalization, they may be interpreted as long run parameters. Thus, single equation model with the estimate of the long -run coefficients can be written as:

$$LnY_t = 0.290lnL_t + 0.094lnK_t + 0.103lnH_t + 0.258lnEX_t - 0.002lnI_t \quad (5.7)$$

In order to test the significance of the long run coefficients, a zero restriction is imposed on each coefficient and the results for LR-statistics are presented in table 5.6 below.

Table 5.6 Tests for Zero Restriction on the Long Run Parameters

	lnY_t	lnL_t	LnK_t	lnH_t	$lnEX_t$	lnI_t
β-coefficients	1.000	-0.2904	-0.09409	-0.1030	-0.2575	0.001639
LR-test:χ^2(≈1)	23.672	5.9181	8.7597	8.7811	24.731	0.16749
p-value	0.000**	0.0150*	0.0031**	0.0030**	0.0000**	0.6824

** denotes rejection at 1% level of significance.

* denotes rejection at 5% level of significance.

The long run results show that all the growth explaining variables except the instability index happened to be significant at the conventional levels of significance 5% for labor and 1% for the rest. The export earning instability index is found to be insignificant but with the expected sign suggested by the LR-test in the table 5.6 above. The reason may be in the long run economic agents may have ample mechanisms to adjust to the fluctuations and thus, smooth out the adverse effects of instability on the growth of the economy. This may some thing to with the concept of permanent income hypotheses.

The next procedure after the assurance of the long run relationship is the short run dynamics. The parsimonious short run model is the result of general to specific modeling. The general model is usually described in an auto-regressive distributed lag (ADL). General to specific modeling is the formulation of a fairly unrestricted dynamic model, which is subsequently tested, transformed and reduced in size by performing a number of tests for restrictions. There need not be a unique model reduction sequence that leads from a general model to specific form. And there is no systematic way of ordering the sequence of tests in general [Charemza and Deadman, 1997].

Once the uniqueness of co-integrating vector is proved, the parsimonious representation of the system or vector error correction model (PVECM) to be estimated will have the following form:

$$\begin{bmatrix} \Delta \ln Y_t \\ \Delta \ln L_t \\ \Delta \ln K_t \\ \Delta \ln H_t \\ \Delta \ln EX_t \\ \Delta \ln I_t \end{bmatrix} = \Gamma i \begin{bmatrix} \Delta \ln Y_{t-i} \\ \Delta \ln L_{t-i} \\ \Delta \ln K_{t-i} \\ \Delta \ln H_{t-i} \\ \Delta \ln EX_{t-i} \\ \Delta \ln I_{t-i} \end{bmatrix} + \alpha \hat{\beta}' \begin{bmatrix} \ln Yt-1 \\ \ln Lt-1 \\ \ln Kt-1 \\ \ln Ht-1 \\ \ln EXt-1 \\ \ln It-1 \end{bmatrix} + \varepsilon_t \qquad (5.8)$$

The result of the OLS estimates of equation (5.8) is presented in table 5.7

Table 5.7 Results of the PVECM

Variables	Coefficients	t-value	t-prob	**DIAGNOSTIC TESTS**
$\Delta \ln EX_{t-2}$	0.3399	3.345	0.0026	AR 1-2F(2,23) = 2.831[0.0796]
$\Delta \ln I_t$	-0.0056	-2.042	0.0518	ARCH 1 F(1,23) = 0.5435[0.4685]
$\Delta \ln L_t$	0.8638	4.053	0.0004	Normality chiy(2) =2.0484[0.3591]
$\Delta \ln Y_{t-1}$	0.3315	2.520	0.0185	XiY F(13,11) = 0.77816[0.6705]
Dmpol	-0.0697	-2.046	0.0515	RESET F(1,24) = 0.14514[0.7066]
$\hat{\beta}' \tilde{Z}_{t-1}$	-0.6247	-3.046	0.0022	
$R^2 = 0.79$ T= 32 DW =1.67				

Where:

$\hat{\beta}' \tilde{Z}_{t-1}$ is the one period lagged error correction vector.

The various diagnostic tests reported above AR (auto-regressive) the test for higher order serial correlation up to two lags, ARCH (auto-regressive conditional heteroscedasticity), normality, heteroscedasticity (XY), Ramsey RESET test which are customarily used to validate the estimated model have no problems of the kind stated in their null hypotheses. The absences of the problems are suggested by the absence of asterisks one or two in the computer print out and the large p-value in the brackets of every test. In deed most economic time series shows auto-

correlation of the residuals, however, the DW test for auto-correlation has shown no problem of such kind.

The coefficient of the vector error correction term has the expected negative sign with a magnitude of 0.62 depicting a less than complete adjustment. It tells us that, about 62 % of the discrepancy between the actual and the long run values of GDP growth is corrected each year.

The short run analysis entails the significance of the magnitude of the coefficient of the export earning instability suggesting the shortness of the time period to cushion the effects of the instability relative to the insignificant but negative results of the long run model. The short run effect can probably be due to the government's inability to immediately get the amount equal to the loss in foreign exchange which, in turn, may be due to unexpected short fall caused by either internal or external shocks. In addition, the foreign reserve stock of the country is very limited in order to insulate the effects of instability on the economy. In both the long and short run analyses the empirical test established a negative relationship between economic growth and instability. All the other explanatory variables of the model, which are deemed to explain the variation in the growth of real GDP, are found to be significantly different from zero suggested by the significant t-statistics in the short run case and tests for zero restriction on the long run parameters in the long run (see table 5.6).

The relationship found between dummy for political and policy change (Dmpol) and growth is negative as per the expectation. This can be due to the adverse effects of policy reversals, radical changes in policies pursed in the shift from one regime to the other and their consequent effect on peace, stability and loss of confidence by businessmen which are very important. Owning to the long-term nature to see the effects of education (the development in human capital) on its promotion of growth, the short-term analyses found an insignificant relationship and thus it is dropped from the model. The investment variable shared the same feature. However, the stable part of export is found to have significant relationship with growth both in the short and long run with the expected sign.

CHAPTER SIX

Conclusions and Policy Recommendations

6.1 Conclusions

The Imperial and Derge regimes' trade policies and strategies are found to be in favor of inward orientation with little attention to export promotion verified by the relatively high anti-export bias while that of the post Derge government is relatively export oriented ones.

Coffee alone has been contributing on average about 60 - 66 % of the countries export earnings. Chat has already started to rank second to coffee from 1998 though distant follower. However, the price of this major export item has been fluctuating for a long time, especially after the liquidation of the international coffee agreement (ICA). This fluctuation makes the price forecast, production and business in the sector unreliable and chance determined. The cost of transporting coffee from the place of production to the port is significantly very high thereby reducing the farm gate price which in turn has an influence in the out put and quality of the product. The absences of feeder roads at some remote coffee producing areas have contributed to the smuggling out of the country.

Export earnings instability is found to have the expected sign i.e., negative both in the long and short run analysis. However, the significance of the coefficients is different. The short run coefficient is significant while that of the long run is not. This shows that instability affects economic growth in the short run than in the long run. In the long run economic agents may have many ways adjust.

The growth explaining variables included in the model are proved to have explained the variation in the growth of the economy both in short and long run. The signs of the coefficients are as per the expectation in the long run.

6.2 Policy Recommendations

The unhealthy performance of the economy manifested by the various socio-economic indicators from the last years of the Imperial era and the whole Derge regime didn't blame the trade policies they have pursued but it was the combination of political and economic factors. No specific trade policy is universally accepted as a necessary condition for economic growth to happen. This imply that trade policies and strategies can change from time to time and country to country.

Transport and roads among, other infrastructure facilities should be provided to the areas producing exportable commodities and those that have the potential for export. This may help to reduce transport cost, delays in arrival and improve the farm gate prices and increase output. The declining international prices, especially

after the dissolving of the international coffee agreement is so significant, thus, ways should be created either to re-strengthen the agreement or establish new one whose function is stabilizing the international price The other thing is the information gap that exist between coffee collectors and producers in which the latter usually have no access for information on the price of coffee and other export items thereby resulting in inappropriate share of the international price, the lion's share goes to the middle men. In addition, the existence of poor saving culture in the cash crop region prohibited them from not properly using the increased income for further expansion or some other inevitable areas.

The short-run model result suggests that a relatively high foreign exchange reserve or immediate sources of credit is required to finance the critical imports and cushion the adverse effects of export earning instability on the growth and development of the country. While the insignificant long run coefficient implies that if short-run adverse effects are continuously cushioned, instability may not be worrisome in the long run. Nonetheless, there should be policies and strategies that would be able to reduce instability, diversification of exports in manufactures of mature products can be one.

The researcher believes that a meaningful economic growth can be achieved through the transfer of technology from the rest of the world for which we need dependable and stable export earnings so as to enable the country to import technology. To this end, we need to promote export to increase the volume, quality, diversity, export of processed commodities as much as possible for it has

high income and price elasticity. On the other hand, the transfer of technology requires the availability of educated and trained manpower domestically in order to smooth the transfer. Thus, policies that can improve the quality and increase the quantity of on human capital be pursued.

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Appendix

A Questionnaire, of an open end type, Designed To Collect Information Related With Coffee From Experts In CTA, Public And Private Coffee exporters.

1. How do coffee exporters purchase coffee from the suppliers to the central auction markets?
2. Do you forecast the movements in the international coffee prices? If so, what are your bases?
3. What mechanisms have you been using to inform the movement of prices to the farmers and coffee dealers at different levels? What are your sources of information?
4. What mechanisms have been utilized to sell Ethiopian coffee to the rest of the world?
5. How do you rank Ethiopian coffee in the world coffee? Which variety does it export?
6. How significant is the cost of transportation in reducing the farm gate price and the profit of the dealers? How do you evaluate the distribution of infrastructure comparing exportable commodity producing areas and the non-producing ones?
7. Why does the auction market is limited to Dire Dewa?
8. Why does the auction market is limited to Addis Ababa?
9. What crucial policy have been influencing the coffee sector and what measures should be taken to avoid?

10. What major problems can be cited around the processing of coffee for export?
11. What factors do you attribute to the poor quality of the Ethiopian coffee?
12. How do you evaluate the distribution of infrastructure - compare exportable producing areas with non-producing ones?
13. Whether the country has comparative advantage in coffee or not?

Declaration

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

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