THE ROLE OF DIVERSIFICATION IN REDUCING IMPACTS OF EXPORT INSTABILITY ON ETHIOPIAN ECONOMIC GROWTH:

An Empirical Investigation

BY

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A Thesis submitted To The School Of Graduate Studies Of Addis Ababa University In Partial Fulfillment Of The Requirements For The Degree of Masters Of Science In Economics (Economic Policy Analyses)

June, 2003

ACKNOWLEDGMENT

I must say that I am most grateful to my advisor, Dr. Getnet Alemu whose invaluable advice and guidance enabled me to successfully complete this programme.

I also wish to thank the entire staff of Economics Department, Addis Ababa University for their assistance and encouragement.

My thanks also go to the African Economic Research Consortium, Nairobi, Kenya for providing me some financial support to pursue and complete this programme.

I cannot forget the love; encouragement and support received from members of my family especially my dear father without whom this work could not have been completed. Above all, I am thankful to God Almighty for his grace.

Shewangizaw Sileshi

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ABSTRACT

There has been considerable discussion during the past four decades on the problems of instability in export earnings and impact of such instability on economic development in LDCs. There is now universal agreement on the view that LDCs have in varying degrees of seriousness suffered comparatively larger magnitudes of short-run fluctuations in their external proceeds than most developed countries (Fowdar, 2002). One of the rationales for diversification is the problems associated with export instability. The hypothesis is that export instability inflicts serious damage upon the economies of LDCs. The poor performance of exports in Ethiopia has largely been blamed on the poor domestic policies, deteriorating terms of trade and export earnings instability. Diversification of the export base helps to reduce the level of fluctuations in export earnings. Attempt was made to examine the possible causes of export instability and the extent to which it affects economic growth in the context of the Ethiopian economy. The hypothesis, whether concentration of commodities of markets attributable to the fluctuations was also tested. In this study more emphasis is given to the cause of export instability, the extent to which level of export instability Ethiopia has faced and its impact on the economic growth in causing uncertainty of source of foreign exchange badly needed for importing capital goods and inputs, and which are essential for growth, followed by a brief case for a more diversified economic base.

Finally, based on the empirical result, the study came up with the existing undiversified export portfolio causes export earnings instability. Moreover, country's world market share and proportion of food exports are found to be significant with the expected signs. Based on the findings of the research, the following key recommendations are made: To insulate the economy from adverse terms of trade and instability in export earnings associated with commodity concentration, there has to be a policy shift to diversify the country's exports to include non-coffee exports. Moreover, the country can achieve stable export earnings by exporting food stuffs as they are low income elastic and help reducing export earnings instability. Lastly, Government should make deliberate effort to diversify export items to manufactures which is a sectoral shift in the structure of production and trade as the existing exports are mainly from agricultural sectors. Moreover, the result shows short-run export instability causes income instability implying impact of export earnings instability is severe and the need for diversifying the existing export portfolio is timely and essential.

Key Words: *Export Earnings Instability, Diversification and Economic Growth*

CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND OF THE STUDY

Like most Sub-Saharan African countries, Ethiopia is agrarian economy with a very small industrial sector. That is to say, the performance of the economy as a whole is greatly influenced by agricultural sector, which is the basic feature of the country's economy.

Being under-developed economy that heavily depends on agriculture, the structure of Ethiopian export is dominated by agricultural products. More than 90% of the country's exports used to account for agricultural sector over a long period except the last two years when the export share of the industrial sector were 15.2% in 1999/2000 and 26.5% in 2000/01 (Export promotion, 2001). This is attributed from improved industrial activities, besides the decline of world price for primary commodities, especially coffee.

The level of development of the countries economy, optimal utilization of resource endowment, appropriate policies and development strategies pursued are indispensable to improve the living standard of the population. This objective calls for a higher level of investment that

requires an increase in import of investment goods, as the domestic manufacturing sector is under developed to generate the capital goods needed for investment purposes. Given in the decline in the external finance, export growth is essential to sustain the normal import level that is to be made to meet the economic development objectives.

Agriculture is a major source of inputs into manufacturing, mainly processing of agricultural produce. Policies directed to develop the agriculture sector, given its importance and linkages with other sectors in the economy especially in income generation, can make a major contribution to economic growth in Ethiopia. Therefore, Ethiopia's long-term development strategy is based on Agricultural Development Led Industrialization (ADLI). The implication is that the pace of economic growth will be set by agriculture directly through its contribution to growth of GDP, and indirectly as a market for the rest of the economy.

In this endeavor the development strategy has given emphasis to the promotion of exports accordingly an export development strategy has been devised to increase and diversify the country's exports.

An improvement in export earnings not only facilitating greater import of capital goods for badly needed investment but also would lead to more import of production inputs for agriculture and industry which are in short

supply. An improvement in the availability of imported inputs associated with sustained export growth would lead to an increase in production of goods and services. In addition, a more competitive environment encourages firms to adopt modern techniques of production as well as marketing which lead to a considerable efficiency gain.

As many of the industries are import dependent for capital goods and inputs and also the higher demand for imported non-substitutable consumer and intermediate goods, the need for accelerating export growth is essential. In this regard, therefore, any retardation in export performance will have a direct repercussion on the growth performance of the economy.

The figures of export volumes and values are important indicator of pattern of trade of the country. Therefore, one can apparently see the varying importance of exports to the economic well being from the share of merchandise export earnings from GDP (export earnings as percentage of GDP) and its share from total government revenue. These figures show the country tends to devote a larger share of its output as merchandise exports. As a result, the significance of export sector and its earnings in the growth process of the country calls our attention to give more emphasis on the problems related to the sector (fluctuation in export earnings), sources of this export earnings instability, its impact on

economic growth and finally diversification as a means of reducing the problem.

At present, the major export products of Ethiopia are coffee, livestock products (leather, live animals and meat) oil seeds and pulses, fruits, and vegetables, textiles and mineral products.

Coffee is country's major foreign exchange earner, contributing about 60% of total export earnings. About 25% of the country's population is involved in coffee's production, processing and marketing.

Thus, while the present effort of the country must concentrate on diversifying its exports, it would also be necessary to continue increasing the volume and quality of exportable coffee. Since it is and would continue to be the main foreign exchange earner for the country for sometime to come. Hence, it is important to deal with problems and prospect related with coffee market that largely attributable to the fluctuations in foreign receipts. Thus, improving the performance of the export sector is instrumental in restoring the country's balance of payment by increasing export earnings and reducing fluctuations in revenues from exports.

This study will throw light on the role for diversifying Ethiopia export in combating the earnings fluctuations and examine the extent to which the

problem is transmitted in to the growth of the country's economy. The study will also identify the kinds of commodities in which they contribute considerably to the stability of the countries export earnings.

1.2 THE PROBLEM

The potential for higher growth in Ethiopia failed to be realized partly on account of policy formulation and implementation and partly because of various adverse shocks. Economic activity in Ethiopia was adversely affected by both draught and war. Moreover, weak prices for its main exports (coffee) have been causing export earnings instability.

Changes in the prices of agricultural commodities in 2000 showed large variations, reflecting significant changes in the balance of supply and demand as well as changes in stock levels. Prices of key agricultural products remained weak owing to weak demand and continued production increases. Continued high out put of commodities such as coffee, cocoa and rice resulted in further down ward pressure on prices. Coffee prices continued to fall sharply in 2000, after a cumulative decline of 45 per cent over the two preceding year also due, in part to weak demand, particularly in Europe and the United States. But a significant increase in coffee production in Viet Nam, which became the world's second largest coffee exporter after Brazil, also contributed to the downward trend in coffee prices (UNCTAD, 2001). Moreover, since the 1970s, there have

been secular declines in the international prices of primary commodities. Countries that specialized in a narrow range of primary commodities are currently faced with declining export earnings and a loss in their share of international export markets (IMF, 1986).

Ethiopia's export portfolio is characterized by a highly concentrated on a few groups of commodities (coffee, sometimes called a one crop economy) which are highly vulnerable to changes in prices of primary commodities. Needless to say, Ethiopia is a price taker in almost all of its export commodities. The world price for Ethiopian coffee usually depends on the performance of the major coffee suppliers (like Brazil and Vietnam) to the world market. Ethiopian coffee price booms were associated with some form of supply short falls from major coffee suppliers.

There fore, the study attempts to examine the possible supply and demand side causes of export earnings instability and the extent to which the problem is transmitted in to the over all economy and causing aggregate income instability thereby deterring export performance and retarding economic growth. Finally, the study focus on what role export diversification would play in reducing the variability of export earnings and hence enhance economic growth.

1.3 PURPOSE AND OBJECTIVES

The source of fluctuations in export proceeds is often believed to be concentrated on an unnecessarily narrow range of products for exports. It is sometimes argued that if these economies were to diversify their exports, their export earnings would exhibit a greater degree of stability overtime. This shows that assessing and examining the role of diversification in reducing impacts of export instability would be the main concern of policy makers.

The study seeks to identify ways in which Ethiopia can improve its export performance in order to reduce the harmful impact of export earnings fluctuations on economic growth of the country. More specifically, the research will:

i. investigate and describe the cause or sources of export earnings instability
ii. assess whether export diversification tends to reduce fluctuations in receipts from different items
iii. identify export items in which they have considerable impact on stability of the countries export earning.
iv. provide insight into the impact and extent of instability problem on economic growth or income instability of the country
v. make some inferences for policy consideration based on the findings of the study

1.4 JUSTIFICATION OF THE STUDY

The relevance of this study can hardly be over emphasized. In the first instance, most researches on this subject i.e. foreign trade with respect to the country's external sector mainly focused on the performance of the export sector and its significance on country's economic growth. Such recent works include Amin, 2001; Debel, 2002; Abay and Zewdu, 1999. Thus, it could be right to say that the outcome of this study would fill the gap in existing knowledge in the area through analyzing cause of export earnings instability and the extent to which it is transmitted in to the aggregate income of the country and hence causes income instability which in turn retards the growth process.

It is also expected that the study would aid policy makers in their effort to revamp the sector through examining the role of diversification in reducing the export instability.

1.5 SCOPE OF THE STUDY

The study is focused on Ethiopia's export earnings instability which is supposed to be a serious problem facing the sector. It examined the possible sources of export instability, the role of diversification in reducing the problem and the extent to which

export instability is transmitted in to the overall economy and causes income instability which in turn retards the growth process.

The study covered the period from 1960/61-2001/02. This is the period for which published data is available.

1.6 LIMITATION OF THE STUDY

The results of the study could be limited by the quality of the data series available. Because of difficulties in obtaining quality data, more than one source was sometimes employed to obtain the data series.

The organization of the paper is as follows. Chapter two reviews different theoretical and empirical literatures in line with the role of export on growth; causes of export instability and its impact on growth. Subsequently, the third chapter reviews Ethiopia's trade policy of the three regimes concentrating on incentives to the sector. Chapter four examines the econometric analysis based on different econometric techniques and the findings are also discussed in this chapter. Finally, in the last chapter, policy recommendation is forwarded and conclusions are offered based on the findings obtained from the analysis.

CHAPTER TWO

CONCEPTUAL FRAMEWORK OF THE STUDY

2.1 INTRODUCTION

In this chapter we shall review theoretical and empirical works in relation to diversification of export, export earnings instability and its impact on economic growth. First the significance of export sector in the growth process followed by the problem related to the sector (export earnings instability) will be discussed and finally diversification in line with the problem will be reviewed in the forthcoming sections.

2.2. EXPORT AND ECONOMIC GROWTH

Export expansion causes increasing efficiency resulting from specialization along the line of comparative advantages, economies of scale, utilization of idle capability and positive external effects on the non-export sector. These static and dynamic gains of export trade in turn promote economic growth and which is portrayed by Export-led growth model. The model explains trade as an engine of growth through analyzing export expansion-economic growth relationship.

Though export-led growth model explains impacts of export on growth in many countries, it has been criticized as defective by some development

economists for some reasons. For instance as in Essang (1981) the model assumes a perfectly classic export demand for agricultural export, thereby ignoring the obvious questions of demand and market access for agricultural exports of the developing counties arising from competition from synthetics, the declining income demand elasticity for agricultural commodities, and protectionist policies of consumer (developed) countries. Also as noted by Essang (1981), the model has little to offer policy makers in their attempt for food crop expansion. It also offers no guide in a growing economy where there is competition for agricultural raw materials between export market and domestic agro-allied industries.

As noted by Meier (1984) it is necessary for the developing countries to raise the productivity of their agriculture so as to make their primary commodity more competitive in the world market. Also of special significant is the ability of these countries to take advantage of export opportunities in the processed and semi-processed products.

2.3 EXPORT INSTABILITY AND ECONOMIC GROWTH

Understanding the impact of instability of export receipts on the economic growth of developing countries has been an important area of research in development Economics for a long time.

Export instability induces short-run domestic instability largely through the impact on producers' incomes and government revenues and, hence, on important components of aggregate demand. Particularly where the productive structure is composed of small-scale unit, where producers' money income are determined primarily by current receipts from export production and where producers' have low marginal propensity save out of current income, export instability is thought to induce similar short-run instability in producers' incomes.

The impact on the government sector arises because export instability may impart similar instability to total government revenues. The sensitivity of revenues is taken to be a consequence of the dependence of total revenue on proceeds from taxes on foreign trade and resulting in fluctuation in government expenditure.

An important dimension of the instability problem is the generation of uncertainty and this held to exert adverse effects in two ways. First, uncertainty about the availability of government revenues is thought to complicate further the already difficult task of development planning. Secondly, uncertainty is taken to affect private sector investment. Short-run export-induced instability in domestic demand suggests to private investors the prospect of over-and under utilization of productive capacity. Moreover, for both government and private investors export instability

may mean discontinuity in the flow of essential imports for investment projects. Consequently, the short-run instability is thought to reduce an economy's long-term rate of growth through altering the path of economic progress by increasing the uncertainty of financial resources needed to purchase capital goods. This, in turn, reduces the overall level of efficiency of a country because the formation of capital is distorted by bad investments planning.

2.4 EXPORT PERFORMANCE AND ECONOMIC GROWTH: EMPIRICAL EVIDENCE

Empirical studies showing the casual relationships between export performance and economic growth abound. In this regard, Chenery and Stour (1966) have argued that there is hardly any country which has a sustained economic growth rate higher than its export growth rate. Maezels (1968), he established that there is a positive relationship between export growth and the growth of Gross National Product, GNP. Krueger and Truncer (1980) and Nishimizu and Robinson (1984) have shown that growth in factor productivity is enhanced by export expansion while import substitution has a diminishing effect.

One feature of these studies is that most of them used data covering various groups of countries in cross-section models. For instance, Balassa's (1985) work covered 11 semi-industrialized countries for the

period 1960-1973; another of his work covered a sample of 43 developing countries for the period 1973-1979. The work by Feder was based on data on 31 semi-industrialized countries from 1964 to 1973; Tyler worked on data for 55 middle-income developing countries covering 1960-1977, while Michealy used 1950-1973 data for 41 developing countries. Another feature which appears to be common to the studies is that they used production functions approach in which export variable is treated as an input. Even if the estimates obtained from inter-country comparisons were useful which most of the time assumed homogeneous economic structure, Ram (1987) rightly noted that there is evidence of tremendous parametric variation across countries in regard to estimates of the growth equations typically used in such contexts. Said it differently, imposition of a common structure in the form of cross-section models can mask some differences in the estimates even when the samples chosen look fairly homogenous. It seems important, therefore, to make a beginning towards an assessment of the export growth nexus for individual countries on the basis of time-series data.

Several studies supported the argument that the positive association of the economy's growth rate with the growth of the export share and this appeared to be particularly strong among more developed countries. This seems to indicate that growth is affected by export performance only once countries achieve some minimum level of development. The level of

economic development influences the extent of the impacts of export expansion on economic growth. This is because the contribution of exports of factor productivity is greater in more advanced countries (Tayler, 1981).

In a similar analysis, Debel (2001) using Ethiopian data series covered the period 1960-2000 had found that export growth has a positive and strong impact on the Ethiopian economy. He adopted two different models to show the causation and the relationship between export and economic growth.

To sum up, from the foregoing empirical studies it is evident that there is a positive relationship between export performance and economic growth. In other words, export growth significantly impacts on aggregate economic growth.

Export instability results from either fluctuations in export prices or quantities or both. Export instability of developing countries which manifests in deteriorating terms of trade are explained by the Structuralist and Marxists as resulting from low demand and prices of primary commodities (Glezakos, 1973). They argue that this trend is caused by the protectionist policies of the developed countries and the use of synthetics in place of agricultural raw-materials in their industries.

Most empirical studies have focused on the role of exports in explaining growth in LDCs, and have been based on the estimation of an "augmented" production function. Recently, there has also been an examination of the role of export instability. It has been argued that economic growth of less developed countries suffers from the deleterious effects of the export instability they experience as they export mainly primary products.

A substantial body of literature has documented a wide range of empirical regularities according to which export earnings instability (EEI) penalizes LDC's economic performance. Recent empirical studies, however, have claimed that there is no statistical evidence to support the hypothesis that fluctuations in export proceeds inflict any significant damage on the stability and growth of the average underdeveloped country. Glezakos (1973) attempted to determine the effect of export instability on the growth of exports and evaluated the relative importance of the export price and export quantity instability effect on economic growth. With in the context of impacts of export instability on economic growth, he criticized methodological deficiencies of the previous studies by MacBean and Coppock (1962) that significantly weaker their findings. According to him, 1) Coppock's instability index, which is the antilogarithm of the log-variance of the yearly rates of change of a time series, is greatly

influenced by the choice of the first and the last year of the series, this measure, especially when it is used for a short-range time series, is almost random estimate of instability. 2) The use of total GNP or GDP growth rates rather than respective per capita growth rates in the specification of growth equation introduce upward biases into rates of the LDCs. 3) the period used for instability index and the growth figures covers different periods. Glezakos (1973) finally recommended that on the basis of the above-mentioned methodological errors Coppock and MacBean results should not be taken as evidence for the relationship between export instability and growth changes. He calculated the instability index as the arithmetic mean of the absolute values of yearly changes in a time series corrected for the trend and expressed as a percentage of the average of all observations. His findings showed that export instability seems to have a significant negative effect on the real per capita income growth rate of the LDCs included in the sample. Specifically, the export instability is found to attribute for about one fourth of the observed variation in the incomes growth rates of the LDCs under considerations.

Recent studies have found that instability in capital formation, capital instability, rather than export instability is a relevant variable affecting growth of less developed countries of sub-Saharan Africa. Fosu (1991) examined the effect of capital instability and export instability on GDP

growth. He used a cross-sectional analysis involving 1967-86 annual data on 33 sub-Saharan LDCs. He observed that neither capital instability nor export instability exercise a negative influence on GDP growth. Controlling for the effects of labor, capital and exports, however, revealed a substantial adverse impact of capita instability on GDP growth, where as export instability is found to be extraneous in the growth equation. Export instability may have deleterious impact on the economic growth in developing economies by disrupting or discouraging capital formation and hence output. It would seem reasonable to build a stable source of foreign earnings for the timely flow of capital formation. One way of doing this is changing the highly concentrated primary products export structure and form a more diversified and stable export portfolio.

Love (1992) considered questions of causation using a Granger/Sims reduced form approach with in an autoregressive frame work, Granger and Sims devised tests for unidirectional causality which have been used extensively to examine causality in major macro-economic variables. These tests if the hypothesis export instability causes short-run income instability i.e. the causality tests whether the causality runs from export instability to income instability. He calculated the respective instability as the deviation from their respective moving average trends. In this cross-section study the differences in economic structure across developing countries, there are likely to be different not only in the extent but also on

the timing of and response in income to export instability. No similar lag structure was likely, there fore, to be applicable to all to countries in the sample. The availability of times series data, only 15 annual observation for sample countries constrained the analysis particularly since the lag structures involved in the estimating equations reduced the degree of freedom and since the use of a five year moving average definitions at each end of the data series. However with above limitation, the out come of the study was consistent with the view that causation runs from trend in export earnings instability to national income instability.

There has been little work so far in examining the effects of terms of trade movements on outputs growth. Lutz (1994) has looked in to the empirical relationship between terms-of-trade volatility and output growth. He found that there exists a statistically significant link between income terms of trade volatility and lower growth rates. When the degree of volatility in the income terms of trade is decomposed in to its components, fluctuations in real exports are of a magnitude similar to those variations i.e. the relative price of tradable.

Fosu (2001) examined the role of import instability vis-à-vis export instability and investment or capital instability in the growth process. He argued that for economies that are heavily dependent on imports for productive investment, such as those of sub-Saharan Africa (SSA), a

stable flow in imports might be critical factor in promoting production efficiency and growth. Using comparable data over 1968-86 periods for 33 SSA countries, the cross-country analysis based on the augmented production function framework suggests that import instability has been negatively affected GDP growth. While export instability is insignificant, especially when capital instability index and import instability index are accounted for in the growth equation. In the specification of the augmented production function of the model, Fosu used the observed growth rate of exports, investment to GDP ratios and imports with their respective instability index. In this case, one can suspect multicolinearity problem and the inference should be taken carefully in such analysis as the use or these variables may lead to the issue of multicolinearity.

Francesco Aielle (2000) attempted to examine the significance and direction of EEI on economic growth using standard growth model and base model for the sampled developing countries. The aim of the study was to evaluate whether export earnings instability exerts a causal impact on the economic growth of LDCs'. This was a core issue in the entire study, because if countries appear to be penalized by instability of their exports, then the adoption of financial compensating systems can also be justified on an analytical ground. As the objective of the study was to capture the impact of export earnings instability (EXINST) on the investments opportunity of a country, the growth rate of total factor

productivity (TFP) was specified as dependent variable. He assumed the same form across countries i.e. a Cobb-Douglas with constant returns to scale and is augmented to include human capital. As regards the conditioning variables, variables were inserted in the regression to capture the structural differences across countries. In order to deal with the problems of endogeneity and reverse causation, estimation were made with the method of instrumental variables, where the lagged variables enter as instruments ration. The index of exports instability used in the growth equations is the coefficient of variation adjusted by the factor, which is the corrected coefficient of determination of the deterministic trend that best fits the actual export revenues. Regression results were obtained for a sample of 108 developing countries, through estimating the base model and variant of it that includes the variables related to trade. As for the signs and significance of variables, the regression showed, export instability was negative and statistically significant. This appears to be a clear indication that variability registered in exports receipts by developing courtiers impedes their growth by lowering the level of efficiency with which input are employed.

Amin (2001) has looked into the impact of export instability on the growth process of Ethiopia with a special emphasis on the coffee sector. He used the Johansen Maximum likelihood method for estimation. He found that export earnings instability was negative both in the long run and short

run. However, the short run coefficient was found to be significant while that of the long run was not. The sign of the coefficients were as per the expectation in the long run.

Though, the debate on whether export instability has deleterious effects on economic growth is yet inconclusive. Hock (1977), Love (1975) Voivodas (1974), Glezakos (1973) Kenen and Voivodas (1972), in their studies established that there is an inverse relationship between export instability and economic growth. In a similar vein Chenery and Ecksein (1970) and Applegate (1970) have indirectly shown that export instability limits growth. Their works respectively showed that foreign exchange is dominant constraint on growth of developing countries as it limits capacity to import needed capital goods. On the other hand, studies by Coppock (1962) and MacBean (1966) have found that there is no significant relationship between export instability and growth. However, Glezakos (1973) has argued that their studies seem to suffer from several methodological drawbacks. Maizel (1968) also argued that the result of MacBean would have been different if he had done his analysis on country by country basis instead of cross-sectional.

As we reviewed the literature on this subject, the relationship between EEI and economic growth may be either positive or negative. However, given the sample of countries examined and the criticism to the optimistic view

on EEI, one would expect to be negative. Indeed, papers which claim that EEI is positively linked to the economic growth of a country have been the subject of so much methodological debate which casts doubts on the validity of the interpretation of their results. This is why many authors and international institutions now a day argue that export earning stability is a prerequisite for economic growth. Moreover, it is likely that these countries are penalized by the instability of their exports.

It is also author's opinion that the export instability limits economic growth especially of the developing countries since it leads to poor export performance which results in foreign exchange shortage and thus constraining import capacity.

In recent years there has been considerable discussion of the problem of instability in commodity markets and the impact of these fluctuations on countries producing primary products. Massell (1970) have looked into the relationship between the value of exports and a set of variables that help characterize a country's economic structure. For each of 55 countries an index of the instability of merchandise export receipts is constructed employing data for 1950-66. He used regression analysis to explain inter-country differences in export instability in terms of nine structural variables. The study attempted to form some general idea of the problem but do not provide all the relevant information for the particular country.

He concluded that the LDCs have high values of commodity concentration index, domestic consumption ratio and a low value of merchandise export. All of which were helped to explain the greater export instability of LDCs.

The findings obtained in the study, the negative significance of food ratio, is contrary to results obtained by Mac Bean (1966) and by Massell (1964), who found the primary product ratio to have a significantly positive ratio. As commodity concentration is highly significant in instability of LDCs export, one suspect that efforts to diversify exports and to shift resources from primary production to other commodities that the country has comparative advantage, at least in part, to decrease export instability. He also recommended that it is difficult to reach meaningful policy judgment with out answering the effect and extent of instability on the rate of growth. However, the methodological error in considering the relevance of crossectionally estimated parameters for answering questions that are implicitly of a time series nature must be carefully considered in making inference.

Benton F. Massell (1964) attempted to determine whether diversification is likely to provide a greatly increased measure of stability overtime. He examined empirically, in a sample of 36 countries, the extent to which fluctuations in a country's exports. He adopted a linear regression method to express export instability as a function of several dependent

variables. He concluded that the relationship between instability and concentration is a tenuous one. Even if the pair of variables primary products and geographic concentration provides the best explanation of inter-country variation in export instability, instability is weakly related with primary product ratio. However the study has certain limitation, which stems from the uniqueness of countries and commodities. As a result, the conclusion presented provides merely general guidelines of certain fundamental economic relationship.

A number of authors have carried out a research to investigate the determinants of export instability. Given that export instability is essentially a market phenomenon and given that proposed stabilization schemes aims at stabilizing export prices or earnings on a market-by-market basis, it may be of interest to investigate the determinants of instability at the market level. Among pioneers, Massel (1970) and Micheal (1985) attempted to explain inter-market variations in prices based on a sample of 61 LDCs primary commodity markets. A model similar to that used to explain aggregate export earning instability has been tested. He concluded that internal fluctuations in demand for commodities are found to be a major determining of export market instability.

Mulualem (2002) tried to examine the overall performance of leather export sector which has been considering as the second most important source of foreign currency to the country. Econometric approach was applied to determine the major factors for the variation in the supply response of the sector during the period from 1960-2001. However, there was no consistency in measuring domestic demand pressure for leather in the three regimes, the study came up with world market price or unit value and real exchange rate had significant effect on the long run supply of the export sector. This showed that price fluctuation and decline in the world market is a disincentive for the performance i.e. stability in earning and growth of the sector. Hence, price based stabilization policy and diversification either by changing its share in the export portfolio (horizontal) or vertical diversification which is made in effect through exporting processed and semi-processed leather products. This in turn would lead the earning more stable and enhance growth of the sector as the processed commodities maintain a relatively more stable world price.

Abay and Zewdu (1999) have tried to point out the causes of export instability in Ethiopia. They showed that proportions of the values of food items exports to total export proceeds and the country's share in the world market have negative relation ships with the export earnings instability. They used a traditional OLS technique to estimate the parameters in the instability equation. Co-integration analysis of the linear

regression model has been less emphasized and weakly treated with 30 years sample points. In view of the fact that for every empirical study of export instability the measure of instability is of crucial importance as adopting different instability indices may give rise to different empirical results. Hence, for long-range time series a better fit should be designed to derive the instability index. Most variables were not found to be significant which may possibly stem from measurement of the dependent variable, instability index. The type of trend fitted to the data influences the measures of insatiability obtained. For instance, using exponential or linear time trend may provide a better fit for cross-sectional analysis that considered mostly short-range time series.

In this study attempt will be made to identify the possible factors that can affect export instability index using the more robust Johansen log likelihood ratio method that possibly avoid the deficiencies faced by the previous study. Moreover, other important variables will be included in the model and a five-year centered moving average will be used as a better estimate for the trend of export earnings and its deviation as instability index. To sum up, the main focus of this research is to identify the major causes of export earning instability and examine whether diversification as a means of maintaining stability and growth in export earnings and at the same time to find out the causality between earning instability and national income or economic growth instability. Finally based on both

descriptive and econometric evaluations inference and favorable policy recommendation will be forwarded.

2.5 THE ROLE OF DIVERSIFICATION IN STABILITY AND GROWTH OF THE EXPORT EARNINGS

Diversification to national trade portfolio can help achieve export earnings stability and growth. It can considerably minimize 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, and by substituting domestic production of food commodities and industrial raw material commodities for imports.

The process of 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 marketing, the more specialized it becomes. 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 varieties 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.

Export diversification can take different form and it has different dimension. Export diversification can be achieved either by adjusting shares of commodities in the existing export mix, or by adding new commodities to the export mix. There are horizontal and vertical dimensions to export diversification. Horizontal diversification involves adjustments in the export mix in order to counter international price instability or decline. Vertical diversification involves creating additional uses for existing and new commodities through value added activities such as processing and marketing. Vertical diversification can expand market opportunities for raw materials which enhance growth and lead to more stability since processed goods tend to have more stable prices than raw commodities.

These different dimensions of diversification are related to the market orientation and degree of processing of different export commodities.

Some exports are oriented primarily towards international markets (e.g. coffee) with minimal processing, and others are oriented towards both international and domestic markets (e.g. Cotton, sugar, food staples) either in raw or processed forms .The latter group, called import

substitutes, has greater market flexibility (which tends to stabilize domestic production), and can also be used as inputs for vertical diversification.

The different means of combating instability in export earnings precipitate the need to closely consider various export diversification policies. If the country's policy goal is to achieve both stability and growth in export earnings, the country may pursue adjusting the export shares of the existing and adding new commodities based on covariation of export earnings from individual commodities and growth rate of export earnings from individual commodities.

2.5.1 MEASURES OF EXPORT PERFORMANCE AND DIVERSIFICATION

The two measures of performance used in this section are growth and stability of values of exported commodities. The average annual percentage growth of export is not calculating using the usual a log-linear trend rather the actual annual percentage change is computed as the data covers a long time period. Instability is calculated as percent deviation. When constructing a measure of instability based on deviations from the fitted moving average trend, it is, implicitly assumed that the fitted trend itself is predictable and not a source of instability.

The coefficient of variation (CV) is a unit free measure of instability. Because of its simplicity, in this section the CV is used; where as horizontal diversification is reflected in this paper by indices of concentration, which measure the distribution of export shares.

2.5.2 EXPORT CONCENTRATION

The degree of diversification can be considered as a function of both the number of commodities in a country's export mix, and distribution of their individual shares. When using measures of export earnings concentration on wider variety of exports will lead to increased stability or growth in export earnings. Popular measures of export concentration include ratios, the Gini-HirchMan index, concentration ratios and the shares of a country's top agricultural exports in total agricultural exports which give a clear and simple indication of the degree of export concentration. Hence, a diversified export mix would have a low share of earnings concentrated in a few commodities.

2.5.3 TOWARDS EXPORT STRUCTURAL CHANGE

Structural diversification is the process of economic transformation as resources are shifted with in the agricultural sectors to higher value activities, and out of agriculture in to manufacturing and services. As the

manufacturing and service sector develop, there is a greater potential for value-added activities. Value added activities can contribute to a growth-oriented export diversification strategy and increase export earnings stability because price of processed goods tends to be less volatile than prices of raw commodities.

The subsequent methods are used to examine the need for and potential for stability and growth-enhancing diversification. In order to determine the appropriate goals for different kinds of export diversification polices, growth rates and coefficient of variation (CV) are calculated and the source of growth and stability are analyzed.

The value of export earnings, by definition, is a multiplicative relation ship between the volume and unit values of commodities exported. The CV for volume and unit value for each commodity is compared to determine the relative contributions to export earnings instability.

With in and between sub-period analysis of CV and growth rates for export value, export volume and export unit value are conducted to assess the sources of instability and decline.

During 1974-1987, real world prices for commodity exports were unstable and down trended, while overall world trade volumes in these commodities increased. World price declines and increased price instability

were accompanied by increases in world volumes traded especially for agricultural commodities (WPS 729, 2000).

The instability and downward trend in export earnings are now become extreme concern to policy makers. They tend to equate a narrow export commodity base with the instability and declines in earnings, and to propose export diversification as an expedient remedy.

The negative price trends imply that growth in export earnings from agricultural commodities is possible, but only if volume exported grows substantially this can be done through either increased returns to factors of production by increasing productivity or by lowering marketing cost.

In general, World Bank commodity projections indicate that down ward or stagnant world price trends, and year to year instability for these commodities will continue i.e. changes in the prices of agricultural commodities in 2000 showed large variation, reflecting significant changes in the balances of supply and demand as well as changes in stock levels. Prices of key agricultural products remained weak owing to continued high output of commodities such as coffee, cocoa and rice resulted in further down ward pressure on prices. Coffee prices continued to fall sharply in 2000, after a cumulative decline of 45 percent over the two preceding years also due, in part, to weak demand, particularly in Europe and the

united state which are the country's major trade partners such as Germany, United State and Italy (UNCTAD,2001).

But a significant increase in coffee production in Viet Nam, which became the world's second largest coffee exports after Brazil, also contributed to the down ward trend in coffee prices (UNCTAD, 2001) This means that the country will need to focus its attention on identifying their comparative advantage, and improving productivity and lowering costs by using appropriate policies, and investing in infrastructure and support services. Even though Ethiopia's aggregate export earnings grew during the current regime and were relatively stable around the trend, it is highly dependent on Export earnings from a narrow base of agricultural commodities. This dependence has not been changed for a long time since 1960. Agricultural commodity exports accounted for 91.1%, average of annual share, of the country's total export earnings during 1961 to 2002.

Concluding, as we have seen in this theoretical and empirical discussion export instability has been a serious policy issue and a move towards diversification is seem to be necessary to reduce its impact on the economic growth. Following this chapter, Ethiopia export trade policy and its performance with much emphasis on diversification is reviewed.

CHAPTER 3

Review of Ethiopia's Foreign Trade Policy and its Effect on Export Performance

3.1 Introduction

The objective of this chapter is to assess the changes in the foreign trade sector by analyzing mainly the effect of policies pursued on export performance i.e. export earnings growth and stability through reviewing the previous and the current policy regimes, administrative and institutional set up as well as to identify major bottlenecks which call the attention of policy makers to take appropriate policy and institutional measures.

The various measures, (policy, administrative, institutional etc.) under taken during the three regimes as relevant mainly to foreign trade will be highlighted. Finally various trade reforms undertaken after the overthrow of Derg and the effect of these measures mainly of devaluation and trade liberalization shall be treated under export performance.

This chapter mainly involves a review of policy documents and summary of data obtained from various government institutions such as from Customs Authority, National Bank, Center Statistical Authority and Ministry of Finance and Economic Development.

3.2 The Imperial Regime (1960/61-1973/74)

A number of sectoral programmes of medium and long-term duration, Ethiopia embarked on a series of integrated plans beginning 1958. A brief summary of Ethiopia's development plan with much emphasis to the export sector have been presented below.

The first five-year plan was implemented in the period (1958-62). The major objectives of the plan were a) to promote the development of physical infrastructure b) to develop social infrastructure in the form of education and health c) to accelerate the modernization of agriculture d) to raise industrial production based on locally available raw materials. However the objectives were not met fully as it was stipulated in the plan, the first Five-year plan could be considered as the preparatory phase for more elaborate future plans.

Following the First Five-year Plan the country embarked the Second Five year plan (1963-67) which constituted the first stage of a 20 year perspective plan stretching in to the beginning of the 1980s. The overall objective was to bring about a structural transformation of the economy from a predominant agricultural base to industrial and agro-industrial one. If considered agriculture to be the leading economic activity which could result in the largest contribution to increase in national production.

Agriculture was to supply move food for the growing population more raw material, for industry and goods for export. Consistent with the plan's objective of raising agricultural output, the sector received the highest priority in the investment programme.

Finally in this regime the last plan was the Third Five-year plan (1969-74) with the overall objective of attaining a 6% average rate growth in the gross domestic product which was projected to increase from about 3.6 billion birr to about 4.8 billion birr so as to enhance the living standard for the population (The Third Five-year Plan, 1969).

In sum, starting with a number of sectoral programmes of medium and long-term duration, Ethiopia embarked on a series of integrated plans beginning 1958. Before the revolution of 1974, three five-year plans were prepared and the fourth were nearing completion but was over taken by the events of 1974.

The trade strategy Ethiopia was following during this regime was an inward oriented strategy which was characterized by high level of protection for manufacturing through direct control on import and tariff imposition. The level of tariff protection was designed to promote greater competitive efficiency in production, and giving the protection level necessary for infant industries. As an inducement for investment in export

from established companies, a repayment of the import duties paid on the raw materials and components incorporated in to products exported was allowed (The Third Five-year Plan, 1969).

Consistent to the three plans the export sector has been improved as agricultural sector took the highest priority and raised the volume of total exports. Between 1960 and 1965, the total exports increase at average annual rate of about 10%. However the export mix of the country remained unchanged and undiversified. Coffee historically dominated Ethiopia's export trade. In deed, coffee remained the pillar of the country's export trade and the major determinants of economic activities receipts from coffee export.

This conveyed that there was no any shift towards a sustained diversification of exports, for coffee continued to dominate Ethiopia's export trade, averaging 54% total earnings between 1950 and 1974, to the extent that earnings from coffee exports determined, among other things, budgetary revenues, public as well as private saving and investment; thus the volume of imports and economic activities in Ethiopia remained at the mercy of fluctuations in world coffee prices. Moreover, like the prices of most other primary commodities, world prices for this commodity not only fluctuated wildly but were also characterized

by a persistent down ward trend in terms of constant prices (Shiferaw, 1995).

In general, agricultural exports constituted the bulk of Ethiopia's export trade during this regime. Non-agricultural products accounted for less than 10% of the totals exports, thus showing that there was neither change in the structure of exports nor in their diversification (The three consecutive Five- year Plan of the Imperial Era 1941-74).

3.3 The Military Regime (1974/75-1990/91)

The trade strategy the country was following pre 1992 was classified as a strongly inward oriented one which made use of extensive tariff and non-tariff barriers. The military government planned and carried out a ten-year perspective plan. The main objective of the plan was centered to diversify the existed export structure towards manufactured products and expand substantially the country's foreign exchange earnings. The plan set the share of traditional exports to decrease from 73.5 percent in 1985/86 to 53.2 percent in 1994/95, while the share of other export products to rise from 26.5 to 46.8 percent in the plan period. The strategy also favors production for domestic market since all the incentive structure was strongly in favor of home consumption.

Adopting an inward oriented trade strategy, Ethiopia trade regime was characterized mainly by fixed exchange rate, high implicit and explicit export taxation, the use of subsidies and rationing of foreign exchange were the major ones. These policies had a negative repercussion on the performance of the export sector and were largely responsible for stagnant growth of export earnings during the pre-reform period. A brief assessment of the effect of these policies on export will be presented below.

Since the onset of the military government various legislative and institutional measures have been taken to manage the countries foreign trade through central planning. As a result of these measures, 72 percent of the countries export trade and 80 percent of its import trade were in the hands of state trading enterprises. With respect to the growth of foreign trade, merchandise exports rose, in value terms, from 306.7 million Birr in 1970/71 to 928.4 million Birr in 1983/1984. However, most of the increase in the value of exports is accounted for by the rapid rise in prices witnessed over the period rather than by any significant changes in the volume of exports (provisional Military Government of Ethiopia Ten-Years Perspective Plan, 1984/85).

Various exchange rate measure undertaken under the then regime such as the birr remain pegged to the dollar which in effect resulted in the

overvaluation of birr vis-à-vis other currencies. Ethiopia's birr has been paged to us dollar rate of $ 1=2.07 Birr for a long time (for 17 years since 1973/74). Taking 1973/74-1975/76 as the base, when the military government came to power, the real effective appreciation of the birr was about 50 percent. The overvalued exchange rate had its own negative effect or export as well as on import. On the import side, the overvalued rate made importing cheaper resulting in low incentive for local production of intermediate goods and raw materials, causing high import dependency of local manufacturing activities and consequently a big pressure on current account. On the export side, it created an anti-export bias, where exporters procure their inputs at domestic price which in many cases is inflated for various reasons, but they need to export their output at birr equivalent of world price which is very low due to over valued currency. Therefore, over valuation of the birr was one of the major causes for the decline in the profitability of export production.

Direct tax on export was not significant except on coffee. The surtax on coffee was very high and this resulted in lower share of the peasant from the world price. This lower share was not sufficient to induce the farmer to invest on exportable production in the form of using new technique of production. This in turn results in stagnancy or declining production level. Furthermore, higher taxation creates an incentive for illegal exporting (i.e.

to evade the tax burden) as well as for local sales as there was no or minimum level of taxation on local consumption of exportable.

Apart from direct export tax the then tariff level was negatively influencing the profitability of exporting through pushing the cost of imported input which is used for export production.

In order to counteract the negative impact of overvaluation of the birr and unfavorable incentive structure, an export subsidy for most export products had been given. The subsidy was financed by levying a 5% tax on import. But the level of the subsidy was not sufficient to produce any significant results so as reduce to the problem that arises from the inherent structural problem prevailing in the economy (MEDaC, 1996).

One major objective of the state was the socialization of trade. In view of this objective the state has established state exporting enterprises. These enterprises were given a monopoly right in procurement and states of export producers. In addition, the state used these enterprises to counteract the likely unfavorable incentive system on export by just making profit a secondary importance while giving priority to foreign exchange earnings. As a result of this deliberate action, on the one hand the export sector lost its dynamism, and on the other hand it created a

barrier for new entrants in the export trade as well as hampered the activity of the already existing private exporters.

Foreign exchange had been allocated administratively. The procedure for releasing foreign exchange for an importer was very lengthy and cumbersome. This system as non-tariff barrier confers high degree of protection for import substituting activities by altering the domestic relative price against exporting. Other similar measures also had a serious repercussion on the export performance of the country as well as on the resource allocation of the economy.

To sum up, despite the measures taken by both the Imperial and the Military regimes to diversify the export basket and promote exports, the Ethiopian export products remain concentrated on very few primary products. It is clearly evident that the incentive structure was highly in favor of domestic production. There fore, due to the inventive structure the trade strategy was inward oriented with tariff and non-tariff barriers this in turn seriously distorted the resource allocation of the economy which is reflected in low growth rate and declining export earnings of the country.

3.4 The EPRDF Regime (post-1992)

3.4.1 Reform Measures Taken In the Foreign Trade Sector

Reform measures have been taken in the foreign trade sector by the current government in collaboration with the World Bank since 1992. A major task of the transitional government, therefore, was found to be geared to revitalize the external sector. To do so the first step to be taken must be directed towards achieving neutrality in incentive structure. Accordingly, the following packages of policy measures were undertaken to redress the working of the foreign trade sector.

Birr has been devalued by 59 percent in terms of US dollar in 1992 and a subsequent by-weekly auction of foreign exchange introduced. In combination of this, the liberalization and deregulation of the domestic marketing which foster competition facilitate for this price increase to pass to the producers there by altering the producers decision either to allocate their resources in the production of exportable or direct their market outlet i.e. a shift from unofficial to official channel as these measure will narrow down the price gap between the two markets. On the import side, devaluation via its effect on raising the local price of import results in a substitution of import for domestic goods. Moreover, it creates a pressure on the consumer of importable as devaluation made expensive prices of importable at local currency and hence raising the cost of import.

Similarly, the elimination of state monopoly in external trade will also encourage export. This measures result in an increase in export in two ways. First, the measure created a challenge to state exporting enterprises to rationalize their costs if not they ceased to exist. This in turn enhancing their degree of competitiveness and profitability and hence improves their export performance. Secondly, the measures create conducive environment for private exporter by reducing the entry barrier that was placed on them. This attracts new entrants in export trade as well as fosters the scope of the existing ones.

The tariff regime has also been revised. Rates have been substantially reduced, the number of tariff group has been slashed, and the scope of tax exemption has been tightened. Thus the maximum rate has been reduced from 280 percent to 80 percent, during the first move of import liberalization and currently stood at 50 percent. Similarly the state removed a 2 percent transaction tax on non-coffee export as well as abandoned the direct financial subsidy on export (MEDaC, 1996). The rationalization of tariff structure will also encourage export by enhancing the profitability of export via reducing the input cost of export production either directly or indirectly through altering the domestic price level and result in a fall in domestic inflation and there by raises the competitiveness of Ethiopian exporters vis-à-vis the rest of the world.

The import and export licensing were simplified and become more transparent. The range of goods and services covered by auction has been progressively extended and competitiveness of export increased. The other main external reform measure was the suspension of taxes and duties levied on export goods except on coffee which was introduced in 1993. This measure provides a strong incentive to exporters together with the devaluation as it allows them to receive the equivalent of world prices for exportable. Government subsidy to exporters was also terminated when export taxes were lifted. Complementary to this measure, the state introduced a duty draw-back scheme where exporters are refunded the tax and duty paid on the inputs they use on export production in 1993 to encourage investment in the production of exportable.

Regarding to state exporting enterprises, they were denied their monopoly power but they are provided a managerial autonomy. Even though there are still policy and institutional constraints, a better conducive environment was created for private exporters. A few investment codes have been introduced that entitles exporters to be the beneficiary of incentives.

The liberalization of foreign exchanges allocation, tariff rationalization as well as the elimination of state monopoly in import trading reduces the rent-seeking activity via its effect on improving transparency as well as

reducing the foreign exchange scarcity that is inherent in the economy. In line to this measure the government has also introduced a bi-weekly foreign exchange auction markets since 1993. Since 1998 the government has also replaced the retail auction market by a whole sale auctioning where commercial Banks, foreign exchange bureau and investors in need of large amounts of foreign exchange have been participating.

Among a package of policy measures adopted by EPRDF regime, rationalization of the tariff structure, internal market liberalization, elimination of export taxes except on coffee are believed to have a strong positive impact on the functioning of the sector.

Among these measures, devaluation of the local currency (Birr), make export market more attractive than the domestic market which, therefore, shifts resources from production of goods for home consumption to the export market. But the shift depends on the degree of substitutability in production and consumption existing in the domestic economy. Moreover, in the long runs these policies alter the relative prices of tradable and non-tradable in favor of the former. If there are non-structural constraints, these policies bring a switch of resources from non-tradable to tradable or new resource will be channeled to tradable sector.

3.4.2 Impacts of the Reform

After a package of policy reform the export performance of the country has shown a recovery. During the reform period the export earnings has reached to a high level by showing an average growth of 92.7%, 104.5%, 199% in the period 1993, 1994, 1995 respectively suggest a sign of improvement compared with the preceding two years. However, the growth rate was only 4.9% if we compare the level in 1993 with the level of earnings that considered being the normal year before the reform, 1983. The 1993 growth rate was inflated as 1992 was taken as a base year which recorded the lowest earnings in the period. Comparing the level of earnings in 1995 with the level in 1988 the growth rate of earnings was 199% however the volume was declined by 37.4%, suggesting partly the growth in earnings was boom in the price of coffee. In general, the annual average growth rate of export earnings and volume is 28% and 10% respectively between 1992 and 2001 exhibits improvement.

But caution is needed in interpreting the growth. As the volume of export in 2000 is compared with the volume in 1988 a decline of 26% is observed in contrast to an increase of 320% in export earnings implying that the growth in earnings is purely a price effect that originates from a coffee price boom.

One of the major Policy related factors attributed to poor export performance is exchange rate policy followed by the different regimes. A prolonged overvaluation of the birr used to erode the profitability and competitiveness of most exportable products. On top of this, price and market regulation for agricultural product had been seriously harming the agricultural export. These and other similar policies have forced farmers either to shift their resources to the production of staple crops or resort to other means of selling i.e. smuggling their products at higher price.

Not least important is factors related to regulatory and legal frame-work that mainly constrained the role of private exporters in the sector. In the Derg regime, there had been an extensive legal and regulatory impediments deliberately placed to suppress the role of private sector. Due to the socialist economy of the former regime the role of private export was being marginalized. Their share during the year of 1988 was only 11.2% (MEDaC, 1996). Measures such as market deregulation, improved licensing procedures, and removal of all sorts of restrictions placed on the number of activity that a private agent may engage have facilitated the involvement of the private sector in all sectors. This avails the opportunity for private agents to play an important role in the export sector.

The introduction of the reform measures in1992 seems to have a positive impact on export performance. Export earnings have showed a continuous revival in the years following the reform reaching a level of 452.6 million USD in 2001/02. Average share of export in GDP (constant market price) is 12.5% and average share of export in import bill is reached 54.4% during the period. A considerable growth in export earnings was particularly registered in 1994/95 mainly due to windfall gained from an increase in world price of coffee. A marginal decline in export earnings was observed in 1995/96 i.e. from 26.2% in1995 to 1.8% in 1996 which was mainly owing to the reversal of trends in world coffee price as compared to the previous years.

Particularly 100% growth in 1994/95 Vis-à-vis 1993/94 suggests the sign of improvement. But the growth rate is only 11.3% if we compare 1994 with the level of earnings that was considered to be a normal year before the reform 1988. In a nutshell, the performance of export earnings since 1992/93 has been encouraging but still fall short of financing the import bills (survey of the Ethiopian Economy, 1998).

Although the result so far show a substantial recovery in export and indicates positive response to policy changes, long run supply response ensuring higher growth and diversification can be achieved only through further structural reforms and the creation of enabling environment for

the private sector. Generally, export diversification is supposed to bring economic development, but it lacks a clearly stated objective. Diversification should help to restore the equilibrium in the balance of payments, and should contribute to poverty eradication and food security. In this regard, the country designed export development strategy for the development of the export sector. As it is shown in the 1998 export development strategy, the purpose of formulating a strategy for the development of exports is to provide focus in a key area of Ethiopia's long term economic growth. With out a fast growth of exports it will not be possible to attain the growth target of at least 7% percent, or to maintain macroeconomics stability (Export development strategy, 1998).

The strategy for export development is believed to be conceived along four lines in parallel. i) to maximize the gains from surplus venting through productive improvement and cultivation of unused land. ii) to utilize the advantage of natural resources for exports of high-valued agricultural products including vegetables, flowers, and fruits as well as fresh chilled meat. iii) to open a new basis of exports of manufactured goods grounded on the country's comparative advantage of labour. iv) to discover exportable mineral and fuel deposits (Export development strategy, 1998).

3.5 The significance of export in the growth process

An improvement in export earnings facilitates greater import of capital goods for badly needed investment and would lead to more import of production inputs for agriculture and industry which are in short supply. An improvement in the availability of imported inputs associated with sustained export growth would lead to an increase in production of goods and services.

As many of the industries are import dependent for capital goods and inputs and also the higher demand for imported non-substitutable consumer and intermediate goods, the need for accelerating export growth is essential. This would enable export to play its role as an engine in the growth process. In this regard, therefore, any retardation in export performance like export earnings instability will have a direct repercussion on the growth performance of the economy.

Table3.1: Share of Exports in the different sectors of the economy

Period	Average Share of Exports in GDP (%)	Average Share of Exports Covering Imports Bill	Average Share of Export Tax from the State Revenue (%)

		(%)	
1960/61-1973/74	8.6	83.4	6.7
1974/75-1990/91	9.2	60.4	10.0
1991/92-2001/02	13.1	52.3	1.5
1960/61-2001/02	10.1	66.0	6.2

During the period 1960/61-2000/01 proceeds from exports covered more than 66 percent of the import bill of the country. In 1972/73 and 1973/74 ,in the imperial regime, the proceeds from export was able to cover the total imports bill and even register a surplus which was 109 and 116 percent respectively. Even if export earnings increased in the EPRDF regime, it is in short of financining the increasing demand for imports (see fig.1). Hence expanding exports enables the country reduce the foreign exchange constraint that acts as a bottleneck for the growth of the economy. Due to administrative inconveniences or high cost to raise government revenue, tax on foreign trade constitute a major part of the state budget. During the three regimes all together foreign trade tax accounted for more than 27.9 percent of the state revenue of which 6.2 percent comes from export tax.

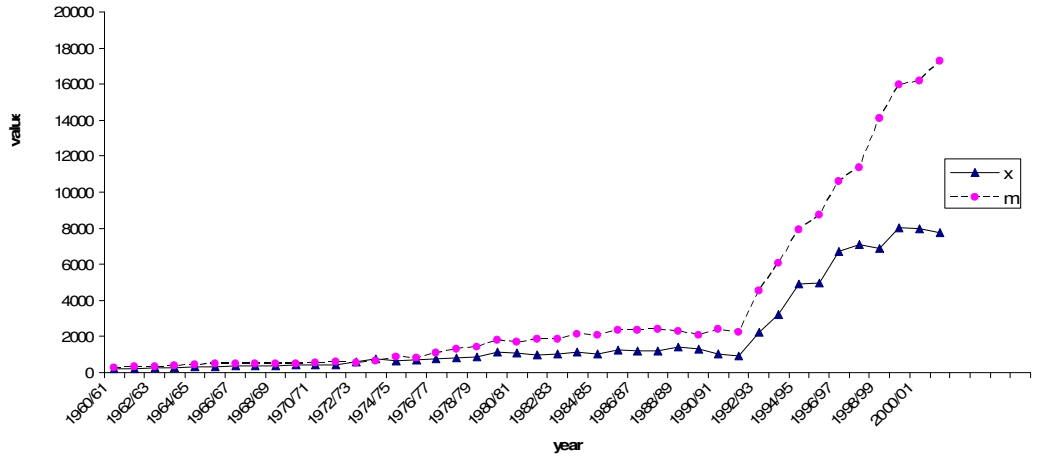

Fig.1 Ethiopian export Proceeds (X) and import bills (m) for the period 1960/61-2001/02

Following this, attempt is made to examine quantitatively the possible source of export instability which retards the export performance and in turn economic growth. Moreover, export earnings instability can cause aggregate income instability and hence uncertainity of financil resources. Which in turn, complicate the already difficult task of development planning and cause instability of import of investment goods which are essential for economic growth. In the same token, which is instability of government revenue generated from export tax and producers' income who were involved in the export sector.There fore, export induced instability retards the the overall growth rate of the economy.

3.6 Source of Instability and Growth of Ethiopia's Export earnings

Based on the preceding discussion attempt is made to identify the source of instability in the country's export earnings. The coefficient of variation

(CV*) for volume and unit value for each commodity is compared to determine the relative contributions to export earnings instability. With in and between sub-period analysis of CV and growth rates for export value, export volume and export unit value are conducted to assess the sources of instability and decline.

Table3.2 Variability and growth rates for export values and major components of commodity exports

	Coefficient of variation and average growth rate of Total export and major components Earnings		
Commodity	1960-1973	1974-1991	1992-2002
Coffee	13 (16.8)	27.8 (3.1)	65.1 (6.7)
Hides & Skin	33 (35.6)	34.9 (0.8)	91.7 (10.5)
Pulse	380 (37.2)	36 (0.8)	58.2 (59.8)
Total Export Earnings	22 (8.5)	24.4 (0.9)	63.3 (27.3)

Source: Values calculated from data obtained from National Bank and Custom Authority, CVs for instability and average annual growth (in parenthesis)

Table3.3 Coefficient of variation (CV) and average growth rate of World Prices for major Commodities from 1960 to 2002

	Coefficient of variation and average growth rate of World Prices for major commodities		
Commodity	1960-1973	1974-1991	1992-2002
Coffee	6.08 (-53.8)	35.76 (-44.1)	25.28 (32.5)
Hides & Skin	9.31 (-83.1)	16.1 (-40.84)	9.14 (-33)
Banana	2.84 (-71.4)	23.9 (-37)	14.74 (-36)
Cotton	8.3 (-49.8)	14.13 (-54)	17.5 (-54.5)
Sugar	4.1 (-93.9)	8.99 (-80.2)	7.18 (-72.2)

* $CV = \frac{\left[\frac{\sum_{i=1}^{T}(Xt - \overline{Xt})^2}{T}\right]^{\frac{1}{2}}}{\overline{X}} * 100$ Where X_t is the observation in the year t. $\overline{X}_t$ is its value predicted from moving average trend estimation. $\overline{X}$ is the overall mean, and T is the number of observation in each sub period.

Source: Values calculated from IMF International Financial Statistics data, CVs for instability and average annual growth (in parenthesis)

As shown above in table3.2; from 1960-1973 export earnings growth increased by 8.5 percent annually, and instability was 22 percent. Even if there was a decline in coffee world prices (53.81 percent), the moderate rise in the rate of export earnings growth can be attributed to the growth in total volume that could offset declining world prices. Export volume growth for those commodities remained moderate from 1960-1973.

From 1974-1991 export earnings growth was 0.9 percent annually, and instability was 24.4 percent. The slow growth rate and high variability in export earnings in the Derg regime is owing to the decline in volume exported, due to strongly inward oriented trade policy, and the fall in world coffee (44.12 percent) and other commodity prices. Export volume growth for those commodities remained slow from 1974-1993.

From 1992-2002 export earnings has been growing on the average by 27.3 percent annually, and instability was 63.3 percent which is the highest variability in export earnings. The high growth rate and variability in export earnings in the current regime is owing to the boost in volume exported, due to export trade biased policy accompanied by recovery from decline in world coffee prices. The average annual growth rate of coffee during this period is 32.5 percent. The rise in the rate of export earnings

growth can be attributed most to the growth in total volume. Export volume growth for those commodities remained strong during this period.

Table3.4 Coefficient of variation and average growth rate of total volume of export, unit value and total export earnings from 1960 to 2002

	Coefficient of variation and average growth rate of total real export, unit value and total export earnings		
Commodity	1960-1973	1974-1991	1992-2002
Export unit value	0.5 (10.8)	0.3 (0.2)	0.7 (21.2)
Total Volume Export	0 (8.6)	0.1 (4.5)	0.4 (22.6)
Total Export Earnings	0.22 (8.5)	24.4 (0.9)	63.3 (27.3)

Source: Values calculated from data obtained from National Bank and Custom Authority, CVs for instability and average annual growth (in parenthesis)

The above table (table3.4) illustrates that in the three periods considered; export volume instability was smaller than unit value instability for all of export commodities. If greater stability export earnings were desired, efforts to price based stabilization through diversifying the composition mix of export based on price oriented diversification were preferred.

Unit value instability increased at a greater pace than export volumes, to the point that unit value instability reached 0.7 which is greater than volume instability with covariance 0.4 in 1992-2002. Thus for the entire period, demand side fluctuation is mainly the source of export earnings instability during the period under investigation. Hence, a price-based stabilization program has more potential during this period.

Finally, undiversified export portfolio is also taught to be the source of instability i.e. as commodity concentration increases export earnings instability will also increase.

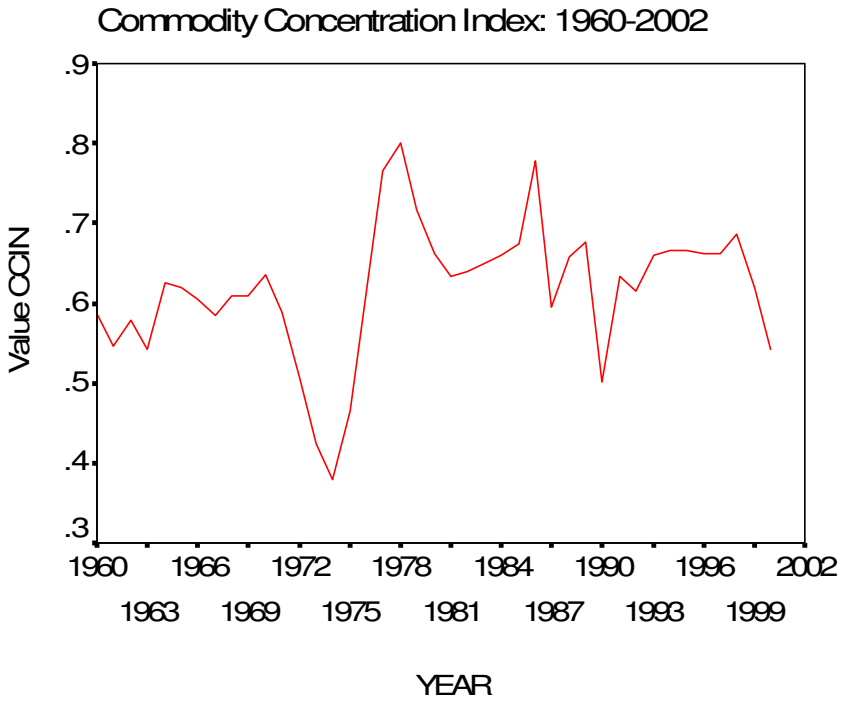

Figure 1 Evolution of the Gini Hirschman Concentration index (in percentage)

The above figure depicts that the relative diversification of exports measured by the commodity concentration index which is on the average above 5.6 suggesting a high degree of concentration on small export items or undiversified export portfolio for a long period. The concentration index in 1973 and in 1974 was 0.42 and 0.38 respectively. This small value of concentration index did not show diversification rather it showed share of coffee has been lowered. In the next chapter attempt is made to examine the role of diversification in reducing export earnings instability

and also look in to whether this problem is transmitted in to the domestic economy and affect economic growth rate using econometric techniques.

CHAPTER FOUR

ECONOMETRIC ANALYSIS

This section discussed the model specification based on the conceptual framework of the study. It also described the procedures for evaluating and validating the model using economic, statistical and econometric criteria. The model relates instability in a country's total export receipts to fluctuations in individual exports, which in turn are explained in terms of the structural variables that appear in the regression analysis. This chapter also report and discusses the results obtained from the analysis.

4.1 DATA COLLECTION - TYPES AND SOURCES.

Annual time series data were collected on the following variables for the period 1960 to 2001:

I. Output of the selected major agricultural export commodities
II. Volumes and values of exports by country of destination
III. World prices of the export commodities
IV. Gross Domestic Output

The data series for the study were collected mainly from the following sources:

I. National Bank of Ethiopia: various issues of financial review and annual bulletin

II. Ministry of finance and Economic Development: Survey of Ethiopian Economy

III. United Nations: year book of International Statistics, UNCTAD Hand Book of International Trade and Development Statistics, International Financial Statistics, IFS CD-Rom.

IV. Ethiopian Custom Authority: Annual export reports.

4.2 DEFINITIONS AND MEASUREMENT OF VARIABLES IN THE MODEL

4.2.1 EXPLANATION OF VARIABLES

The model for the study is founded on a simple macro economic theory of demand and supply. Hence the researcher assumed a perfect competitive international market where every primary commodity producer country like Ethiopia is a price-taker. The small country assumption by which export supply is assumed to equal actual volume of export is therefore implied.

The export performance of the majority of LDCs has been relatively weak compared with the export performance of rich countries (Todaro, 2002). It is more something to do with the concept of elasticity of demand. The income elasticity of demand for primary products is relatively lower than other commodity groups. Said it differently, the percentage increase in quantity of primary products demanded by importers will rise by less than

the percentage increase in their GNP as the country exports more of primary commodities. Consequently, when income rises in the importing countries, their demand for food, food products, coffee, and raw materials goes up slowly. The net result of these low-income elastisities of demand is the tendency for the relative price of primary products to decline over time. Moreover, since the price elasticity of demand for primary commodities also tends quite low (i.e. inelastic), any shifts in demand or supply curves can cause large and volatile price fluctuations. These two elasticity phenomena contribute to export earnings instability, which could lead to lower and less predictable rates of economic growth.

The effect on a country's export receipts of a given degree of supply instability depends on the elasticity of foreign demand. The greater the departure of this elasticity from unity, the more pronounced is the effect on export receipts of a shift in supply. The elasticity of demand facing an individual country is influenced by the elasticity of the total demand curve for the product and the country's share of the world market.

Supply fluctuations can be expected to generate greater fluctuations in export receipts from the product if the smaller the country's share of the world market for the product (Massel 1970). The countries share of the world market measures the country’s importance as a supplier in the

world market and the ability to influence the market prices. This can be denoted as Z^*.

The greater the values of Z, the higher will be the country's power to compensate quantity reductions by price increase and consequently to reduce the export instability. It follows that for a given shift in supply, the resulting changes in price should be smaller while the changes in quantity and earnings should be greater the smaller is the country's share of the world market.

Shifts in domestic demand results in shifts in export supply curve. In general it would be expected that more frequent domestic demand shifts for commodities with relatively high-income elasticity's (i.e. non-food commodities as opposed to food stuffs). Domestic demand will affect export price only to the extent that export demand is relatively inelastic. Since price and quantity movements are reinforcing, earnings fluctuations should not in general be sensitive to supply price elasticity when demand shifts. To obtain an index of the domestic consumption of exportable, proportion of export receipts consisting of items over half of which were consumed at home was used by Massel. However, Massel's measurement

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* $Z_i = \Sigma \lambda_{it} \delta_{it}$

Where λ_{it} is the country's share of commodity i in the world trade in the t^{th} period and δ_{it} share of commodity i in the country's export. Hence $\lambda_{it}\delta_{it}$ measures the country's share of commodity i weighted by the relative importance of commodity i in the countries export.

of domestic consumption of exportable was not accepted by several researchers like Charette, 1982. They argued that it is not clear how accurate a measure of domestic consumption ratio calculated by Massell. As many researchers omit Massell's domestic consumption variable arguing that it is too inaccurate at the aggregate level, and as we have seen before the fluctuation of the country's export volume is very small, we omit this variable in our model.

The instability of total export receipts depends not only on the instability of individual items but also on the correlation between receipts from different pairs of goods. Receipts from goods that are affected by similar market forces will tend to move together. Receipts from items that are dissimilar may fluctuate independently.

A country's total export receipts will tend to be more stable the more diversified are its exports, that is, the larger the number of goods it exports, the more evenly its resources are spread over the different goods, and the more dissimilar these products are. A country with a large share of exports derived from a single good or from several closely related goods will tend to experience greater instability than a country with a widely diversified export base (Michael, 1985).Then as index of commodity concentration or diversification, this study will use

Hirschman-Gini coefficient (Albert Hirchman, 1945) to measure degree of concentration. Albert Hirchman defined the commodity concentration index, denoted as, $CCIN^*$. The higher the value of the $CCIN_t$, the greater concentration (the lower the diversification) will be.

Instability of exports may also be an increasing function of the geographic concentration of exports by country of destination. Most LDCs has been exported their commodities to a few rich countries mostly destined to Europe and the United States. As a result, the demand for their exports is influenced by what happened in the economic structure of those particular countries. High geographic concentration is likely to imply greater dependence on economic conditions in one of a few countries. If sales are geographically concentrated, fluctuations in demand conditions with in a given importing country will have a relatively greater impact than its sales are more diversified. The measurement of geographic concentration is similar to that of commodity concentration/diversification. Letting $GCIN^*$ the index of geographic concentration, Hirchman defined the Geographic concentration index.

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* $CCIN_t = (\Sigma y_i^2)^{1/2}$

Where y_i is the proportion of total merchandise exports by major commodities in which the country exported.

* $GCIN_t = (\Sigma z_i^2)^{1/2}$

Where z_i is the proportion of total exports of the country

4.2.2 EXPLANATION OF INSTABILITY

Given the rigidity of both linear and exponential trends and the sensitivity to initial and terminal values, a more flexible best fit for the forty years data, a five-years centered moving average form is preferred here. Therefore, instability refers deviations from their respective moving average trends. Hence, the trend corrected standard deviation of export earnings from its moving average estimation, denoted $\overline{X}$ will approximate the instability index EXINST.

The instability indeed used in this paper is similar to that used by Dawe (1996) which is the square of the deviations of annual export earnings from stable or moving average estimation of export earnings with little amendment and become the standard deviation from the trend adjusted for the number of observation under study.

It can be given as:

$$EXINST_i = \sqrt{\frac{\left(Xj - \overline{X_t}\right)^2}{T-1}} = \sqrt{\frac{\left(X_j - \frac{1}{5}\sum_{i=j-2}^{j+2} X_i\right)^2}{T-1}}$$

Where, $EXINST_t$ is export earnings instability index in the year t.

X_j is the real actual export earnings in the year t.

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

The researcher used the value of export earnings of years 1958 and 1959 in order to avoid the loss of starting two years data 1960 and 1961 as a five-year centered moving average end up its estimation with a loss of two years from the beginning and two from last ending years.

4.3 SPECIFICATION OF MODEL

Following the above conceptual discussion and in the spirit of Massel (1970), we analyze export instability with in the frame work of a simple market model. Based on the discussion above, factors that are expected to affect export earnings instability are: (a) the composition of export; (b) the diversification of exports by commodity and country of destination; (c) a country's share of the world market for export; (d) the domestically consumed proportion of out put of exported commodities. Indexes of explanatory variables shall be devised for the regression equation and more explanations of the variables are given in the preceding section. Therefore, our export instability function is specified as:

$$EXINSTt = \beta_0 + \beta_1 CCIN_t + \beta_2 GCIN_t + \beta_3 PPF_t + \beta_4 Z_t + \beta_5 EXVIN_t + \beta_6 DD_t + \varepsilon_t$$

Where: $EXINST_t$ is the export earning instability index

$CCIN_t$ is commodity concentration index

$GCIN_t$ is geographic concentration index

PPF^1_t is proportion of food of exports

[1] PPF proportion of food includes fruits and vegetables, live stocks (meat and meat products), cereals and sugar.

Z_t is the export market share coefficients

DD_t is dummy for policy intervention

$EXVINX_t$ is value index of merchandise exports, in Ethiopian Birr.

ϵ_t = the disturbance term

4.4 CHOICE OF ESTIMATION TECHNIQUE AND PROCEDURE FOR EVALUATION OF THE MODEL.

4.4.1 TESTING FOR UNIT ROOTS

Most time series data do not have time invariant mean and variance. This series is known as non-stationary. Regression on this kind of data is not best, unbiased and efficient. One has to, therefore, test the order of integration of each variable, to establish whether it is non-stationary and how many times the variable needs to be differenced to result in a stationary series before running the regression. There are several ways of testing for the presence of a unit root. The Dickey-Fuller (DF) approach to testing the null hypothesis that a series does contain a unit root (i.e. it is non-stationary) against the alternative of stationary is discussed as the study used DF and ADF (Augmented DF test) statistics.

Thus, the ADF test is comparable to the simple DF- test but it involves adding an unknown number of lagged first differences of the dependent

variable to capture the autocorrelated omitted variable that would enter the error term u_t.

If a simple AR (1) DF model is used when in fact y_t follows an AR(p) process, then the error term will be autocorrelated to compensate for the misspecification of the dynamic structure of y_t. Autocorrelated errors will invalidate the use of the DF distributions, which are based on the assumption that U_t is 'white-noise'. Thus, Augmented Dickey-Fuller test assumes that:

$$Y_t = \sum_{i=1}^{p} \phi_i Y_{t-i} + U_t$$

$$\Delta Y_t = \sum_{i=1}^{p-1} \phi^*_i \Delta Y_{t-i} + \phi^*_i Y_{t-1} + U_t \quad , \qquad U_t \sim IID\ (0,\sigma^2)$$

$$\phi^* = (\phi_1 + \phi_2 + \phi_3 + ,\ldots, \phi_p) - 1$$

If $\phi^* = 0$, against the alternative $\phi^* < 0$, then Y_t contains a unit root.

This model can be extended to allow for the possibility that the d.g.p contains deterministic components (constant and trend).

4.4.2 COINTEGRATION ANALYSIS

The concept of cointegration applied to a wide variety of economic models. Any equilibrium relationship among a set of non-stationary variables implies that stochastic trends must be linked. The equilibrium relationship means that the variables can not move independently of each other. This linkage among the stochastic trends necessitates that the

variables be cointegrated. Since the trends of cointegrated variables are linked, the dynamic paths of such variables must bear some relation to the current deviation from the equilibrium relationship. There are two kinds of procedures, the Engle Granger procedure and the Johansen procedure, for testing and identifying the possible number of cointegrating (long-run) relationships among the vectors.

4.4.2.1 ENGLE_GRANGER PROCEDURE

Engle and Granger (1987) provide the following definition of cointegration. The components of the vector $x_t = (x_{1t}, x_{2t, \ldots}, x_{nt})$ are said to be cointegrated of order d,b denoted by $x_t \sim CI(d,b)$ if:

1. All components of x_t are integrated of order d.
2. There exists a vector $\beta = (\beta_1, \beta_2, \ldots, \beta_n)$ such that linear combination $\beta x_t = \beta x_{1t} + \beta x_{2t} + \ldots + \beta_n x_{nt}$ is integrated of order (d-b), Where b>0. The vector β is called the cointegrating vector.

The Engle-Granger testing procedure for cointegration supposed that (two variables y_t and x_t are) the variables be integrated of the same order. Thus, the first step in the analysis is to pretest each variable to determine its order of integration.

According to this procedure if all variables are stationary, it is not necessary to proceed since standard time-series methods apply to stationary variables and if the variables are integrated of different orders,

it is possible to conclude they are not cointegrated for the set of I(1) and I(0) variables.

In order to determine if the variables are actually cointegrated, denote the residual sequence $\hat{e}_t$. Thus, $\hat{e}_t$ is the series of the estimated residuals of the long-run relationship. If these deviations from long-run equilibrium are found to be stationary then there exists a long-run relationship among the variables.

It would be convenient if we could perform a Dicky-Fuller test on these residuals to determine the order of integration. Consider the auto regression of the residuals;

$$\Delta\hat{e}_t = \alpha\hat{e}_{t-1} + \epsilon_t$$

Since the $\hat{e}_t$ sequence is a residual from a regression equation, there is no need to include the intercept term.

If we can not reject the null hypothesis $\alpha_1 = 0$, we can Conclude that the residual series contains a unit root. Hence, we conclude that the variables are not cointegrated.

Although the Engle and Granger (1987) procedure is easily implemented, it does have several important limitations. The estimation of the long-run equilibrium regression requires that the researcher place one variable on

the left-hand side and use the others as regressors. In practice, it is possible to find that one regression indicates the variables are cointegrated where as reversing the order indicates no cointegration. This is a very undesirable feature of the procedure since the test for cointegration should be invariant to the choice of the variable selected for normalization. Moreover in tests using three or more variables, there may be more than one cointegrating vectors. The method has no systematic procedure for the separate estimation of the multiple cointegrating vectors.

Another limitation of the Engle-Granger procedure is that it relies on a two-step estimator. The first step is to generate the error series and the second step uses these generated errors for estimation. There by carrying over error obtained from a regression using the residuals from another regression. Hence, any error introduced by the researcher in the first step is carried in to second step.

4.4.2.2 THE JOHANSEN PROCEDURE AND FORMULATION OF THE DYNAMIC MODEL

The implication that non-stationary variable can lead to spurious regressions unless one cointegration vector is present means that some form of testing for cointegration is mandatory. Earlier use of the Engle Granger (EG) procedure is giving way to the determination of

cointegration rank given the consequences for the EG approach if more than one cointegration relationship exists.

The Johansen (1988) maximum likelihood estimators circumvent the use of two step estimators and can estimate the test for the presence of multiple cointegrating vectors. Moreover, the tests allow the researcher to test restricted versions of the cointegrating vector(s) and the speed of adjustment parameters.

One can include the drift term if the variable exhibited a decided tendency to increase or decrease. In this case, the rank of Π can be viewed as the number of cointegrating relationships existing in the 'detrended' data.

Defining a vector of potentially endogenous variables, it is possible to specify the following d.g.p. and model z_t as an unrestricted vector autoregression (VAR) involving up to k-lags of z_t;

$$Zt = \sum_{i=1}^{k} A_i Z_t - i + U_t \qquad U_t \sim IN\ (0, \Sigma) \text{ ---------- (1)}$$

Where z_t is (nx1) and each of the A_i is an (nxn) matrix of parameters. The system is in reduced form with each variable in z_t regressed on only lagged values of both itself and all the other variables in the system (Enders, 1996). The vector error correction form of the model (VECM) is;

$$\Delta Zt = \sum_{i=1}^{k-1} \Gamma_i \Delta Z_{t-i} + \Pi Z_{t-k} + U_t \qquad U_t \sim IN\ (0, \Sigma) \text{ ---------- (2)}$$

Where $\Gamma_i = -(I - \sum_{i=1}^{k-1} A_i)$

$$\Pi = -(I - \sum_{i=1}^{k} A_i)$$

This way of specifying the system contains information on both the short and long-run adjustment to changes in z_t, via the elements of Γ_i and Π respectively. Here, $\Pi = \alpha\beta'$ where α represents the speed of adjustment to disequilibrium, while β is a matrix of long-run coefficients such that the term $\beta' z_{t-k}$ embedded in the ECM represents up to (n-1) cointegration relationships in multivariate model which ensures that the z_t converges to their long run steady-state solution.

The VECM to be estimated in equation (2) contains no deterministic components (such as an intercept and trend). It is possible to include other variables that are both weakly exogenous and insignificant in the long run cointegration space such that we can condition on the set of such I(0) variables, Dt. The latter will only affect the short-run model, and it is possible to rewrite (2) as:

$$\Delta Z_t = \sum_{i=1}^{k-1} Z_{t-i} + \Pi Z_{t-k} + \Phi D_t + u_t \quad \text{---------- (3)}$$

The variables in D_t are often included to take account of short-run 'shocks' to the system, such as policy interventions which had an important effect

on macroeconomic conditions; such variables often enter as dummy variables.

Again the key feature is rank of the matrix Π is that the rank of Π is equal to the number of independent cointegrating vectors. The number of distinct cointegrating vectors can be obtained by checking the significance of the characteristic roots of Π. The rank of the matrix is equal to the number of its characteristic roots that differ from zero. The Johansen procedure obtains estimates of α and β using the procedure known as reduced rank regression (Harris R., 1995).

4.4.3 TESTING FOR REDUCED RANK

For the residual to be a white noise the matrix Πz_{t-k} must contains the stationary long-run error correction relation as it was stated the model contains z_t, a vector of non-stationary I(1) variables. This occurs when $\Pi=\alpha\beta'$ has reduced rank i.e. there are $r \leq n-1$ cointegration vectors present in β so that testing for cointegration amounts to finding the number of r linearly independent columns in Π (Harris R., 1995).

Thus to test the null hypothesis that there are at most r cointegration vectors amounts to;

H_o: $\lambda_i = 0$ $\quad\quad$ $i= r+1, \ldots, n$

Where only the first r eigen values are non-zero.

In practice, we can obtain only estimate of Π and its characteristics roots. The test for the number of cointegrating vectors or the number of characteristic roots that are insignificantly different from unity can be conducted using the following two test statistics.

$$\lambda_{trace} = -T \sum_{i=r=1}^{n} \log(1 - \hat{\lambda}_i),\ r = 0,1,2,...,\ n-2, n-1$$

Another test of the significance of the largest λ_r is the maximal eigen value or λ_{max} statistic.

$$\lambda_{\max} = -T \log(1 - \hat{\lambda}_i),\ r = 0,1,2,...,\ n-2, n-1$$

This tests that there are r-cointegration vectors against the alternative that r+1 exist.

4.4.4 TESTING FOR WEAK EXOGENEITY

In the VECM, it has been shown that the Π matrix contains information on the long-run relationships. Where Π =αβ’ and α represents the speed of adjustment to its equilibrium and β is the matrix of long-run coefficients.

Turning to the role of non-zero columns of α which contain information on which cointegration vector enters which short run response to disequilibrium. The presence of all zeros in row i of α_{ij} indicates that the cointegration vectors in β do not enter the equation determining $\Delta z_{it.}$ Thus, this variable is weakly exogenous to the system and can enter on the right-hand side of the VECM (Harris R., 1995).

There are two potential advantages from estimating the multivariate model having conditioned on the weakly exogenous variables. First conditioning on these variables will usually ensure that the rest of the system has better stochastic properties. The second advantage is linked to the short-run model as the number of short-run variables in the VECM will be reduced. There fore, it is important to test for weak exogeneity rather than to assume it.

The study also utilizes cointegration and vector error correction model (VECM) to explore the causal relationship between export earnings instability and income instability which is proxied by GDP instability.

Attempt is made to examine the causal relationship between export earning instability and income instability i.e. to investigate whether instability in export earnings will transmit in to the domestic economy and result in instability in income of government and producers.

As it has been discussed before, the cointegration procedure requires time series in the system to bases non-stationary in their levels. Similarly, all time series in the cointegrating equation have the same order of integration. Consequently, the study first shows the time series properties

of income instability (GDPINST) and export earning instability (EXINST) calculated in similar way with the previous discussion.

To determine the long-run relationship between income instability and export earning instability, the Johansen cointegration procedure is utilized. The procedure involves, as it has been discussed in section 4.4.3, the estimation of a VECM used in the study is as follows:

$$\Delta Y_t = \theta_0 + \sum \theta_i \Delta Y_{t-i} + \alpha\beta' Y_{t-k} + \varepsilon_t \text{ ---------- (4)}$$

Where Δ is the difference operator, Y_t is a vector of ($GDPINST_t$, $EXINST_t$) θ_0 represents the intercept, and ϵ_t represents the vector of white noise process. More explicitly the model can be re-formulated as:

$$\Delta GDPINST_t = \alpha Z_{t-1} + \sum_{i=1}^{r} \beta_i \Delta GDPINST_t + \sum_{i=1}^{s} \phi_i EXINST_i + \mu_t \text{ ---------- (4.a)}$$

$$\Delta EXINST_t = \varphi Z_{t-1} + \sum_{t=1}^{p} \theta_i \Delta EXINST_t + \sum_{t=1}^{q} \lambda_i GDPINST_i + \varepsilon_t \text{ ---------- (4.b)}$$

The existence of cointegration between the two variables suggests the presence of causality between income instability and export earnings instability in at least one direction.

The causal relationship between income instability and export earnings instability is examined with the help of Granger-Causality procedure based on VECM in the case where the two series were cointegrated (Engle and Granger, 1987). This procedure is particularly attractive over the standard

VAR because it permits temporary causality to emerge from the sum of the lagged coefficients of the explanatory differenced variables or/and the coefficient of the error-correction term. In addition, the VECM allows causality to emerge even the coefficients of the lagged differences of the explanatory variables are not jointly significant. Emphasis must be given that the standard Granger-Causality test omits the additions channel of influence (Z_{t-1}).

The null hypothesis that export earning instability doesn't cause income instability is rejected on the condition that either the sum of Φ_i's or α is statistically significant similarly, in the next equation (4.b), the null hypothesis income instability doesn't Granger-Cause export earning instability is rejected provided either the sum λ_i or φ_i statistically significant.

4.5 EMPIRICAL ANALYSIS

The results of the Augmented Dickey-Fuler (ADF) unit root tests are presented in table (1). The null hypothesis of non-stationarity of the variable is tested against the alternative hypothesis of stationarity.

Table4.1. ADF unit root test for stationarity on variables in levels

Variables	ADF test without deterministic component and lags of:		
	0	1	2
EXINST	-1.4998	-1.1445(0.4228)	-0.72755(0.301)
CCIN	-0.51591	-0.50835(0.9841)	-0.49353(0.9606)
GCIN	-0.60156	-0.30956(0.0061)	-0.51591(0.4651)
Z	-1.2135	-0.93948(0.2301)	-0.86071(0.7617)

EXVIND		0.90758	0.43934(0.2135)	0.53882(0.7292)
PPF		-0.60216	0.61639(0.5776)	-0.60790(0.6650)
Critical Value	1%	-2.628		
	5%	1.95		

Table 4.2. ADF unit root test for stationarity on differenced variables

Variables		ADF test without deterministic component and lags of:		
		0	1	2
DEXINST		-4.1653*	-6.8763**(0.0001)	-5.6232**(0.0436)
DCCIN		-3.2044**	-4.1348**(0.0184)	-3.8734**(0.3670)
DGCIN		-5.0324**	-4.5100**(0.3364)	-3.0081**(0.3655)
DZ		-4.0683**	-5.0065**(0.0184)	-3.1065**(0.3495)
DEXVIND		-2.7572**	-3.0712**(0.2046)	-1.6248(0.0338)
DPPF		-3.8357**	-4.7823**(0.0199)	-3.7811**(0.7815)
Critical Value	1%	-2.632		
	5%	-1.951		

Table 4.1 and Table 4.2 present the result of running ADF test on the variables without constant and trend. The results indicate that the null hypothesis of non-stationarity can not be rejected for all of variables in level form. While the ADF test applied to these variables in first differences under the assumption of not a constant and a deterministic time trend, all of the variables become stationary at one percent level of significance and they are called I(1) variables.

Having shown that the variables are integrated of order one, I(1), it is necessary to determine whether there exists at least one linear combination of these variables that is I(0). In other words, does there exist a stable and non-spurious (cointegrated) relationship among the regressors in each of the relevant specifications? This was done by using the cointegration method. This procedure is appropriate in the presence of

more than two variables. Before we estimate the model, the correlation coefficient among the variable is examined since there is suspection of multicollinearity.

Table 4.3. Tests of the cointegration rank for the Export earnings instability model using Ethiopia export data 1960:1-2002:1

Ho: rank=p	λ	-Tlog(1-\mu) (λ_{max})	95% λ_{max} (0.95)	-T\Sum log(.) (λ_{trace})	95% λ_{trace} (0.95)
P == 0		46.74**	39.4	101*	94.2
P <= 1	0.717282	26.57	33.5	54.29	68.5
P <= 2	0.512338	13.01	27.1	27.72	47.2
P <= 3	0.296438	9.817	21.0	14.71	29.7
P <= 4	0.233044	4.013	14.1	4.893	15.4
P <= 5	0.102783	0.8803	3.8	0.8803	3.8

Table 4.3 reports the Johansen maximum L.R. tests for cointegration for all variables in the export instability equations. The first column of table 4.3 gives the eigen values in descending order, while table 4.3 of column five reports the corresponding trace statistics generated from the maximum L.R. test statistics. The first column report gives the null hypothesis, p-r, ranging from no cointegrating vectors. Finally, the third and the last column reports the critical values at the five percent level of maximum eigen values and trace statistics respectively.

It can be ascertained from the L.R. statistics that, in the presence of a deterministic trend, there exist a linear relationship that is cointegrated; that is, there exists a linear combination of the I(1) variables that links them in a stable and long-run relationship. In fact, the data reported in the table shows that the null hypothesis no cointegrated vector can be

rejected at one percent level, thereby suggesting the presence of one cointegrating equation from which residuals can be obtained to measure the respective deviations between current level of instability and the level based on the long-run relationship.

Table 4.4.a. Output from PcFiml Standardized \beta' eigenvectors for the model

EXINST	CCIN	GCIN	PPF	Z	EXVIND
1.0000	-1.3827	-1.1518	11.557	1.7600	-1.2879
-0.049521	1.0000	3.9742	0.79752	-0.094921	-0.14085
0.066136	-0.99177	1.0000	0.60356	0.15138	-0.095299
-0.074809	-0.083973	-0.69318	1.0000	0.16341	0.021005
-0.093234	4.1959	3.9002	-7.9924	1.0000	-0.32741
-0.089639	-0.55410	0.60669	-0.72453	-0.34804	1.0000

Table 4.4.b. Standardized \alpha coefficients

EXINST	-0.62205	-0.36032	-0.089385	-0.58873	0.10551	-0.12504
CCIN	-0.0062726	-0.16022	0.41241	-0.037349	-0.0022232	-0.0038931
GCIN	0.021471	-0.12695	-0.094834	0.052610	-0.0052671	-0.0045566
PPF	-0.00062237	-0.10447	0.18942	-0.15476	0.0016891	0.0017610
Z	-0.38179	0.28008	-0.44807	-0.30749	-0.075088	0.0073674
EXVIND	0.062883	0.14164	0.058452	-0.64942	-0.033404	-0.04549

Vector portmanteau 5 lags= 152.01
Vector AR 1-2 F(72, 43) = 1.4158 [0.1101]
Vector normality Chi^2(12) = 30.684 [0.0022] **

The cointegrating equation (normalized on export earning instability) is reported in table 4.4.a. All of the long-run estimates have there anticipated signs except EXVIND (they are reversed because of the normalization process), and the t- ratios are significant for all variables at one percent except geographic concentration which is found to be insignificant.

As shown above there exists a single cointegration vector implying EXINST can be written as a function of other explanatory variables. However, the explanatory variables are required to be weakly exogenous in order to make sure the estimated parameters are efficient. The result of test of weakly exogenous is summarized bellow in table 4.5 as:

Table 4.5. Testing of feedback effect (α- coefficients) restrictions on cointegration vectors in the model.

	EXINST	CCIN	GCIN	PPF	Z	EXVIND
α- coefficients	-0.62205	-0.36032	-0.089385	-0.58873	0.10551	-0.12504
LR-test:$x^2(\approx 1)$	9.3167	0.026472	0.99864	0.0017	10.944	0.67235
P-Value	0.0023 **	0.8708	0.3176	0.9788	0.0009 **	0.4122

Weak exogeneity of the regression is required for the analysis as a single equation to be efficient (Hendry and David, 1988). This is done by imposing zero restriction on the long-run parameters in the reduced single equation. Weak exogeneity was rejected for one of the explanatory variables specified for EXINT, i.e. Z, using the Likelihood Ratio test for zero restrictions on the adjustment coefficients. In this case, attempt is made to estimate EXINST and market share coefficient (Z) simultaneously using 2SLS method. The result of the estimates for the variable of interest is presented below in table 4.6 as:

Table4.6. Estimated result of DEXINST by 2SLS

Variable	Coefficient	Std.Error	t-value	t-prob
Dz	1.023	4.589	0.085	0.933
Dz_1	0.10464	1.232	0.211	0.8349

The results from the 2SLS estimation of the general unrestricted error correction specification, in which EXINST and Z were made endogenous

with the variable of interest EXINST is presented in table 4.6. The result of the 2SLS shows that the coefficients are not significantly different from zero, thereby implying invalid simultaneous equation model. Moreover, there is also a need for parameter constancy test which is employed to examine whether estimated coefficients from 2SLS are non-constant, which is confirmed by recursive estimation of the model. Fig. 4.1 shows plots of the Chow tests for from 2SLS recursive estimate of the coefficient of DZ_t. The coefficient estimate is not constant and more unstable which is evidenced from the plots crossing of the band at 5 percent of significance.

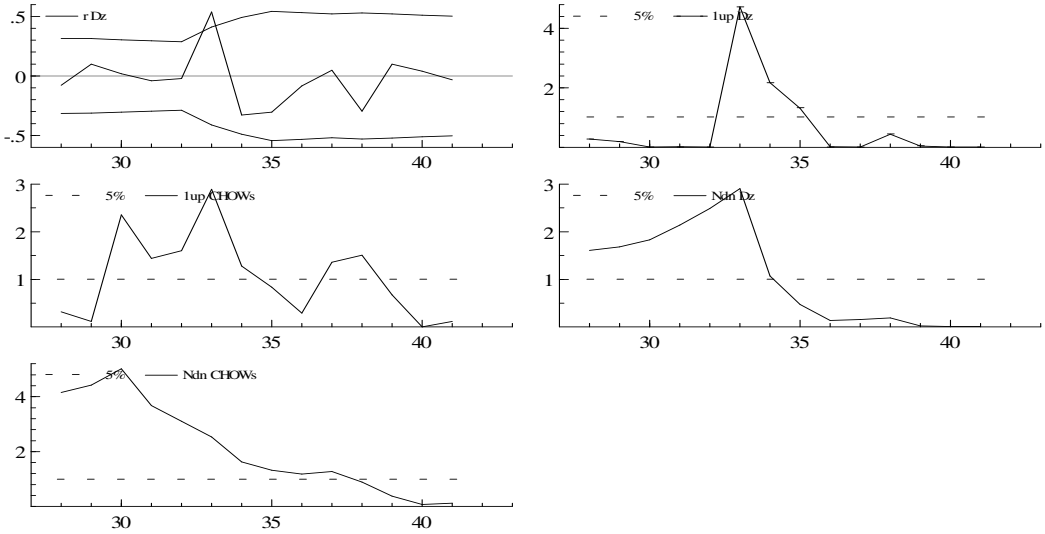

Fig.4.1. Parameter Stability test for DZ_t (Market Share Coefficient) from 2SLS Estimation

The evaluation just performed is critical for testing exogeneity (Granger and Mizon, 1994)[2]. Hendry (1988) suggested that if a parameter is found to be unstable, it implies weak exogeneity and therefore we don't need to

[2] As cited in Hendry (1988)

estimate the model simultaneously but return to a single equation estimation method. Non-constancy of the short-run model forms the basis for the validity of weak exogeneity Bardsen (1994)[3]. Therefore, the simultaneous equation framework is left and single equation estimation is adopted since no meaningful market share coefficient of, Z, could be developed in the alternative simultaneous equation specification. 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 4.7 as:

Table.4.7. Testing of long run effect (β - coefficients) restrictions on cointegration vectors in the model.

	EXINST	CCIN	GCIN	PPF	Z	EXVIND
B- coefficient	1.0000	-1.3827	-1.1518	11.557	1.7600	-1.2879
LR-test:x2(≈1)	19.967	2.8929	0.40636	19.868	19.868	18.968
P-Value	0.0000 **	0.0890*	0.5238	0.0000 **	0.0000 **	0.0000 **

The long-run results show that all explanatory variables are found to be significant except geographic concentration index at one percent and commodity concentration index at five percent. Moreover, all variables are with the hypothesized sign except export value index.

4.5.1 THE DYNAMIC PARSIMONIOUS MODEL (PVECM)

The information provided by L.R. test can now be used to generate a set of error correction models that captures short and long-run behavior of

[3] As cited in Hendry (1988)

the relationship. The changes in the relevant variables represent short-run change, while the coefficient on the error correction term represents the speed of adjustment back to the long-run relationship among the variables.

Table 4.8 presents results for the parsimonious error correction model. The estimates suggest that the immediate impact of changes in commodity concentration is positive and statistically significant when lagged one period and contemporaneous changes in all other explanatory variables has significant impact on earnings instability at one percent. The relative fit and efficiency of the error correction regression is good and, as the theory predicts, the error correction term are negative and statistically significant, suggesting that a deviation from the long–run value this period is corrected by about 86 percent in the next year.

Table 4.8 Dynamic (Parsimonious) Model

Variable	Coefficient	Std.Error	t-value	t-prob
Constant	7.4012	1.2753	5.804	0.0000
DCCIN_1	2.8582	0.99726	2.866	0.0078
DGCIN	2.2766	1.7494	1.301	0.2037
DZ	-1.0370	0.30500	-3.400	0.0020
DPPF_2	-3.3845	1.5492	-2.185	0.0374
DEXVIND	1.3194	0.42379	3.113	0.0042
EC_1	-0.86512	0.14913	-5.801	0.0000

R^2 = 0.606981 F(6,28) = 7.2072 [0.0001] \sigma = 0.357987 DW = 1.76
RSS = 3.588321437 for 7 variables and 35 observations
AR 1- 2 F(2, 26) = 3.1944 [0.0575]
ARCH 1 F(1, 26) = 0.53507 [0.4710] Xi^2 F(12, 15) = 1.0133 [0.4824]
RESET F(1, 27) = 0.5161 [0.4787] Normality Chi^2(2) = 0.094461 [0.9539]

4.5.2 EMPIRICAL RESULTS OF TESTS OF CAUSALITY BETWEEN EXPORT EARNINGS INSTABILITY AND INCOME INSTABILITY

The results of the augmented Dickey-Fuler (ADF) unit root tests are presented in tables 4.9.a and 4.9.b. The null hypothesis of non-stationarity of income and export earnings instability is tested against the alternative hypothesis of stationarity.

Table 4.9.a. ADF test for unit root of Export earnings and income instability in levels.

Variables		ADF test without deterministic component and lags of:		
		0	1	2
EXINST		-1.7628	-1.0861(0.0988)	-0.1171(0.0053)
GDPINST		0.25911	0.57605(0.0000)	-1.6436(0.6512)
Critical Value	1%	2.626		
	5%	-1.95		

Table 4.9.b.ADF test for unit root of export earnings and income instability in difference

Variables		ADF test without deterministic component and lags of:		
		0	1	2
DEXINST		-8.2318**	-8.0132**	-5.3774** (0.4029)
DGDPINST		-11.473**	-4.5235**(0.5002)	-2.8179**(0.5818)
Critical Value	1%	2.628		
	5%	-1.95		

The result indicates that both time series are not stationary in their levels. After first differencing, however, the null hypothesis of no unit root is rejected. The results indicate one order of integration I (1) for income instability and export earning instability. The next step involves the application of Johansen procedure to examine whether income and export earnings instability are cointegrated. The results of the tests are presented in table 4.10.

Table 4.10.Johansen cointegration test results for export instability and income (GDP) instability

Ho: rank=p	λ	-Tlog(1-\mu) (λ_{max})	using T-nm	95% λ_{max} (0.95)	-T\Sum log(.) (λ_{trace})	95% λ_{max} (0.95)
P == 0		16.11*	8.376	14.1	16.33*	15.4
P <= 1	0.474987	0.2223	0.1156	3.8	0.2223	3.8

The null hypothesis of no cointegration between income and export earnings instability (i.e. r=0) is rejected at the 5 % significant level However, the null hypothesis that $r \leq 1$ could not be rejected. One can infer from the fact that income and export earning instability are cointegrated and hence there exists a long-run equilibrium relationship and the existence of causality in at least one direction.

Given the results of the cointegration test, we next estimate the VECM of equation (3) and (4) to determine the direction of causality between income instability and export earnings instability where the two series are cointegrated. The results of the bi-variate causality tests from the VECM are presented in table 4.11 below.

Table.4.11. Parameter restriction test for the causality based on VECM
Panel A: GDP instability equation

	z_{t-1}	EXINST	GDPINST
F statistics	0.59187	4.1038	0.59187
P-Value	[0.4529]	[0.0092] **	[0.4529]

Panel B: Export instability equation

	z_{t-1}	EXINST	GDPINST
F statistics	0.6614	0.54783	0.9212

P-Value	[0.4280]	[0.7863]	[0.5159]

The results reveal that export earnings instability causes income instability.

4.6 ESTIMATION RESULTS

As it has been discussed previously, the model was estimated using the Johansen Procedure and the residuals were inspected and the diagnostic tests are found to be acceptable. The results are reported in the previous section. The reported test summary shows that there is no autocorrelation problem. Even if there exists normality problem that may be arise due to the estimation technique as it utilizes difference and lags for estimation, the Johansen technique for estimation is still robust. Except GCIN all the explanatory variables are found to be significant at one percent and CCIN at 10 percent in the long-run estimated equation. In the dynamic model all explanatory variables are found to be significant except GCIN with the expected sign. Introducing dummy variable for policy changes and domestic consumption of coffee as a proxy for domestic demand pressure of exportable, they created a misspecification in the model and found to be insignificant. Therefore, I omitted these variables in the final estimation of the model.

The coefficient of CCIN is significantly positive at 10 percent in the long-run and at one percent in the short-run, supporting the hypothesized

relationship between instability and commodity concentration. The finding is also consistent with the view that shifts in foreign demand have been a major of export instability.

On the basis of the t-ratios the high negative significance of proportion of food (PPF) both in the short-run and long-run equation suggests that if the country derives a large percentage of its export earnings from food it will tend to experience less export instability than if the country is heavily dependent on other volatile commodities. It is evident that part of the instability in earnings is the result of fluctuations in the general level of demand there by affecting mostly goods with short-run income instability. Therefore, as foods export tend to be relatively income inelastic, they will experience less sharp fluctuations.

The coefficient of market share coefficient (Z) is significantly negative at one percent. It is originally argued that the negative significance of Z supports the hypothesis that countries with small export sectors tend to be confronted with more elastic foreign demand curves for their products and hence the more susceptible to supply induced fluctuations. However, on a priory grounds, one would expect export value index (EXVIND) to be a measure of size of export sector, Z is relatively more important and measures the size of export sector relative to total world export. The result showed that there exists positive relationship between EXVIND and

instability. This is may be due to the world market for primary commodities are already saturated as many LDCs also export similar export items. Hence, the increase in size of exportable of the country may be accompanied by the increase in other LDCs exportable as a result there will be excess supply and leading to weak prices of primary commodities.

The diagnostic tests for both long-run and short-run equation do not suggest misspecification of the reduced equation at 5% level of significance. More importantly, the estimated coefficients are statistically valid since the residuals are suggested to have all the required basic properties. No evidence of autocorrelation is found in the residual up to the 2^{nd} lag. The normality of the errors as well is not rejected by the Jarque Bera test for the dynamic model. Similarly, the white test for hetroscedasticity doesn't reject the null-hypothesis that the error term is homoscedastic. Moreover, the possibility to the general functional form misspecification is strongly rejected by the Ramsey's Reset test.

AR1_2F(2,19) is the Breusch-Godfrey Lagrange multiplier (LM) test statistic for series auto correlation up to the second lag; ARCH is a test for auto-regressive conditional Hetroscedesticity; Normality $X^2(.)$ is the Jarque-Bera test for normality and σ is the standard error of the regression. As the models passed diagnostic test for model adequacies, the model can be used for inference. To sum up, based on the findings

and discussions of the result in this section, conclusions and policy recommendations will be made in the next chapter.

CHAPTER FIVE

CONCLUSIONS AND POLICY RECOMMENDATIONS

5.1 CONCLUSIONS

The trade strategy Ethiopia was following pre 1992 was classified as a strongly inward oriented one which made use of extensive tariff and non-tariff barriers. Since 1992 there has been progress in policy reforms towards market and price deregulation. Steps have been taken in liberalizing the foreign exchange market, attaining macroeconomic stabilization and attracting investors towards the sector. The country has made significant policy reform in reducing the anti-export bias in its trade policy. The foreign exchange market is liberalized and import protection has also been reduced considerably. However, while the relative incentives to exporting have improved export earnings, there exists severe lack of export diversification.

In Ethiopia, the concern for export diversification has started with the First Five-Year Development Plan which acknowledged the economic instability consequences of the dependence on few commodities. Such objective was further strengthened in the second Five-Year Development Plan and the share of non-coffee commodity products increased and the commodity concentration index decreased to 0.42 in 1973 and 0.38 in 1974 which was relatively small. Export diversification was also one of the objectives of the Ten Years Perspective Plan of the Dergue Regime. Finally, the current government (EPRDF) also acknowledges the importance of export

diversification and is stated in the ADLI as well as the accompanying Export Development Strategy.

Trade liberalization was designed, amongst other things, to reverse and even eliminate the trade deficit through increasing export earnings and curtailing the demand for imports. Incentives geared towards the export-oriented trade and market-determined exchange rate policies are expected to encourage both coffee and non-coffee exports. Nevertheless, merchandise exports continued to rise whilst imports has been rising at increasing rate throughout the liberalization period since 1992; thereafter, the value of exports improved markedly. The persistent trade deficit simply reflects the composition of Ethiopia's export basket (primarily coffee and other primary commodities) and import basket (manufactures, equipment and machinery) and the impact of deteriorating terms of trade.

There are still a number of problems that increase trade costs: paperwork and slow clearing procedures for exporting, the high cost, and high freight charges. These high transaction costs make exporters less competitive in export markets. It appears that although export earnings have been increasing since the trade policy reform, more needs to be done on diversifying the country's export composition.

Primary products are subject to large shifts in the demand schedule because of changes in the cyclical character of industrial activity in the

more developed economies, while other products have a relatively stable demand pattern. Therefore, Primary products can be expected to be more volatile than manufactured goods, and the export of the country is typically more highly concentrated on those commodities. Moreover, products differ in the extent to which they are subject to fluctuations on the supply side; some are affected by the weather or by the incidence of various types of plant diseases. The overall result is that the extent of fluctuations in price and volume traded differs markedly from one product to another. In this respect, if the country specializes in the more volatile products it will tend to show a more marked instability of export revenues, for a given concentration of exports, than the portfolio consists primarily of stable and diversified products.

The case for diversification rests on the argument that the major export contributes disproportionately to the fluctuations in total exports earnings. Therefore, it is concluded that for the country for which the major commodity disproportionately contributes to the instability of total export receipts, there is a positive association between concentration and export earnings instability.

Thus, to investigate the relationship between commodity concentration and instability, one has to look into not only the share of the major product in total exports but also in the relative stability of the major

product and to covariance with other export items. The regression result supports this argument as it is found strong positive association between commodity concentration and instability. The major export earner, coffee, has been highly volatile and contribute much to the total export earning instability.

Thus, the fluctuation in export earnings results not only from high export concentration, as defined by the Gini coefficient, but from concentration on the export of primary products where the intercorrelation of their price is high and in the same direction. Hence, the general case for diversification (or, indeed, for industrialization) as a cure for fluctuation in export earnings receives support from this investigation. Therefore, diversification towards the commodities that enjoys higher prices i.e. manufacturing and low income elastic commodities could reduce instability in export revenue.

The study has also examined the causal impact of short-run export instability on income the result obtained indicate that there is evidence of causality running from export instability to short-run instability in income. This evidence strongly supports therefore, the conventional view that export instability induces short-run macro-economic instability.

The inherent problem of dependency on coffee is borne out by declining world prices and resulting in export earnings instability. Prices for other exports, cotton and tea prices are becoming fairly stable. The strategy to reduce export commodity concentration is indicated by a relatively sharp rise in the percentage share of non-coffee agricultural exports. However, Ethiopia's exports, especially from coffee, still constitute the major share of foreign exchange earnings (and will remain so for the foreseeable future) implying undiversified export composition.

5.2 POLICY RECOMMENDATIONS

Based on the findings of this study the following policy implications may be drawn. Ethiopia can take measures to encourage export diversification, both in terms of quality and niche markets for coffee and non-coffee commodities. Trade policy reforms are part of such a strategy.

To insulate the economy from adverse terms of trade and instability in export earnings associated with commodity concentration, there has to be a policy shift to diversify the country's exports to include non-coffee (mainly agricultural) exports and manufactures.

Based on the export item in which the country has comparative advantage, new commodities have to be included and efforts should be made to increase their share in the export composition. In addition to the

existing export items like coffee, hides and skin and chat, other mainly agricultural commodities such as sesame seeds, maize, beans, horticulture, cotton, fish and processed products should be added to the export mix to enhance the export performance.

There is also some gain in choosing exporting food stuffs that will help reduce the fluctuations in providing the economy with greater flexibility in adapting the structure of its production to changes in market conditions. Hence the country can achieve stable export earnings by exporting food stuffs as they are low income elastic. Concluding, the efforts of policy makers to diversify exports could be misguided unless consideration is also given as to how the various commodities fluctuate about their trends and to the relationship in these fluctuations.

Exports from Ethiopia are not only composed of a few commodities but also are destined to a small number of export markets, mainly the European Union and North America. The problem related to regional trade is that it is constrained by poor transport and communication systems, and long border and customs clearance delays. Furthermore, Ethiopia produces similar, in most cases, primary commodities as these produced by neighboring countries. This similarity reduces the potential for trade with neighboring countries. Thus, the market for these primary commodities in the region is limited. A more obvious factor for Ethiopia

produces primary commodities, generally the same as those produced by neighbors, which are only likely to be demanded (in large volumes) by industrial countries. Ethiopia produces the same goods as its neighbors. This trade similarity reduces the potential for trade with neighbors. The study has also showed that geographic concentration does not significantly contribute to export earnings instability in the long-run equation.

One observation, however, needs to be made on the result that shows short-run export instability causes income instability. Although the evidence points to a causal short-run relationship, it doesn't provide information on the specific nature of internal transmission mechanisms. Light is not shed on whether the short-term impact of export instability is transmitted through, fore example, producers' income and/or government expenditures. Nevertheless, the results do indicate a strong case for the 'existence of a short-run instability problem' as the country tends to depend on exports as a source of income.

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ADDIS ABABA UNIVERSITY SCHOOL OF GRADUATE STUDIES

FACULTY OF BUSSINESS AND ECONOMICS DEPARTMENT OF ECONOMICS

THE ROLE OF DIVERSIFICATION IN REDUCING IMPACTS OF EXPORT INSTABILTY ON ETHIOPIAN ECONOMIC GROWTH:

An Empirical Investigation

By
Shewangizaw Sileshi Belihu

Approved by the board of examiners:

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